

Fourth Quarter 2010



## Focus Product Selector Guide

Featuring:

8-, 16- and 32-bit PIC® Microcontrollers

dsPIC® Digital Signal Controllers

Analog & Interface Products

Serial EEPROMs, Serial SRAMs, SST NOR Flash Memory

Wireless and RF Products



Training



Collateral



Development



Support



Design



Availability

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The dsPIC family of Digital Signal Controllers (DSCs) features a fully implemented digital signal processor (DSP) engine, with up to 40 MIPS non-pipelined performance, C compiler friendly design, and a familiar microcontroller architecture and design environment. The dsPIC 16-bit Flash DSCs provide the industry's highest performance, and have features supporting motor control, digital power conversion, speech and audio, intelligent sensing and general purpose embedded control applications. For more information visit: [www.microchip.com/dsPIC](http://www.microchip.com/dsPIC)

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[www.microchip.com/analog](http://www.microchip.com/analog)

## Wireless Products

Microchip offers radio-frequency products for adding wireless connectivity to embedded PIC microcontroller and dsPIC DSC-based designs for the following technologies: IEEE 802.15.4/ZigBee, Sub-GHz RF and IEEE 802.11/Wi-Fi. For more information visit: [www.microchip.com/wireless](http://www.microchip.com/wireless)

## Memory Products

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## Real-Time Clocks

Microchip offers a family of highly integrated, low cost Real Time Clock/Calendar devices with battery backup capability, digital trimming along with onboard EEPROM and SRAM memory. For more information visit: [www.microchip.com/clock](http://www.microchip.com/clock)

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# 8-bit PIC® Microcontrollers

| Product    | Released (R)<br>Not Released (NR) |       | Pins |         | Core                | Memory    |            |              |             | Voltage Range | Operating Speed |                     | LCD Segments | Analog Sensing & Measurement |                              |           |            |            | Digital     |     |      |             |              | Communication |        |     |     |                    | Monitors |      | 5 ku Pricing† | Packages (Designator) | Special Features |                  |  |                                     |                      |
|------------|-----------------------------------|-------|------|---------|---------------------|-----------|------------|--------------|-------------|---------------|-----------------|---------------------|--------------|------------------------------|------------------------------|-----------|------------|------------|-------------|-----|------|-------------|--------------|---------------|--------|-----|-----|--------------------|----------|------|---------------|-----------------------|------------------|------------------|--|-------------------------------------|----------------------|
|            | Released (R)<br>Not Released (NR) | Total | I/O  | Program |                     | Self-Read | Self-Write | Data RAM (B) | Data EE (B) |               | Maximum Speed   | Internal Oscillator |              | mTouch™ Channels             | Charge Time Measurement Unit | 8-bit ADC | 10-bit ADC | 12-bit ADC | Comparators | CCP | ECCP | 8-bit Timer | 16-bit Timer | AUSART        | EUSART | PC™ | SPI | Ethernet (MAC/PHY) | FS-USB   | ECAN |               |                       |                  | BOR/PBOR         | PLVD   | SR-Latch                            | Timer 1 Gate         |
| PIC10F200  | R                                 | 6     | 4    | BL      | 0.375 KB<br>0.25 Kw | -         | -          | 16           | -           | 2V-5.5V       | 4 MHz           | 4 MHz               | 0            | -                            | -                            | -         | -          | 0          | -           | -   | 1    | -           | -            | -             | -      | -   | -   | -                  | -        | -    | -             | -                     | -                | \$0.30           | PDIP (P), 2x3 DFN (MC), SOT-23 (OT)                        | Smallest form-factor                |                      |
| PIC10F202  | R                                 | 6     | 4    | BL      | 0.75 KB<br>0.50 Kw  | -         | -          | 24           | -           | 2V-5.5V       | 4 MHz           | 4 MHz               | 0            | -                            | -                            | -         | -          | 0          | -           | -   | 1    | -           | -            | -             | -      | -   | -   | -                  | -        | -    | -             | -                     | -                | \$0.33           | PDIP (P), 2x3 DFN (MC), SOT-23 (OT)                        | Smallest form-factor                |                      |
| PIC10F204  | R                                 | 6     | 4    | BL      | 0.375 KB<br>0.25 Kw | -         | -          | 16           | -           | 2V-5.5V       | 4 MHz           | 4 MHz               | 0            | 1                            | -                            | -         | -          | 1          | -           | -   | 1    | -           | -            | -             | -      | -   | -   | -                  | -        | -    | -             | -                     | -                | \$0.33           | PDIP (P), 2x3 DFN (MC), SOT-23 (OT)                        | Smallest form-factor                |                      |
| PIC10F206  | R                                 | 6     | 4    | BL      | 0.75 KB<br>0.50 Kw  | -         | -          | 24           | -           | 2V-5.5V       | 4 MHz           | 4 MHz               | 0            | 1                            | -                            | -         | -          | 1          | -           | -   | 1    | -           | -            | -             | -      | -   | -   | -                  | -        | -    | -             | -                     | -                | \$0.36           | PDIP (P), 2x3 DFN (MC), SOT-23 (OT)                        | Smallest form-factor                |                      |
| PIC10F220  | R                                 | 6     | 4    | BL      | 0.375 KB<br>0.25 Kw | -         | -          | 16           | -           | 2V-5.5V       | 8 MHz           | 4 MHz, 8 MHz        | 0            | 2                            | -                            | 2         | -          | 0          | -           | -   | 1    | -           | -            | -             | -      | -   | -   | -                  | -        | -    | -             | -                     | -                | -                | \$0.36   | PDIP (P), 2x3 DFN (MC), SOT-23 (OT) | Smallest form-factor |
| PIC10F222  | R                                 | 6     | 4    | BL      | 0.75 KB<br>0.50 Kw  | -         | -          | 23           | -           | 2V-5.5V       | 8 MHz           | 4 MHz, 8 MHz        | 0            | 2                            | -                            | 2         | -          | 0          | -           | -   | 1    | -           | -            | -             | -      | -   | -   | -                  | -        | -    | -             | -                     | -                | -                | \$0.39   | PDIP (P), 2x3 DFN (MC), SOT-23 (OT) | Smallest form-factor |
| PIC10F320  | NR                                | 6     | 4    | MR      | 4375 KB<br>0.25 Kw  | ✓         | ✓          | 32           | -           | 1.8V-5.5V     | 16 MHz          | 16 MHz              | 0            | 3                            | -                            | 3         | -          | 0          | -           | -   | 2    | 1           | -            | -             | -      | -   | -   | -                  | -        | -    | -             | -                     | -                | \$0.39           | PDIP (P), 2x3 DFN (MC), SOT-23 (OT)                        | CLC, CWG, DDS, Temp*                |                      |
| PIC10F322  | NR                                | 6     | 4    | MR      | 0.875 KB<br>0.50 Kw | ✓         | ✓          | 64           | -           | 1.8V-5.5V     | 16 MHz          | 16 MHz              | 0            | 3                            | -                            | 3         | -          | 0          | -           | -   | 2    | 1           | -            | -             | -      | -   | -   | -                  | -        | -    | -             | -                     | -                | \$0.42           | PDIP (P), 2x3 DFN (MC), SOT-23 (OT)                        | CLC, CWG, DDS, Temp*                |                      |
| PIC12F508  | R                                 | 8     | 6    | BL      | 0.75 KB<br>0.50 Kw  | -         | -          | 25           | -           | 2V-5.5V       | 4 MHz           | 4 MHz               | 0            | -                            | -                            | -         | -          | 0          | -           | -   | 1    | -           | -            | -             | -      | -   | -   | -                  | -        | -    | -             | -                     | -                | \$0.41           | PDIP (P), SOIC (SN), MSOP (MS), 2x3 DFN (MC)               | -                                   |                      |
| PIC12F509  | R                                 | 8     | 6    | BL      | 1.5 KB<br>1 Kw      | -         | -          | 41           | -           | 2V-5.5V       | 4 MHz           | 4 MHz               | 0            | -                            | -                            | -         | -          | 0          | -           | -   | 1    | -           | -            | -             | -      | -   | -   | -                  | -        | -    | -             | -                     | -                | \$0.45           | PDIP (P), SOIC (SN), MSOP (MS), 2x3 DFN (MC)               | -                                   |                      |
| PIC12F510  | R                                 | 8     | 6    | BL      | 1.5 KB<br>1 Kw      | -         | -          | 38           | -           | 2V-5.5V       | 8 MHz           | 4 MHz, 8 MHz        | 0            | 3                            | -                            | 3         | -          | 1          | -           | -   | 1    | -           | -            | -             | -      | -   | -   | -                  | -        | -    | -             | -                     | -                | \$0.49           | PDIP (P), SOIC (SN), MSOP (MS), 2x3 DFN (MC)               | -                                   |                      |
| PIC12F519  | R                                 | 8     | 6    | BL      | 1.5 KB<br>1 Kw      | -         | -          | 41           | 64          | 2V-5.5V       | 8 MHz           | 4 MHz, 8 MHz        | 0            | -                            | -                            | -         | -          | 0          | -           | -   | 1    | -           | -            | -             | -      | -   | -   | -                  | -        | -    | -             | -                     | -                | \$0.49           | PDIP (P), SOIC (SN), MSOP (MS), 2x3 DFN (MC)               | Lowest cost Data EE                 |                      |
| PIC12F609  | R                                 | 8     | 6    | MR      | 1.75 KB<br>1 Kw     | -         | -          | 64           | -           | 2V-15V        | 20 MHz          | 4 MHz, 8 MHz        | 0            | -                            | -                            | -         | -          | 1          | -           | -   | 1    | 1           | -            | -             | -      | -   | -   | -                  | -        | -    | -             | -                     | -                | \$0.52           | PDIP (P), SOIC (SN), MSOP (MS), 4x4 DFN (MD), 3x3 DFN (MF) | -                                   |                      |
| PIC12F615  | R                                 | 8     | 6    | MR      | 1.75 KB<br>1 Kw     | -         | -          | 64           | -           | 2V-15V        | 20 MHz          | 4 MHz, 8 MHz        | 0            | 4                            | -                            | 4         | -          | 1          | -           | 1   | 2    | 1           | -            | -             | -      | -   | -   | -                  | -        | -    | -             | -                     | -                | \$0.55           | PDIP (P), SOIC (SN), MSOP (MS), 4x4 DFN (MD), 3x3 DFN (MF) | -                                   |                      |
| PIC12F617  | R                                 | 8     | 6    | MR      | 3.5 KB<br>2 Kw      | ✓         | ✓          | 128          | -           | 2V-5.5V       | 20 MHz          | 4 MHz, 8 MHz        | 0            | 4                            | -                            | 4         | -          | 1          | -           | 1   | 2    | 1           | -            | -             | -      | -   | -   | -                  | -        | -    | -             | -                     | -                | \$0.59           | PDIP (P), SOIC (SN), MSOP (MS), 3x3 DFN (MF)               | -                                   |                      |
| PIC12F629  | R                                 | 8     | 6    | MR      | 1.75 KB<br>1 Kw     | -         | -          | 64           | 128         | 2V-5.5V       | 20 MHz          | 4 MHz               | 0            | -                            | -                            | -         | -          | 1          | -           | -   | 1    | 1           | -            | -             | -      | -   | -   | -                  | -        | -    | -             | -                     | -                | \$0.70           | PDIP (P), SOIC (SN), 4x4 DFN (MD), 6x5 DFN (MF)            | -                                   |                      |
| PIC12F1822 | R                                 | 8     | 6    | EMR     | 3.5 KB<br>2 Kw      | ✓         | ✓          | 128          | 256         | 1.8V-5.5V     | 32 MHz          | 32 MHz, 31 kHz      | 0            | 4                            | -                            | 4         | -          | 1          | -           | 1   | 2    | 1           | -            | 1             | 1      | 1   | -   | -                  | -        | -    | -             | -                     | -                | \$0.73           | PDIP (P), SOIC (SN), 3x3 DFN (MF)                          | XLP, Temp*                          |                      |
| PIC12F675  | R                                 | 8     | 6    | MR      | 1.75 KB<br>1 Kw     | -         | -          | 64           | 128         | 2V-5.5V       | 20 MHz          | 4 MHz               | 0            | 3                            | -                            | 3         | -          | 1          | -           | -   | 1    | 1           | -            | -             | -      | -   | -   | -                  | -        | -    | -             | -                     | -                | \$0.77           | PDIP (P), SOIC (SN), 4x4 DFN (MD), 6x5 DFN (MF)            | -                                   |                      |
| PIC12F635  | R                                 | 8     | 6    | MR      | 1.75 KB<br>1 Kw     | -         | -          | 64           | 128         | 2V-5.5V       | 20 MHz          | 8 MHz, 31 kHz       | 0            | -                            | -                            | -         | -          | 1          | -           | -   | 1    | 1           | -            | -             | -      | -   | -   | -                  | -        | -    | -             | -                     | -                | \$0.84           | PDIP (P), SOIC (SN), 4x4 DFN (MD)                          | KeepLo®                             |                      |
| PIC12F683  | R                                 | 8     | 6    | MR      | 3.5 KB<br>2 Kw      | -         | -          | 128          | 256         | 2V-5.5V       | 20 MHz          | 8 MHz, 31 kHz       | 0            | 3                            | -                            | 3         | -          | 1          | 1           | -   | 2    | 1           | -            | -             | -      | -   | -   | -                  | -        | -    | -             | -                     | -                | \$0.91           | PDIP (P), SOIC (SN), 4x4 DFN (MD)                          | -                                   |                      |
| PIC12F752  | NR                                | 8     | 6    | MR      | 1.75 KB<br>1 Kw     | -         | -          | 64           | -           | 2V-5.5V       | 20 MHz          | 4 MHz, 8 MHz        | 0            | 4                            | -                            | 4         | -          | 2          | 1           | -   | 3    | 1           | -            | -             | -      | -   | -   | -                  | -        | -    | -             | -                     | -                | Call for Pricing | PDIP (P), SOIC (SN), 3x3 DFN (MF)                          | CWG                                 |                      |
| PIC16F505  | R                                 | 14    | 12   | BL      | 1.5 KB<br>1 Kw      | -         | -          | 72           | -           | 2V-5.5V       | 20 MHz          | 4 MHz               | 0            | -                            | -                            | -         | -          | 0          | -           | -   | 1    | -           | -            | -             | -      | -   | -   | -                  | -        | -    | -             | -                     | -                | \$0.48           | PDIP (P), SOIC (SL), TSSOP (ST), 3x3 OFN (MG)              | -                                   |                      |
| PIC16F506  | R                                 | 14    | 12   | BL      | 1.5 KB<br>1 Kw      | -         | -          | 67           | -           | 2V-5.5V       | 20 MHz          | 4/8 MHz             | 0            | 4                            | -                            | 4         | -          | 2          | -           | -   | 1    | -           | -            | -             | -      | -   | -   | -                  | -        | -    | -             | -                     | -                | \$0.52           | PDIP (P), SOIC (SL), TSSOP (ST), 3x3 OFN (MG)              | -                                   |                      |
| PIC16F526  | R                                 | 14    | 12   | BL      | 1.5 KB<br>1 Kw      | -         | -          | 67           | 64          | 2V-5.5V       | 20 MHz          | 4/8 MHz             | 0            | 4                            | -                            | 4         | -          | 2          | -           | -   | 1    | -           | -            | -             | -      | -   | -   | -                  | -        | -    | -             | -                     | -                | \$0.55           | PDIP (P), SOIC (SL), TSSOP (ST), 3x3 OFN (MG)              | Lowest cost Data EE                 |                      |
| PIC16F610  | R                                 | 14    | 12   | MR      | 1.75 KB<br>1 Kw     | -         | -          | 64           | -           | 2V-15V        | 20 MHz          | 4/8 MHz             | 0            | -                            | -                            | -         | -          | 2          | -           | -   | 1    | 1           | -            | -             | -      | -   | -   | -                  | -        | -    | -             | -                     | -                | \$0.59           | PDIP (P), SOIC (SL), TSSOP (ST), 4x4 OFN (ML)              | -                                   |                      |
| PIC16F616  | R                                 | 14    | 12   | MR      | 3.5 KB<br>2 Kw      | -         | -          | 128          | -           | 2V-15V        | 20 MHz          | 4/8 MHz             | 0            | 8                            | -                            | 8         | -          | 2          | -           | 1   | 2    | 1           | -            | -             | -      | -   | -   | -                  | -        | -    | -             | -                     | -                | \$0.69           | PDIP (P), SOIC (SL), TSSOP (ST), 4x4 OFN (ML)              | -                                   |                      |
| PIC16F1823 | R                                 | 14    | 12   | EMR     | 3.5 KB<br>2 Kw      | ✓         | ✓          | 128          | 256         | 1.8V-5.5V     | 32 MHz          | 32 MHz, 31 kHz      | 0            | 8                            | -                            | 8         | -          | 2          | -           | 1   | 2    | 1           | -            | 1             | 1      | 1   | -   | -                  | -        | -    | -             | -                     | -                | \$0.78           | PDIP (P), SOIC (SL), TSSOP (ST), 4x4 OFN (ML)              | XLP, Temp*                          |                      |
| PIC16F1824 | R                                 | 14    | 12   | EMR     | 7 KB<br>4 Kw        | ✓         | ✓          | 256          | 256         | 1.8V-5.5V     | 32 MHz          | 32 MHz, 31 kHz      | 0            | 8                            | -                            | 8         | -          | 2          | 2           | 2   | 2    | 4           | 1            | -             | 1      | 1   | 1   | -                  | -        | -    | -             | -                     | -                | \$0.84           | PDIP (P), SOIC (SL), TSSOP (ST), 4x4 OFN (ML)              | DSM, XLP, Temp*                     |                      |
| PIC16F630  | R                                 | 14    | 12   | MR      | 1.75 KB<br>1 Kw     | -         | -          | 64           | 128         | 2V-5.5V       | 20 MHz          | 4 MHz               | 0            | -                            | -                            | -         | -          | 1          | -           | -   | 1    | 1           | -            | -             | -      | -   | -   | -                  | -        | -    | -             | -                     | -                | \$0.91           | PDIP (P), SOIC (SL), TSSOP (ST), 4x4 OFN (ML)              | -                                   |                      |
| PIC16F636  | R                                 | 14    | 12   | MR      | 3.5 KB<br>2 Kw      | -         | -          | 128          | 256         | 2V-5.5V       | 20 MHz          | 8 MHz, 31 kHz       | 0            | -                            | -                            | -         | -          | 2          | -           | -   | 1    | 1           | -            | -             | -      | -   | -   | -                  | -        | -    | -             | -                     | -                | \$0.92           | PDIP (P), SOIC (SL), TSSOP (ST), 4x4 OFN (ML)              | KeepLo®                             |                      |
| PIC16F1825 | NR                                | 14    | 12   | EMR     | 14 KB<br>8 Kw       | ✓         | ✓          | 1024         | 256         | 1.8V-5.5V     | 32 MHz          | 32 MHz, 31 kHz      | 0            | 8                            | -                            | 8         | -          | 2          | 2           | 2   | 2    | 4           | 1            | -             | 1      | 1   | 1   | -                  | -        | -    | -             | -                     | -                | \$0.92           | PDIP (P), SOIC (SL), TSSOP (ST), 4x4 OFN (ML)              | DSM, XLP, Temp*                     |                      |

Products sorted by pin count followed by pricing.  
 † - Pricing subject to change; please contact your Microchip representative for most current pricing.  
 ◊ - Software PLVD implemented via ADC.  
 \*Reference Application Note AN1333 for temperature indicator implementation.

## 8-bit PIC® Microcontrollers

| Product        | Released (R)<br>Not Released (NR) | Pins        |     | Core | Memory  |                    |              |              | Voltage Range | Operating Speed |               | LCD Segments | mTouch™ Channels   | Analog Sensing & Measurement |                              |           |            | Digital    |             |     |      | Communication |              |        |        | ECAN | Monitors |     |                    | Timer 1 Gate | 5 Ku Pricing† | Packages (Designator) | Special Features |   |   |   |  |                                  |
|----------------|-----------------------------------|-------------|-----|------|---------|--------------------|--------------|--------------|---------------|-----------------|---------------|--------------|--------------------|------------------------------|------------------------------|-----------|------------|------------|-------------|-----|------|---------------|--------------|--------|--------|------|----------|-----|--------------------|--------------|---------------|-----------------------|------------------|---|---|---|--|----------------------------------|
|                |                                   | Total       | I/O |      | Program | Self-Read          | Self-Write   | Data RAM (B) |               | Data EE (B)     | Maximum Speed |              |                    | Internal Oscillator          | Change Time Measurement Unit | 8-bit ADC | 10-bit ADC | 12-bit ADC | Comparators | CCP | ECCP | 8-bit Timer   | 16-bit Timer | AUSART | EUSART |      | IC™      | SPI | Ethernet (MAC/PHY) |              |               |                       |                  | F-USB   | BOR/BOR   | PLVD  | SR-Latch                                 |                                  |
| 14-Pin (Cont.) | PIC16F676                         | R           | 14  | 12   | MR      | 1.75 KB<br>1 Kw    | -            | -            | 64            | 128             | 2V-5.5V       | 20 MHz       | 4 MHz              | 0                            | 8                            | -         | -          | 8          | -           | 1   | -    | -             | 1            | 1      | -      | -    | -        | -   | -                  | BOR          | -             | -                     | ✓                | \$0.98  | PDIP (P), SOIC (SL), TSSOP (ST), 4x4 OFN (ML)   | -   |  |                                  |
|                | PIC16F684                         | R           | 14  | 12   | MR      | 3.5 KB<br>2 Kw     | -            | -            | 128           | 256             | 2V-5.5V       | 20 MHz       | 8 MHz, 31 kHz      | 0                            | 8                            | -         | -          | 8          | -           | 2   | -    | 1             | 2            | 1      | -      | -    | -        | -   | -                  | BOR          | -             | -                     | ✓                | \$0.98  | PDIP (P), SOIC (SL), TSSOP (ST), 4x4 OFN (ML)   | -   |  |                                  |
|                | PIC16F688                         | R           | 14  | 12   | MR      | 7 KB<br>4 Kw       | ✓            | -            | 256           | 256             | 2V-5.5V       | 20 MHz       | 8 MHz, 31 kHz      | 0                            | 8                            | -         | -          | 8          | -           | 2   | -    | 1             | 1            | -      | 1      | -    | -        | -   | BOR                | -            | -             | ✓                     | \$1.04           | PDIP (P), SOIC (SL), TSSOP (ST), 4x4 OFN (ML) | -   |   |  |                                  |
| 18-Pin         | PIC16F54                          | R           | 18  | 12   | BL      | 0.75 KB<br>0.50 Kw | -            | -            | 25            | -               | 2V-5.5V       | 20 MHz       | 0                  | 0                            | -                            | -         | -          | -          | 0           | -   | -    | 1             | -            | -      | -      | -    | -        | -   | -                  | -            | -             | -                     | -                | \$0.39  | PDIP (P), SOIC (SO), SSOP (SS)                  | -   |  |                                  |
|                | PIC16F716                         | R           | 18  | 13   | MR      | 3.5 KB<br>2 Kw     | -            | -            | 128           | -               | 2V-5.5V       | 20 MHz       | 0                  | 0                            | -                            | -         | -          | 4          | -           | 0   | -    | 1             | 2            | 1      | -      | -    | -        | -   | -                  | BOR          | -             | -                     | -                | \$0.77  | PDIP (P), SOIC (SO), SSOP (SS)                  | -   |  |                                  |
|                | PIC16F1826                        | R           | 18  | 16   | EMR     | 3.5 KB<br>2 Kw     | ✓            | ✓            | 256           | 256             | 1.8V-5.5V     | 32 MHz       | 32 MHz, 31 kHz     | 0                            | 12                           | -         | -          | 12         | -           | 2   | -    | 1             | 2            | 1      | -      | 1    | 1        | 1   | -                  | BOR          | SW0           | ✓                     | ✓                | \$0.97  | PDIP (P), SOIC (SO), SSOP (SS), OFN (ML)        | DSM, XLP, Temp*   |  |                                  |
|                | PIC16F1827                        | R           | 18  | 16   | EMR     | 7 KB<br>4 Kw       | ✓            | ✓            | 384           | 256             | 1.8V-5.5V     | 32 MHz       | 32 MHz, 31 kHz     | 0                            | 12                           | -         | -          | 12         | -           | 2   | 2    | 2             | 4            | 1      | -      | 1    | 2        | 2   | -                  | BOR          | SW0           | ✓                     | ✓                | \$1.04  | PDIP (P), SOIC (SO), SSOP (SS), OFN (ML)        | DSM, XLP, Temp*   |  |                                  |
|                | PIC16F627A                        | R           | 18  | 16   | MR      | 1.75 KB<br>1 Kw    | -            | -            | 224           | 128             | 2V-5.5V       | 20 MHz       | 4 MHz, 48 kHz      | 0                            | -                            | -         | -          | -          | 2           | 1   | -    | 2             | 1            | 1      | -      | -    | -        | -   | BOR                | -            | -             | -                     | \$1.30           | PDIP (P), SOIC (SO), SSOP (SS), OFN (ML)      | -   |   |  |                                  |
|                | PIC16F628A                        | R           | 18  | 16   | MR      | 3.5 KB<br>2 Kw     | -            | -            | 224           | 128             | 2V-5.5V       | 20 MHz       | 4 MHz, 48 kHz      | 0                            | -                            | -         | -          | -          | 2           | 1   | -    | 2             | 1            | 1      | -      | -    | -        | -   | BOR                | -            | -             | -                     | \$1.47           | PDIP (P), SOIC (SO), SSOP (SS), OFN (ML)      | -   |   |  |                                  |
|                | PIC16F648A                        | R           | 18  | 16   | MR      | 7 KB<br>4 Kw       | -            | -            | 256           | 256             | 2V-5.5V       | 20 MHz       | 4 MHz, 48 kHz      | 0                            | -                            | -         | -          | -          | 2           | 1   | -    | 2             | 1            | 1      | -      | -    | -        | -   | BOR                | -            | -             | -                     | \$1.67           | PDIP (P), SOIC (SO), SSOP (SS), OFN (ML)      | -   |   |  |                                  |
| 20-Pin         | PIC16F720                         | R           | 20  | 18   | MR      | 3.5 KB<br>2 Kw     | ✓            | ✓            | 128           | -               | 1.8V-5.5V     | 16 MHz       | 16 MHz,<br>500 kHz | 0                            | 12                           | -         | 12         | -          | 0           | 1   | -    | 2             | 1            | 1      | -      | 1    | 1        | -   | -                  | BOR          | SW0           | -                     | ✓                | \$0.77  | PDIP (P), SSOP (SS), SOIC (SO), OFN (ML)        | XLP, Temp*  |  |                                  |
|                | PIC16F721                         | R           | 20  | 18   | MR      | 7 KB<br>4 Kw       | ✓            | ✓            | 256           | -               | 1.8V-5.5V     | 16 MHz       | 16 MHz,<br>500 kHz | 0                            | 12                           | -         | 12         | -          | 0           | 1   | -    | 2             | 1            | 1      | -      | 1    | 1        | -   | -                  | BOR          | SW0           | -                     | ✓                | \$0.84  | PDIP (P), SSOP (SS), SOIC (SO), OFN (ML)        | XLP, Temp*  |  |                                  |
|                | PIC16F631                         | R           | 20  | 18   | MR      | 1.75 KB<br>1 Kw    | ✓            | -            | 64            | 128             | 2V-5.5V       | 20 MHz       | 8 MHz, 31 kHz      | 0                            | -                            | -         | -          | -          | 2           | -   | -    | 1             | 1            | -      | -      | -    | -        | -   | BOR                | SW0          | ✓             | ✓                     | \$0.91           | PDIP (P), SSOP (SS), SOIC (SO), OFN (ML)      | -   |   |  |                                  |
|                | PIC16F677                         | R           | 20  | 18   | MR      | 3.5 KB<br>2 Kw     | ✓            | -            | 128           | 256             | 2V-5.5V       | 20 MHz       | 8 MHz, 31 kHz      | 0                            | 12                           | -         | -          | 12         | -           | 2   | -    | -             | 1            | 1      | -      | -    | 1        | 1   | -                  | BOR          | SW0           | ✓                     | ✓                | \$0.99  | PDIP (P), SSOP (SS), SOIC (SO), OFN (ML)        | -   |  |                                  |
|                | PIC16F1828                        | R           | 20  | 18   | EMR     | 7 KB<br>4 Kw       | ✓            | ✓            | 256           | 256             | 1.8V-5.5V     | 32 MHz       | 32 MHz, 31 kHz     | 0                            | 12                           | -         | -          | 12         | -           | 2   | 2    | 2             | 4            | 1      | -      | 1    | 1        | 1   | -                  | BOR          | SW0           | ✓                     | ✓                | \$0.99  | PDIP (P), SSOP (SS), SOIC (SO), OFN (ML)        | DSM, XLP, Temp*   |  |                                  |
|                | PIC16F1829                        | NR          | 20  | 18   | EMR     | 14 KB<br>8 Kw      | ✓            | ✓            | 1024          | 256             | 1.8V-5.5V     | 32 MHz       | 32 MHz, 31 kHz     | 0                            | 12                           | -         | -          | 12         | -           | 2   | 2    | 2             | 4            | 1      | -      | 1    | 2        | 2   | -                  | BOR          | SW0           | ✓                     | ✓                | \$1.06  | PDIP (P), SSOP (SS), SOIC (SO), OFN (ML)        | DSM, XLP, Temp*   |  |                                  |
|                | PIC16F687                         | R           | 20  | 18   | MR      | 3.5 KB<br>2 Kw     | ✓            | -            | 128           | 256             | 2V-5.5V       | 20 MHz       | 8 MHz, 31 kHz      | 0                            | 12                           | -         | -          | 12         | -           | 2   | -    | -             | 1            | 1      | -      | 1    | 1        | -   | -                  | BOR          | SW0           | ✓                     | ✓                | \$1.07  | PDIP (P), SSOP (SS), SOIC (SO), OFN (ML)        | -   |  |                                  |
|                | PIC16F785                         | R           | 20  | 18   | MR      | 3.5 KB<br>2 Kw     | -            | -            | 128           | 256             | 2V-15V        | 20 MHz       | 8 MHz, 31 kHz      | 0                            | 12                           | -         | -          | 12         | -           | 2   | 1    | -             | 2            | 1      | -      | -    | -        | -   | -                  | BOR          | SW0           | -                     | ✓                | \$1.12  | PDIP (P), SSOP (SS), SOIC (SO), OFN (ML)        | 2-phase PWM, 2x Op Amp  |  |                                  |
|                | PIC16F685                         | R           | 20  | 18   | MR      | 7 KB<br>4 Kw       | ✓            | -            | 256           | 256             | 2V-5.5V       | 20 MHz       | 8 MHz, 31 kHz      | 0                            | 12                           | -         | -          | 12         | -           | 2   | -    | 1             | 2            | 1      | -      | -    | -        | -   | -                  | BOR          | SW0           | ✓                     | ✓                | \$1.13  | PDIP (P), SSOP (SS), SOIC (SO), OFN (ML)        | -   |  |                                  |
|                | PIC16F689                         | R           | 20  | 18   | MR      | 7 KB<br>4 Kw       | ✓            | -            | 256           | 256             | 2V-5.5V       | 20 MHz       | 8 MHz, 31 kHz      | 0                            | 12                           | -         | -          | 12         | -           | 2   | -    | -             | 1            | 1      | -      | 1    | 1        | -   | -                  | BOR          | SW0           | ✓                     | ✓                | \$1.13  | PDIP (P), SSOP (SS), SOIC (SO), OFN (ML)        | -   |  |                                  |
|                | PIC16F690                         | R           | 20  | 18   | MR      | 7 KB<br>4 Kw       | ✓            | -            | 256           | 256             | 2V-5.5V       | 20 MHz       | 8 MHz, 31 kHz      | 0                            | 12                           | -         | -          | 12         | -           | 2   | -    | -             | 1            | 2      | 1      | -    | 1        | 1   | -                  | BOR          | SW0           | ✓                     | ✓                | \$1.20  | PDIP (P), SSOP (SS), SOIC (SO), OFN (ML)        | -   |  |                                  |
|                | 28-Pin                            | PIC18F13K22 | R   | 20   | 18      | PIC18              | 8 KB<br>4 Kw | ✓            | ✓             | 256             | 256           | 1.8V-5.5V    | 64 MHz             | 64 MHz, 31 kHz               | 0                            | 12        | -          | -          | 12          | -   | 2    | -             | 1            | 1      | 3      | -    | 1        | 1   | 1                  | -            | -             | PBOR                  | SW0              | ✓   | -   | \$1.33  | PDIP (P), SSOP (SS), SOIC (SO), OFN (ML) | XLP, Temp*                       |
| PIC18F13K50    |                                   | R           | 20  | 15   | PIC18   | 8 KB<br>4 Kw       | ✓            | ✓            | 512           | 256             | 1.8V-5.5V     | 48 MHz       | 32 MHz, 31 kHz     | 0                            | 9                            | -         | -          | 9          | -           | 2   | -    | 1             | 1            | 3      | -      | 1    | 1        | 1   | -                  | 1            | -             | PBOR                  | SW0              | ✓   | -   | \$1.39  | PDIP (P), SSOP (SS), SOIC (SO), OFN (ML) | USB 2.0 (Full Speed), XLP, Temp* |
| PIC18F14K22    |                                   | R           | 20  | 18   | PIC18   | 16 KB<br>8 Kw      | ✓            | ✓            | 512           | 256             | 1.8V-5.5V     | 64 MHz       | 64 MHz, 31 kHz     | 0                            | 12                           | -         | -          | 12         | -           | 2   | -    | 1             | 1            | 3      | -      | 1    | 1        | 1   | -                  | -            | PBOR          | SW0                   | ✓                | -   | \$1.47  | PDIP (P), SSOP (SS), SOIC (SO), OFN (ML)                      | XLP, Temp*                               |                                  |
| PIC18F14K50    |                                   | R           | 20  | 15   | PIC18   | 16 KB<br>8 Kw      | ✓            | ✓            | 768           | 256             | 1.8V-5.5V     | 48 MHz       | 32 MHz, 31 kHz     | 0                            | 9                            | -         | -          | 9          | -           | 2   | -    | 1             | 1            | 3      | -      | 1    | 1        | 1   | -                  | 1            | -             | PBOR                  | SW0              | ✓   | -   | \$1.53  | PDIP (P), SSOP (SS), SOIC (SO), OFN (ML) | USB 2.0 (Full Speed), XLP, Temp* |
| PIC16F57       |                                   | R           | 28  | 20   | BL      | 3 KB<br>2 Kw       | -            | -            | 72            | -               | 2V-5.5V       | 20 MHz       | 0                  | 0                            | -                            | -         | -          | -          | -           | 0   | -    | -             | 1            | -      | -      | -    | -        | -   | -                  | -            | -             | -                     | -                | -   | \$0.52  | SPDIP (SP), SOIC (SO), SSOP (SS)                              | -  |                                  |
| 28-Pin         | PIC16F722A                        | R           | 28  | 25   | MR      | 3.5 KB<br>2 Kw     | ✓            | -            | 128           | -               | 1.8V-5.5V     | 20 MHz       | 16 MHz             | 0                            | 11                           | -         | -          | 11         | -           | 0   | 2    | -             | 2            | 1      | 1      | -    | 1        | 1   | -                  | -            | BOR           | SW0                   | -                | ✓   | \$0.78  | SPDIP (SP), SOIC (SO), SSOP (SS), 6x6 OFN (ML), 4x4 UQFN (MV) | XLP, Temp*                               |                                  |
|                | PIC16LF1902                       | NR          | 28  | 25   | EMR     | 3.5 KB<br>2 Kw     | ✓            | ✓            | 128           | -               | 1.8V-3.6V     | 20 MHz       | 16 MHz             | 72                           | 11                           | -         | -          | 11         | -           | -   | -    | -             | 1            | 1      | -      | -    | -        | -   | -                  | -            | -             | SW0                   | -                | -   | \$0.78  | SPDIP (SP), SOIC (SO), SSOP (SS), 4x4 UQFN (MV)               | Integrated LCD Driver, XLP, Temp*        |                                  |
|                | PIC16F723A                        | R           | 28  | 25   | MR      | 7 KB<br>4 Kw       | ✓            | -            | 192           | -               | 1.8V-5.5V     | 20 MHz       | 16 MHz             | 0                            | 11                           | -         | -          | 11         | -           | 0   | 2    | -             | 2            | 1      | 1      | -    | 1        | 1   | -                  | -            | BOR           | SW0                   | -                | ✓   | \$0.85  | SPDIP (SP), SOIC (SO), SSOP (SS), 6x6 OFN (ML), 4x4 UQFN (MV) | XLP, Temp*                               |                                  |
|                | PIC16LF1903                       | NR          | 28  | 25   | EMR     | 7 KB<br>4 Kw       | ✓            | ✓            | 256           | -               | 1.8V-3.6V     | 20 MHz       | 16 MHz             | 72                           | 11                           | -         | -          | 11         | -           | -   | -    | -             | -            | 1      | 1      | -    | -        | -   | -                  | -            | SW0           | -                     | -                | \$0.85  | SPDIP (SP), SOIC (SO), SSOP (SS), 4x4 UQFN (MV) | Integrated LCD Driver, XLP, Temp*                             |  |                                  |
|                | PIC16LF1906                       | NR          | 28  | 25   | EMR     | 14 KB<br>8 Kw      | ✓            | ✓            | 512           | -               | 1.8V-3.6V     | 20 MHz       | 16 MHz             | 72                           | 11                           | -         | -          | 11         | -           | -   | -    | -             | -            | 1      | 1      | -    | 1        | -   | -                  | -            | SW0           | -                     | -                | \$0.91  | SPDIP (SP), SOIC (SO), SSOP (SS), 4x4 UQFN (MV) | Integrated LCD Driver, XLP, Temp*                             |  |                                  |

Products sorted by pin count followed by pricing.

† - Pricing subject to change; please contact your Microchip representative for most current pricing.

◊ - Software PLVD implemented via ADC.

\*Reference Application Note AN1333 for temperature indicator implementation.

8-bit PIC® Microcontrollers

| Product     | Released (R) / Not Released (NR) |                   | Pins  |     | Core  | Memory  |           |            |              | Voltage Range | Operating Speed |               |                     | LCD Segments   | mTouch™ Channels | Analog Sensing & Measurement |           |            |            |             |     | Digital |             |              |        |        |     | Communication |                   |        |      |          |      | Monitors |              | 5 Ku Pricing† | Packages (Designator)   | Special Features |   |   |
|-------------|----------------------------------|-------------------|-------|-----|-------|---------|-----------|------------|--------------|---------------|-----------------|---------------|---------------------|----------------|------------------|------------------------------|-----------|------------|------------|-------------|-----|---------|-------------|--------------|--------|--------|-----|---------------|-------------------|--------|------|----------|------|----------|--------------|---------------|---|------------------|---|---|
|             |                                  |                   | Total | I/O |       | Program | Self-Read | Self-Write | Data RAM (B) |               | Data EE (B)     | Maximum Speed | Internal Oscillator |                |                  | Charge Time Measurement Unit | 8-bit ADC | 10-bit ADC | 12-bit ADC | Comparators | CCP | ECCP    | 8-bit Timer | 16-bit Timer | AUSART | EUSART | PC™ | SPI           | Ethernet (MACPHY) | FS-USB | ECAN | BOR/PBOR | PLVD | SR-Latch | Timer-1 Gate |               |   |                  |   |   |
|             | Released (R)                     | Not Released (NR) |       |     |       | KB      | KB        | KB         | KB           |               | MHz             | MHz           | kHz                 |                |                  | µs                           | µs        | µs         | µs         | µs          | µs  | µs      | µs          | µs           | µs     | µs     | µs  | µs            | µs                | µs     | µs   | µs       | µs   | µs       | µs           |               |   |                  | µs  | µs  |
| PIC16F1516  | R                                | NR                | 28    | 25  | EMR   | 14 KB   | 8 Kw      | ✓          | ✓            | 512           | –               | 1.8V-5.5V     | 20 MHz              | 16 MHz         | 0                | 17                           | –         | –          | 17         | –           | –   | 2       | –           | 2            | 1      | –      | 1   | 1             | 1                 | –      | –    | –        | –    | PBOR     | SW           | –             | ✓   | \$0.95           | SPDIP (SP), SSOP (SS), SOIC (SO), 4x4 UOFN (MV)               | XLP, Temp*  |
| PIC16F1518  | R                                | NR                | 28    | 25  | EMR   | 28 KB   | 16 Kw     | ✓          | ✓            | 1024          | –               | 1.8V-5.5V     | 20 MHz              | 16 MHz         | 0                | 17                           | –         | –          | 17         | –           | –   | 2       | –           | 2            | 1      | –      | 1   | 1             | 1                 | –      | –    | –        | –    | PBOR     | SW           | –             | ✓   | \$1.01           | SPDIP (SP), SSOP (SS), SOIC (SO), 4x4 UOFN (MV)               | XLP, Temp*  |
| PIC16F882   | R                                | R                 | 28    | 25  | MR    | 3.5 KB  | 2 Kw      | ✓          | ✓            | 128           | 128             | 2V-5.5V       | 20 MHz              | 8 MHz, 31 kHz  | 0                | 11                           | –         | –          | 11         | –           | 2   | 1       | 1           | 2            | 1      | –      | 1   | 1             | 1                 | –      | –    | –        | –    | BOR      | SW           | 0             | ✓   | \$1.16           | SPDIP (SP), SOIC (SO), SSOP (SS), 6x6 OFN (ML)                | –   |
| PIC16F726   | R                                | R                 | 28    | 25  | MR    | 14 KB   | 8 Kw      | ✓          | –            | 368           | –               | 1.8V-5.5V     | 20 MHz              | 16 MHz         | 0                | 11                           | –         | –          | 11         | –           | –   | 0       | 2           | –            | 2      | 1      | 1   | –             | –                 | –      | –    | BOR      | SW   | 0        | ✓            | \$1.23        | SPDIP (SP), SOIC (SO), SSOP (SS), 6x6 OFN (ML), 4x4 UOFN (MV) | XLP, Temp*       |   |   |
| PIC16F1933  | R                                | R                 | 28    | 25  | EMR   | 7 KB    | 4 Kw      | ✓          | ✓            | 256           | 256             | 1.8V-5.5V     | 32 MHz              | 32 MHz, 31 kHz | 60               | 11                           | –         | –          | 11         | –           | 2   | 2       | 3           | 4            | 1      | –      | 1   | 1             | 1                 | –      | –    | –        | –    | PBOR     | SW           | 0             | ✓   | \$1.23           | SPDIP (SP), SOIC (SO), SSOP (SS), 6x6 OFN (ML), 4x4 UOFN (MV) | XLP, Temp*  |
| PIC18F23K20 | R                                | R                 | 28    | 25  | PIC18 | 8 KB    | 4 Kw      | ✓          | ✓            | 512           | 256             | 1.8V-3.6V     | 64 MHz              | 16 MHz, 31 kHz | 0                | 11                           | –         | –          | 11         | –           | 2   | 1       | 1           | 1            | 3      | –      | 1   | 1             | 1                 | –      | –    | –        | –    | BOR      | ✓            | –             | –   | \$1.23           | SPDIP (SP), SOIC (SO), SSOP (SS), 6x6 OFN (ML), 4x4 UOFN (MV) | XLP   |
| PIC16F1936  | R                                | R                 | 28    | 25  | EMR   | 14 KB   | 8 Kw      | ✓          | ✓            | 512           | 256             | 1.8V-5.5V     | 32 MHz              | 32 MHz, 31 kHz | 60               | 11                           | –         | –          | 11         | –           | 2   | 2       | 3           | 4            | 1      | –      | 1   | 1             | 1                 | –      | –    | –        | –    | PBOR     | SW           | 0             | ✓   | \$1.30           | SPDIP (SP), SOIC (SO), SSOP (SS), 6x6 OFN (ML), 4x4 UOFN (MV) | XLP, Temp*  |
| PIC18F24K20 | R                                | R                 | 28    | 25  | PIC18 | 16 KB   | 8 Kw      | ✓          | ✓            | 768           | 256             | 1.8V-3.6V     | 64 MHz              | 16 MHz, 31 kHz | 0                | 11                           | –         | –          | 11         | –           | 2   | 1       | 1           | 1            | 3      | –      | 1   | 1             | 1                 | –      | –    | –        | –    | PBOR     | ✓            | –             | –   | \$1.30           | SPDIP (SP), SSOP (SS), SOIC (SO), 6x6 OFN (ML)                | XLP   |
| PIC16F883   | R                                | R                 | 28    | 25  | MR    | 7 KB    | 4 Kw      | ✓          | ✓            | 256           | 256             | 2V-5.5V       | 20 MHz              | 8 MHz, 31 kHz  | 0                | 11                           | –         | –          | 11         | –           | 2   | 1       | 1           | 2            | 1      | –      | 1   | 1             | 1                 | –      | –    | –        | –    | BOR      | SW           | 0             | ✓   | \$1.37           | SPDIP (SP), SSOP (SS), SOIC (SO), 6x6 OFN (ML)                | –   |
| PIC16F1938  | R                                | R                 | 28    | 25  | EMR   | 28 KB   | 16 Kw     | ✓          | ✓            | 1024          | 256             | 1.8V-5.5V     | 32 MHz              | 32 MHz, 31 kHz | 60               | 11                           | –         | –          | 11         | –           | 2   | 2       | 3           | 4            | 1      | –      | 1   | 1             | 1                 | –      | –    | –        | –    | PBOR     | SW           | 0             | ✓   | \$1.37           | SPDIP (SP), SOIC (SO), SSOP (SS), 6x6 OFN (ML), 4x4 UOFN (MV) | XLP, Temp*  |
| PIC18F25K20 | R                                | R                 | 28    | 25  | PIC18 | 32 KB   | 16 Kw     | ✓          | ✓            | 1536          | 256             | 1.8V-3.6V     | 64 MHz              | 16 MHz, 31 kHz | 0                | 11                           | –         | –          | 11         | –           | 2   | 1       | 1           | 1            | 3      | –      | 1   | 1             | 1                 | –      | –    | –        | –    | PBOR     | ✓            | –             | –   | \$1.37           | SPDIP (SP), SSOP (SS), SOIC (SO), 6x6 OFN (ML)                | XLP   |
| PIC18F23K22 | R                                | R                 | 28    | 25  | PIC18 | 8 KB    | 4 Kw      | ✓          | ✓            | 512           | 256             | 1.8V-5.5V     | 64 MHz              | 16 MHz, 31 kHz | 0                | 17                           | ✓         | –          | 17         | –           | 2   | 1       | 1           | 1            | 3      | –      | 2   | 2             | 2                 | –      | –    | –        | –    | PBOR     | ✓            | ✓             | ✓   | \$1.41           | SPDIP (SP), SOIC (SO), SSOP (SS), 6x6 OFN (ML), 4x4 UOFN (MV) | XLP, Temp*  |
| PIC18F24J10 | R                                | R                 | 28    | 21  | PIC18 | 16 KB   | 8 Kw      | ✓          | ✓            | 1024          | –               | 2V-3.6V       | 40 MHz              | 32 kHz         | 0                | 10                           | –         | –          | 10         | –           | 2   | 2       | –           | 1            | 2      | –      | 1   | 1             | 1                 | –      | –    | –        | –    | BOR      | –            | –             | –   | \$1.44           | SPDIP (SP), SOIC (SO), OFN (ML)                               | –   |
| PIC18F24K22 | R                                | R                 | 28    | 25  | PIC18 | 16 KB   | 8 Kw      | ✓          | ✓            | 768           | 256             | 1.8V-5.5V     | 64 MHz              | 16 MHz, 31 kHz | 0                | 17                           | ✓         | –          | 17         | –           | 2   | 1       | 1           | 1            | 3      | –      | 2   | 2             | 2                 | –      | –    | –        | –    | PBOR     | ✓            | ✓             | ✓   | \$1.48           | SPDIP (SP), SSOP (SS), SOIC (SO), 6x6 OFN (ML), 4x4 UOFN (MV) | XLP, Temp*  |
| PIC16F886   | R                                | R                 | 28    | 25  | MR    | 14 KB   | 8 Kw      | ✓          | ✓            | 368           | 256             | 2V-5.5V       | 20 MHz              | 8 MHz, 31 kHz  | 0                | 11                           | –         | –          | 11         | –           | 2   | 1       | 1           | 2            | 1      | –      | 1   | 1             | 1                 | –      | –    | –        | –    | BOR      | SW           | 0             | ✓   | \$1.49           | SPDIP (SP), SSOP (SS), SOIC (SO), 6x6 OFN (ML)                | –   |
| PIC18F25J10 | R                                | R                 | 28    | 21  | PIC18 | 32 KB   | 16 Kw     | ✓          | ✓            | 1024          | –               | 2V-3.6V       | 40 MHz              | 32 kHz         | 0                | 10                           | –         | –          | 10         | –           | 2   | 2       | –           | 1            | 2      | –      | 1   | 1             | 1                 | –      | –    | –        | –    | BOR      | –            | –             | –   | \$1.58           | SPDIP (SP), SSOP (SS), SOIC (SO), OFN (ML)                    | –   |
| PIC18F25K22 | R                                | R                 | 28    | 25  | PIC18 | 32 KB   | 16 Kw     | ✓          | ✓            | 1536          | 256             | 1.8V-5.5V     | 64 MHz              | 16 MHz, 31 kHz | 0                | 17                           | ✓         | –          | 17         | –           | 2   | 2       | 3           | 3            | 4      | –      | 2   | 2             | 2                 | –      | –    | –        | –    | PBOR     | ✓            | ✓             | ✓   | \$1.62           | SPDIP (SP), SSOP (SS), SOIC (SO), 6x6 OFN (ML)                | XLP, Temp*  |
| PIC18F24J11 | R                                | R                 | 28    | 21  | PIC18 | 16 KB   | 8 Kw      | ✓          | ✓            | 3800          | –               | 2V-3.6V       | 48 MHz              | 8 MHz, 31 kHz  | 0                | 10                           | ✓         | –          | 10         | –           | 2   | –       | 2           | 2            | 3      | –      | 2   | 2             | 2                 | –      | –    | –        | –    | BOR      | SW           | –             | –   | \$1.65           | SPDIP (SP), SOIC (SO), OFN (ML)                               | Peripheral Pin Select, Deep Sleep Mode, XLP                       |
| PIC18F26K20 | R                                | R                 | 28    | 25  | PIC18 | 64 KB   | 32 Kw     | ✓          | ✓            | 3936          | 1024            | 1.8V-3.6V     | 64 MHz              | 16 MHz, 31 kHz | 0                | 11                           | –         | –          | 11         | –           | 2   | 1       | 1           | 1            | 3      | –      | 1   | 1             | 1                 | –      | –    | –        | –    | PBOR     | ✓            | –             | –   | \$1.65           | SPDIP (SP), SSOP (SS), SOIC (SO), 6x6 OFN (ML)                | XLP, Temp*  |
| PIC18F25J11 | R                                | R                 | 28    | 21  | PIC18 | 32 KB   | 16 Kw     | ✓          | ✓            | 3800          | –               | 2V-3.6V       | 48 MHz              | 8 MHz, 31 kHz  | 0                | 10                           | ✓         | –          | 10         | –           | 2   | –       | 2           | 2            | 3      | –      | 2   | 2             | 2                 | –      | –    | –        | –    | BOR      | SW           | –             | –   | \$1.79           | SPDIP (SP), SSOP (SS), SOIC (SO), OFN (ML)                    | Peripheral Pin Select, Deep Sleep Mode, XLP                       |
| PIC18F24J50 | R                                | R                 | 28    | 22  | PIC18 | 16 KB   | 8 Kw      | ✓          | ✓            | 3800          | –               | 2V-3.6V       | 48 MHz              | 8 MHz, 31 kHz  | 0                | 10                           | ✓         | –          | 10         | –           | 2   | –       | 2           | 2            | 3      | –      | 2   | 2             | 2                 | –      | –    | –        | –    | BOR      | SW           | –             | –   | \$1.86           | SPDIP (SP), SOIC (SO), OFN (ML)                               | USB 2.0 (Full Speed), Peripheral Pin Select, Deep Sleep Mode, XLP |
| PIC18F26K22 | R                                | R                 | 28    | 25  | PIC18 | 64 KB   | 32 Kw     | ✓          | ✓            | 3896          | 1024            | 1.8V-5.5V     | 64 MHz              | 16 MHz, 31 kHz | 0                | 17                           | ✓         | –          | 17         | –           | 2   | 2       | 3           | 3            | 4      | –      | 2   | 2             | 2                 | –      | –    | –        | –    | PBOR     | ✓            | ✓             | ✓   | \$1.92           | SPDIP (SP), SSOP (SS), SOIC (SO), 6x6 OFN (ML)                | XLP, Temp*  |
| PIC18F25K80 | NR                               | NR                | 28    | 24  | PIC18 | 32 KB   | 16 Kw     | ✓          | ✓            | 3648          | 1024            | 1.8V-5.5V     | 64 MHz              | 8 MHz, 31 kHz  | 0                | 8                            | ✓         | –          | –          | 8           | 2   | 4       | 1           | 2            | 3      | –      | 2   | 1             | 1                 | –      | –    | –        | –    | PBOR     | ✓            | –             | –   | \$1.93           | SPDIP (SP), SSOP (SS), SOIC (SO), OFN (ML)                    | CAN 2.0, CTMU, Deep Sleep Mode, XLP                               |
| PIC18F25J50 | R                                | R                 | 28    | 22  | PIC18 | 32 KB   | 16 Kw     | ✓          | ✓            | 3800          | –               | 2V-3.6V       | 48 MHz              | 8 MHz, 31 kHz  | 0                | 10                           | ✓         | –          | 10         | –           | 2   | –       | 2           | 2            | 3      | –      | 2   | 2             | 2                 | –      | –    | –        | –    | BOR      | SW           | –             | –   | \$2.00           | SPDIP (SP), SSOP (SS), SOIC (SO), OFN (ML)                    | USB 2.0 (Full Speed), Peripheral Pin Select, Deep Sleep Mode, XLP |
| PIC18F26J11 | R                                | R                 | 28    | 21  | PIC18 | 64 KB   | 32 Kw     | ✓          | ✓            | 3800          | –               | 2V-3.6V       | 48 MHz              | 8 MHz, 31 kHz  | 0                | 10                           | ✓         | –          | 10         | –           | 2   | –       | 2           | 2            | 3      | –      | 2   | 2             | 2                 | –      | –    | –        | –    | BOR      | SW           | –             | –   | \$2.07           | SPDIP (SP), SSOP (SS), SOIC (SO), OFN (ML)                    | Peripheral Pin Select, Deep Sleep Mode, XLP                       |
| PIC18F26K80 | NR                               | NR                | 28    | 24  | PIC18 | 64 KB   | 32 Kw     | ✓          | ✓            | 3648          | 1024            | 1.8V-5.5V     | 64 MHz              | 8 MHz, 31 kHz  | 0                | 8                            | ✓         | –          | –          | 8           | 2   | 4       | 1           | 2            | 3      | –      | 2   | 1             | 1                 | –      | –    | –        | –    | PBOR     | ✓            | –             | –   | \$2.21           | SPDIP (SP), SSOP (SS), SOIC (SO), OFN (ML)                    | CAN 2.0, CTMU, Deep Sleep Mode, XLP                               |
| PIC18F2450  | R                                | R                 | 28    | 23  | PIC18 | 16 KB   | 8 Kw      | ✓          | ✓            | 768           | –               | 2V-5.5V       | 48 MHz              | 32 kHz         | 0                | –                            | –         | –          | 10         | –           | 0   | 1       | –           | 1            | 2      | –      | 1   | –             | –                 | –      | –    | –        | –    | PBOR     | SW           | –             | –   | \$2.23           | SPDIP (SP), SOIC (SO), OFN (ML)                               | USB 2.0 (Full Speed)  |
| PIC18F26J13 | R                                | R                 | 28    | 23  | PIC18 | 64 KB   | 32 Kw     | ✓          | ✓            | 3808          | –               | 2V-3.6V       | 48 MHz              | 8 MHz, 31 kHz  | 0                | 10                           | ✓         | –          | –          | 10          | 3   | 7       | 3           | 4            | 4      | –      | 2   | 2             | 2                 | –      | –    | –        | –    | BOR      | ✓            | –             | –   | \$2.24           | SPDIP (SP), SSOP (SS), SOIC (SO), OFN (ML)                    | SPI w/DMA, XLP  |
| PIC18F26J50 | R                                | R                 | 28    | 22  | PIC18 | 64 KB   | 32 Kw     | ✓          | ✓            | 3800          | –               | 2V-3.6V       | 48 MHz              | 8 MHz, 31 kHz  | 0                | 10                           | ✓         | –          | 10         | –           | 2   | –       | 2           | 2            | 3      | –      | 2   | 2             | 2                 | –      | –    | –        | –    | BOR      | SW           | –             | –   | \$2.28           | SPDIP (SP), SSOP (SS), SOIC (SO), OFN (ML)                    | USB 2.0 (Full Speed), Peripheral Pin Select, Deep Sleep Mode, XLP |
| PIC18F26J53 | R                                | R                 | 28    | 22  | PIC18 | 64 KB   | 32 Kw     | ✓          | ✓            | 3808          | –               | 2V-3.6V       | 48 MHz              | 8 MHz, 31 kHz  | 0                | 10                           | ✓         | –          | –          | 10          | 3   | 7       | 3           | 4            | 4      | –      | 2   | 2             | 2                 | –      | –    | –        | –    | BOR      | ✓            | –             | –   | \$2.45           | SPDIP (SP), SSOP (SS), SOIC (SO), OFN (ML)                    | USB 2.0 (Full Speed), SPI w/DMA, XLP                              |

Products sorted by pin count followed by pricing.  
 † - Pricing subject to change; please contact your Microchip representative for most current pricing.  
 0 - Software PLVD implemented via ADC.  
 \*Reference Application Note AN1333 for temperature indicator implementation.

## 8-bit PIC® Microcontrollers

| Product        | Released (R)<br>Not Released (NR) | Pins  |     | Core  | Memory         |                 |            |              | Voltage Range | Operating Speed |               |                     | LCD Segments   | mTouch™ Channels | Analog Sensing & Measurement |           |            |            | Digital     |     |      |             |              | Communication |        |     |     |                    | Monitors |      | SR-Latch | Timer-1 Gate | 5-ku Pricing† | Packages (Designator) | Special Features |                               |   |   |                                    |                                   |
|----------------|-----------------------------------|-------|-----|-------|----------------|-----------------|------------|--------------|---------------|-----------------|---------------|---------------------|----------------|------------------|------------------------------|-----------|------------|------------|-------------|-----|------|-------------|--------------|---------------|--------|-----|-----|--------------------|----------|------|----------|--------------|---------------|-----------------------|------------------|-------------------------------|---|---|------------------------------------|-----------------------------------|
|                |                                   | Total | I/O |       | Program        | Self-Read       | Self-Write | Data RAM (B) |               | Data EE (B)     | Maximum Speed | Internal Oscillator |                |                  | Charge Time Measurement Unit | 8-bit ADC | 10-bit ADC | 12-bit ADC | Comparators | CCP | ECCP | 8-bit Timer | 16-bit Timer | AUSART        | EUSART | PC™ | SPI | Ethernet (MAC/PHY) | FS+USB   | ECAN |          |              |               |                       |                  | BOR/PBOR                      | PLVD  |   |                                    |                                   |
| 28-Pin (Cont.) | PIC18F27J13                       | R     | 28  | 23    | PIC18          | 128 KB<br>64 Kw | ✓          | ✓            | 3808          | –               | 2V-3.6V       | 48 MHz              | 8 MHz, 31 kHz  | 0                | 10                           | ✓         | –          | –          | 10          | 3   | 7    | 3           | 4            | 4             | –      | 2   | 2   | 2                  | –        | –    | –        | BOR          | ✓             | –                     | –                | \$2.48                        | SPDIP (SP), SSOP (SS), SOIC (SO), OFN (ML)                        | SPI w/DMA, XLP  |                                    |                                   |
|                | PIC18F27J53                       | R     | 28  | 22    | PIC18          | 128 KB<br>64 Kw | ✓          | ✓            | 3808          | –               | 2V-3.6V       | 48 MHz              | 8 MHz, 31 kHz  | 0                | 10                           | ✓         | –          | –          | 10          | 3   | 7    | 3           | 4            | 4             | –      | 2   | 2   | 2                  | –        | 1    | –        | BOR          | ✓             | –                     | –                | \$2.69                        | SPDIP (SP), SSOP (SS), SOIC (SO), OFN (ML)                        | USB 2.0 (Full Speed), SPI w/DMA, XLP                              |                                    |                                   |
|                | PIC18F2550                        | R     | 28  | 24    | PIC18          | 32 KB<br>16 Kw  | ✓          | ✓            | 2048          | 256             | 2V-5.5V       | 48 MHz              | 8 MHz, 31 kHz  | 0                | 10                           | –         | –          | 10         | –           | 2   | 2    | –           | 1            | 3             | –      | 1   | 1   | 1                  | –        | 1    | –        | PBOR         | SW            | –                     | –                | \$3.44                        | PDIP (P), SPDIP(SP), SOIC (SO)                                    | USB 2.0 (Full Speed)  |                                    |                                   |
|                | PIC18F2553                        | R     | 28  | 24    | PIC18          | 32 KB<br>16 Kw  | ✓          | ✓            | 2048          | 256             | 2V-5.5V       | 48 MHz              | 8 MHz, 31 kHz  | 0                | –                            | –         | –          | –          | 10          | 2   | 2    | –           | 1            | 3             | –      | 1   | 1   | 1                  | –        | 1    | –        | PBOR         | SW            | –                     | –                | \$4.12                        | SPDIP(SP), SOIC (SO)  | USB 2.0 (Full Speed)  |                                    |                                   |
| 40/44-Pin      | PIC16F59                          | R     | 40  | 32    | BL             | 3 KB<br>2 Kw    | –          | –            | 134           | –               | 2V-5.5V       | 20 MHz              | 0              | 0                | –                            | –         | –          | –          | 0           | –   | –    | 1           | –            | –             | –      | –   | –   | –                  | –        | –    | –        | –            | –             | –                     | –                | –                             | \$0.85  | PDIP (P), TOFP (PT)   | –                                  |                                   |
|                | PIC16LF1906                       | NR    | 40  | 36    | EMR            | 7 KB<br>4 Kw    | ✓          | ✓            | 256           | –               | 1.8V-3.6V     | 20 MHz              | 16 MHz         | 116              | 14                           | –         | –          | 14         | –           | –   | –    | –           | 1            | 1             | –      | 1   | –   | –                  | –        | –    | –        | –            | –             | –                     | –                | –                             | –   | \$1.19  | PDIP (P), TOFP (PT), 5x5 UQFN (MV) | Integrated LCD Driver, XLP, Temp* |
|                | PIC16LF1907                       | NR    | 40  | 36    | EMR            | 14 KB<br>8 Kw   | ✓          | ✓            | 512           | –               | 1.8V-3.6V     | 20 MHz              | 16 MHz         | 116              | 14                           | –         | –          | 14         | –           | –   | –    | –           | 1            | 1             | –      | 1   | –   | –                  | –        | –    | –        | –            | –             | –                     | –                | –                             | –   | \$1.25  | PDIP (P), TOFP (PT), 5x5 UQFN (MV) | Integrated LCD Driver, XLP, Temp* |
|                | PIC16F1517                        | NR    | 40  | 36    | EMR            | 14 KB<br>8 Kw   | ✓          | ✓            | 512           | –               | 1.8V-5.5V     | 20 MHz              | 16 MHz         | 0                | 28                           | –         | –          | 28         | –           | –   | 2    | –           | 2            | 1             | –      | 1   | 1   | 1                  | –        | –    | –        | PBOR         | SW            | –                     | ✓                | \$1.32                        | PDIP (P), TOFP (PT), 5x5 UQFN (MV)                                | XLP, Temp*  |                                    |                                   |
|                | PIC16F1519                        | NR    | 40  | 36    | EMR            | 28 KB<br>16 Kw  | ✓          | ✓            | 1024          | –               | 1.8V-5.5V     | 20 MHz              | 16 MHz         | 0                | 28                           | –         | –          | 28         | –           | –   | 2    | –           | 2            | 1             | –      | 1   | 1   | 1                  | –        | –    | –        | PBOR         | SW            | –                     | ✓                | \$1.37                        | PDIP (P), TOFP (PT), 5x5 UQFN (MV)                                | XLP, Temp*  |                                    |                                   |
|                | PIC16F724                         | R     | 40  | 36    | MR             | 7 KB<br>4 Kw    | ✓          | –            | 192           | –               | 1.8V-5.5V     | 20 MHz              | 16 MHz         | 0                | 16                           | –         | –          | 14         | –           | –   | 0    | 2           | –            | 2             | 1      | 1   | –   | 1                  | 1        | –    | –        | BOR          | SW            | –                     | ✓                | \$1.40                        | PDIP (P), TOFP (PT), 8x8 OFN (ML), 5x5 UQFN (MV)                  | XLP, Temp*  |                                    |                                   |
|                | PIC16F1934                        | R     | 40  | 36    | EMR            | 7 KB<br>4 Kw    | ✓          | ✓            | 256           | 256             | 1.8V-5.5V     | 32 MHz              | 32 MHz, 31 kHz | 96               | 16                           | –         | –          | 14         | –           | 2   | 2    | 3           | 4            | 1             | –      | 1   | 1   | 1                  | –        | –    | –        | PBOR         | SW            | ✓                     | ✓                | \$1.47                        | PDIP (P), TOFP (PT), 8x8 OFN (ML), 5x5 UQFN (MV)                  | XLP, Temp*  |                                    |                                   |
|                | PIC18F43K20                       | R     | 40  | 36    | PIC18          | 8 KB<br>4 Kw    | ✓          | ✓            | 512           | 256             | 1.8V-3.6V     | 64 MHz              | 16 MHz, 31 kHz | 0                | 14                           | –         | –          | 14         | –           | 2   | 1    | 1           | 1            | 3             | –      | 1   | 1   | 1                  | –        | –    | –        | BOR          | ✓             | –                     | –                | \$1.47                        | PDIP (P), TOFP (PT), 8x8 OFN (ML), 5x5 UQFN (MV)                  | XLP   |                                    |                                   |
|                | PIC16F727                         | R     | 40  | 36    | MR             | 14 KB<br>8 Kw   | ✓          | –            | 368           | –               | 1.8V-5.5V     | 20 MHz              | 16 MHz         | 0                | 16                           | –         | –          | 14         | –           | –   | 0    | 2           | –            | 2             | 1      | 1   | –   | 1                  | 1        | –    | –        | BOR          | SW            | –                     | ✓                | \$1.54                        | PDIP (P), TOFP (PT), 8x8 OFN (ML), 5x5 UQFN (MV)                  | XLP, Temp*  |                                    |                                   |
|                | PIC16F1937                        | R     | 40  | 36    | EMR            | 14 KB<br>8 Kw   | ✓          | ✓            | 512           | 256             | 1.8V-5.5V     | 32 MHz              | 32 MHz, 31 kHz | 96               | 16                           | –         | –          | 14         | –           | 2   | 2    | 3           | 4            | 1             | –      | 1   | 1   | 1                  | –        | –    | –        | PBOR         | SW            | ✓                     | ✓                | \$1.54                        | PDIP (P), TOFP (PT), 8x8 OFN (ML), 5x5 UQFN (MV)                  | XLP, Temp*  |                                    |                                   |
|                | PIC18F44K20                       | R     | 40  | 36    | PIC18          | 16 KB<br>8 Kw   | ✓          | ✓            | 768           | 256             | 1.8V-3.6V     | 64 MHz              | 16 MHz, 31 kHz | 0                | 14                           | –         | –          | 14         | –           | 2   | 1    | 1           | 1            | 3             | –      | 1   | 1   | 1                  | –        | –    | –        | PBOR         | ✓             | –                     | –                | \$1.54                        | PDIP (P), TOFP (PT), 8x8 OFN (ML), 5x5 UQFN (MV)                  | XLP   |                                    |                                   |
|                | PIC16F1939                        | R     | 40  | 36    | EMR            | 28 KB<br>16 Kw  | ✓          | ✓            | 1024          | 256             | 1.8V-5.5V     | 32 MHz              | 32 MHz, 31 kHz | 96               | 16                           | –         | –          | 14         | –           | 2   | 2    | 3           | 4            | 1             | –      | 1   | 1   | 1                  | –        | –    | –        | PBOR         | SW            | ✓                     | ✓                | \$1.61                        | PDIP (P), TOFP (PT), 8x8 OFN (ML), 5x5 UQFN (MV)                  | XLP, Temp*  |                                    |                                   |
|                | PIC18F45K20                       | R     | 40  | 36    | PIC18          | 32 KB<br>16 Kw  | ✓          | ✓            | 1536          | 256             | 1.8V-3.6V     | 64 MHz              | 16 MHz, 31 kHz | 0                | 14                           | –         | –          | 14         | –           | 2   | 1    | 1           | 1            | 3             | –      | 1   | 1   | 1                  | –        | –    | –        | PBOR         | ✓             | –                     | –                | \$1.61                        | PDIP (P), TOFP (PT), 8x8 OFN (ML), 5x5 UQFN (MV)                  | XLP   |                                    |                                   |
|                | PIC16F884                         | R     | 40  | 36    | MR             | 7 KB<br>4 Kw    | ✓          | ✓            | 256           | 256             | 2V-5.5V       | 20 MHz              | 8 MHz, 31 kHz  | 0                | 14                           | –         | –          | 14         | –           | 2   | 1    | 1           | 2            | 1             | –      | 1   | 1   | 1                  | –        | –    | –        | BOR          | SW            | ✓                     | ✓                | \$1.63                        | PDIP (P), TOFP (PT), 8x8 OFN (ML)                                 | –   |                                    |                                   |
|                | PIC18F44J10                       | R     | 40  | 32    | PIC18          | 16 KB<br>8 Kw   | ✓          | ✓            | 1024          | –               | 2V-3.6V       | 40 MHz              | 31 kHz         | 0                | 13                           | –         | –          | 13         | –           | 2   | 1    | 1           | 1            | 2             | –      | 1   | 2   | 2                  | –        | –    | –        | BOR          | –             | –                     | –                | \$1.67                        | PDIP (P), TOFP (PT), OFN (ML)                                     | –   |                                    |                                   |
|                | PIC18F43K22                       | R     | 40  | 36    | PIC18          | 8 KB<br>4 Kw    | ✓          | ✓            | 512           | 256             | 1.8V-5.5V     | 64 MHz              | 16 MHz, 31 kHz | 0                | 28                           | ✓         | –          | 28         | –           | 2   | 1    | 1           | 1            | 3             | –      | 2   | 2   | 2                  | –        | –    | –        | PBOR         | ✓             | ✓                     | ✓                | \$1.68                        | PDIP (P), TOFP (PT), 8x8 OFN (ML), 5x5 UQFN (MV)                  | XLP, Temp*  |                                    |                                   |
|                | PIC18F44K22                       | R     | 40  | 36    | PIC18          | 16 KB<br>8 Kw   | ✓          | ✓            | 768           | 256             | 1.8V-5.5V     | 64 MHz              | 16 MHz, 31 kHz | 0                | 28                           | ✓         | –          | 28         | –           | 2   | 1    | 1           | 1            | 3             | –      | 2   | 2   | 2                  | –        | –    | –        | PBOR         | ✓             | ✓                     | ✓                | \$1.75                        | PDIP (P), TOFP (PT), 8x8 OFN (ML), 5x5 UQFN (MV)                  | XLP, Temp*  |                                    |                                   |
|                | PIC16F887                         | R     | 40  | 36    | MR             | 14 KB<br>8 Kw   | ✓          | ✓            | 368           | 256             | 2V-5.5V       | 20 MHz              | 8 MHz, 31 kHz  | 0                | 14                           | –         | –          | 14         | –           | 2   | 1    | 1           | 2            | 1             | –      | 1   | 1   | 1                  | –        | –    | –        | BOR          | SW            | ✓                     | ✓                | \$1.78                        | PDIP (P), TOFP (PT), 8x8 OFN (ML)                                 | –   |                                    |                                   |
|                | PIC18F45J10                       | R     | 40  | 32    | PIC18          | 32 KB<br>16 Kw  | ✓          | ✓            | 1024          | –               | 2V-3.6V       | 40 MHz              | 31 kHz         | 0                | 13                           | –         | –          | 13         | –           | 2   | 1    | 1           | 1            | 2             | –      | 1   | 2   | 2                  | –        | –    | –        | BOR          | –             | –                     | –                | \$1.81                        | PDIP (P), TOFP (PT), OFN (ML)                                     | –   |                                    |                                   |
|                | PIC18F46K20                       | R     | 40  | 36    | PIC18          | 64 KB<br>32 Kw  | ✓          | ✓            | 3936          | 1024            | 1.8V-3.6V     | 64 MHz              | 16 MHz, 31 kHz | 0                | 14                           | –         | –          | 14         | –           | 2   | 1    | 1           | 1            | 3             | –      | 1   | 1   | 1                  | –        | –    | –        | PBOR         | ✓             | –                     | –                | \$1.82                        | PDIP (P), TOFP (PT), 8x8 OFN (ML)                                 | XLP   |                                    |                                   |
|                | PIC18F45K22                       | R     | 40  | 36    | PIC18          | 32 KB<br>16 Kw  | ✓          | ✓            | 1536          | 256             | 1.8V-5.5V     | 64 MHz              | 16 MHz, 31 kHz | 0                | 28                           | ✓         | –          | 28         | –           | 2   | 2    | 2           | 2            | 3             | 4      | –   | 2   | 2                  | 2        | –    | –        | –            | PBOR          | ✓                     | ✓                | ✓                             | \$1.89  | PDIP (P), TOFP (PT), 8x8 OFN (ML), 5x5 UQFN (MV)                  | XLP, Temp*                         |                                   |
|                | PIC18F44J11                       | R     | 40  | 34    | PIC18          | 16 KB<br>8 Kw   | ✓          | ✓            | 3800          | –               | 2V-3.6V       | 48 MHz              | 8 MHz, 31 kHz  | 0                | 13                           | ✓         | –          | 13         | –           | 2   | –    | 2           | 2            | 3             | –      | 2   | 2   | 2                  | –        | –    | –        | BOR          | SW            | –                     | –                | \$1.95                        | TOFP (PT), OFN (ML)   | Peripheral Pin Select, Deep Sleep Mode, XLP                       |                                    |                                   |
|                | PIC18F45J11                       | R     | 40  | 34    | PIC18          | 32 KB<br>16 Kw  | ✓          | ✓            | 3800          | –               | 2V-3.6V       | 48 MHz              | 8 MHz, 31 kHz  | 0                | 13                           | ✓         | –          | 13         | –           | 2   | –    | 2           | 2            | 3             | –      | 2   | 2   | 2                  | –        | –    | –        | BOR          | SW            | –                     | –                | \$2.09                        | TOFP (PT), OFN (ML)   | Peripheral Pin Select, Deep Sleep Mode, XLP                       |                                    |                                   |
|                | PIC18F44J50                       | R     | 40  | 34    | PIC18          | 16 KB<br>8 Kw   | ✓          | ✓            | 3800          | –               | 2V-3.6V       | 48 MHz              | 8 MHz, 31 kHz  | 0                | 13                           | ✓         | –          | 13         | –           | 2   | –    | 2           | 2            | 3             | –      | 2   | 2   | 2                  | –        | 1    | –        | BOR          | SW            | –                     | –                | \$2.16                        | TOFP (PT), OFN (ML)   | USB 2.0 (Full Speed), Peripheral Pin Select, Deep Sleep Mode, XLP |                                    |                                   |
| PIC18F45K80    | NR                                | 40/44 | 35  | PIC18 | 32 KB<br>16 Kw | ✓               | ✓          | 3648         | 1024          | 1.8V-5.5V       | 64 MHz        | 8 MHz, 31 kHz       | 0              | 15               | ✓                            | –         | –          | 15         | 2           | 4   | 1    | 2           | 3            | –             | 2      | 1   | 1   | –                  | –        | 1    | PBOR     | ✓            | ✓             | ✓                     | \$2.17           | PDIP (P), TOFP (PT), OFN (ML) | CAN 2.0, CTMU, Deep Sleep Mode, XLP                               |   |                                    |                                   |
| PIC18F46K22    | R                                 | 40    | 36  | PIC18 | 64 KB<br>32 Kw | ✓               | ✓          | 3896         | 1024          | 1.8V-5.5V       | 64 MHz        | 16 MHz, 31 kHz      | 0              | 28               | ✓                            | –         | 28         | –          | 2           | 2   | 2    | 2           | 3            | 4             | –      | 2   | 2   | 2                  | –        | –    | –        | PBOR         | ✓             | ✓                     | ✓                | \$2.17                        | PDIP (P), TOFP (PT), 8x8 OFN (ML), 5x5 UQFN (MV)                  | XLP, Temp*  |                                    |                                   |
| PIC18F45J50    | R                                 | 40    | 34  | PIC18 | 32 KB<br>16 Kw | ✓               | ✓          | 3800         | –             | 2V-3.6V         | 48 MHz        | 8 MHz, 31 kHz       | 0              | 13               | ✓                            | –         | 13         | –          | 2           | –   | 2    | 2           | 3            | –             | 2      | 2   | 2   | –                  | 1        | –    | BOR      | SW           | –             | –                     | \$2.30           | TOFP (PT), OFN (ML)           | USB 2.0 (Full Speed), Peripheral Pin Select, Deep Sleep Mode, XLP |   |                                    |                                   |

Products sorted by pin count followed by pricing.

† - Pricing subject to change; please contact your Microchip representative for most current pricing.

◊ - Software PLVD implemented via ADC.

\*Reference Application Note AN1333 for temperature indicator implementation.

# 8-bit PIC® Microcontrollers

| Product       | Released (R)<br>Not Released (NR) | Pins  |     | Core  | Memory          |           |            |              | Voltage Range | Operating Speed |               | LCD Segments            | mTouch™ Channels | Analog Sensing & Measurement |                              |           |            | Digital    |             |     |      | Communication |              |        |        |      | Monitors |                    |        | 5 ku Pricing† | Packages (Designator) | Special Features |      |          |                               |                                       |   |
|---------------|-----------------------------------|-------|-----|-------|-----------------|-----------|------------|--------------|---------------|-----------------|---------------|-------------------------|------------------|------------------------------|------------------------------|-----------|------------|------------|-------------|-----|------|---------------|--------------|--------|--------|------|----------|--------------------|--------|---------------|-----------------------|------------------|------|----------|-------------------------------|---------------------------------------|---|
|               |                                   | Total | I/O |       | Program         | Self-Read | Self-Write | Data RAM (B) |               | Data EE (B)     | Maximum Speed |                         |                  | Internal Oscillator          | Charge Time Measurement Unit | 8-bit ADC | 10-bit ADC | 12-bit ADC | Comparators | CCP | ECCP | 8-bit Timer   | 16-bit Timer | AUSART | EUSART | I²C™ | SPI      | Ethernet (MAC/PHY) | FS-USB |               |                       |                  | ECAN | BOR/PBOR | PLVD                          | SR-Latch                              | Timer 1 Gate  |
| PIC18F46J11   | R                                 | 40    | 34  | PIC18 | 64 KB<br>32 Kw  | ✓         | ✓          | 3800         | –             | 2V-3.6V         | 48 MHz        | 8 MHz, 31 kHz           | 0                | 13                           | ✓                            | –         | 13         | –          | 2           | –   | 2    | 2             | 3            | –      | 2      | 2    | 2        | –                  | –      | –             | BOR                   | SWO              | –    | –        | \$2.37                        | PDIP (P), TOFP (PT), QFN (ML)         | Peripheral Pin Select, Deep Sleep Mode, XLP                       |
| PIC18F4450    | R                                 | 40    | 34  | PIC18 | 16 KB<br>8 Kw   | ✓         | ✓          | 768          | –             | 2V-5.5V         | 48 MHz        | 31 kHz                  | 0                | 13                           | –                            | –         | 13         | –          | 0           | 1   | –    | 1             | 2            | –      | 1      | –    | –        | –                  | –      | 1             | –                     | –                | –    | \$2.39   | PDIP (P), TOFP (PT), QFN (ML) | USB 2.0 (Full Speed)                  |   |
| PIC18F46K80   | NR                                | 40/44 | 35  | PIC18 | 64 KB<br>32 Kw  | ✓         | ✓          | 3648         | 1024          | 1.8V-5.5V       | 64 MHz        | 8 MHz, 31 kHz           | 0                | 15                           | ✓                            | –         | –          | 15         | 2           | 4   | 1    | 2             | 3            | –      | 2      | 1    | 1        | –                  | –      | 1             | –                     | –                | –    | \$2.45   | PDIP (P), TOFP (PT), QFN (ML) | CAN 2.0, CTMU, Deep Sleep Mode, XLP   |   |
| PIC18F46J13   | R                                 | 44    | 34  | PIC18 | 64 KB<br>32 Kw  | ✓         | ✓          | 3808         | –             | 2V-3.6V         | 48 MHz        | 8 MHz, 31 kHz           | 0                | 13                           | ✓                            | –         | –          | 13         | 3           | 7   | 3    | 4             | 4            | –      | 2      | 2    | 2        | –                  | –      | –             | –                     | –                | –    | \$2.52   | TOFP (PT), QFN (ML)           | SPI w/DMA, XLP                        |   |
| PIC18F46J50   | R                                 | 40    | 34  | PIC18 | 64 KB<br>32 Kw  | ✓         | ✓          | 3800         | –             | 2V-3.6V         | 48 MHz        | 8 MHz, 31 kHz           | 0                | 13                           | ✓                            | –         | –          | 13         | –           | 2   | –    | 2             | 2            | 3      | –      | 2    | 2        | 2                  | –      | 1             | –                     | –                | –    | –        | \$2.58                        | PDIP (P), TOFP (PT), QFN (ML)         | USB 2.0 (Full Speed), Peripheral Pin Select, Deep Sleep Mode, XLP |
| PIC18F46J53   | R                                 | 44    | 33  | PIC18 | 64 KB<br>32 Kw  | ✓         | ✓          | 3808         | –             | 2V-3.6V         | 48 MHz        | 8 MHz, 31 kHz           | 0                | 13                           | ✓                            | –         | –          | 13         | 3           | 7   | 3    | 4             | 4            | –      | 2      | 2    | 2        | –                  | 1      | –             | –                     | –                | –    | \$2.73   | TOFP (PT), QFN (ML)           | Integrated LCD Driver, SPI w/DMA, XLP |   |
| PIC18F47J13   | R                                 | 44    | 34  | PIC18 | 128 KB<br>64 Kw | ✓         | ✓          | 3808         | –             | 2V-3.6V         | 48 MHz        | 8 MHz, 31 kHz           | 0                | 13                           | ✓                            | –         | –          | 13         | 3           | 7   | 3    | 4             | 4            | –      | 2      | 2    | 2        | –                  | –      | –             | –                     | –                | –    | \$2.76   | TOFP (PT), QFN (ML)           | SPI w/DMA, XLP                        |   |
| PIC18F47J53   | R                                 | 44    | 33  | PIC18 | 128 KB<br>64 Kw | ✓         | ✓          | 3808         | –             | 2V-3.6V         | 48 MHz        | 8 MHz, 31 kHz           | 0                | 13                           | ✓                            | –         | –          | 13         | 3           | 7   | 3    | 4             | 4            | –      | 2      | 2    | 2        | –                  | 1      | –             | –                     | –                | –    | \$2.97   | TOFP (PT), QFN (ML)           | Integrated LCD Driver, SPI w/DMA, XLP |   |
| PIC18F4550    | R                                 | 40    | 35  | PIC18 | 32 KB<br>16 Kw  | ✓         | ✓          | 2048         | 256           | 2V-5.5V         | 48 MHz        | 8 MHz, 31 kHz           | 0                | 13                           | –                            | –         | 13         | –          | 2           | 1   | 1    | 1             | 3            | –      | 1      | 1    | 1        | –                  | 1      | –             | –                     | –                | –    | \$3.65   | PDIP (P), TOFP (PT), QFN (ML) | USB 2.0 (Full Speed)                  |   |
| PIC18F4523    | R                                 | 40    | 36  | PIC18 | 32 KB<br>16 Kw  | ✓         | ✓          | 1536         | 256           | 2V-5.5V         | 40 MHz        | 8 MHz, 31 kHz           | 0                | 13                           | –                            | –         | –          | 13         | 2           | 1   | 1    | 1             | 3            | –      | 1      | 1    | 1        | –                  | –      | –             | –                     | –                | –    | \$3.67   | PDIP (P), TOFP (PT), QFN (ML) | –                                     |   |
| PIC18F4553    | R                                 | 40    | 35  | PIC18 | 32 KB<br>16 Kw  | ✓         | ✓          | 2048         | 256           | 2V-5.5V         | 48 MHz        | 8 MHz, 31 kHz           | 0                | 13                           | –                            | –         | –          | 13         | 2           | 1   | 1    | 1             | 3            | –      | 1      | 1    | 1        | –                  | 1      | –             | –                     | –                | –    | \$4.33   | PDIP (P), TOFP (PT), QFN (ML) | USB 2.0 (Full Speed)                  |   |
| PIC16F1526    | NR                                | 64    | 54  | EMR   | 14 KB<br>8 Kw   | ✓         | ✓          | 768          | –             | 1.8V-5.5V       | 20 MHz        | 16 MHz                  | 0                | 30                           | –                            | –         | 30         | –          | –           | 10  | –    | 6             | 3            | –      | 2      | 2    | 2        | –                  | –      | –             | –                     | –                | –    | \$1.47   | TOFP (PT), QFN (MR)           | XLP, Temp*                            |   |
| PIC16F1527    | NR                                | 64    | 54  | EMR   | 28 KB<br>16 Kw  | ✓         | ✓          | 1536         | –             | 1.8V-5.5V       | 20 MHz        | 16 MHz                  | 0                | 30                           | –                            | –         | 30         | –          | –           | 10  | –    | 6             | 3            | –      | 2      | 2    | 2        | –                  | –      | –             | –                     | –                | –    | \$1.54   | TOFP (PT), QFN (MR)           | XLP, Temp*                            |   |
| PIC16F1946    | R                                 | 64    | 53  | EMR   | 14 KB<br>8 Kw   | ✓         | ✓          | 512          | 256           | 1.8V-5.5V       | 32 MHz        | 32 MHz, 31 kHz          | 184              | 17                           | –                            | –         | 17         | –          | 3           | 2   | 3    | 4             | 1            | –      | 2      | 2    | 2        | –                  | –      | –             | –                     | –                | –    | \$1.75   | TOFP (PT), QFN (MR)           | XLP, Temp*                            |   |
| PIC16F1947    | R                                 | 64    | 53  | EMR   | 28 KB<br>16 Kw  | ✓         | ✓          | 1024         | 256           | 1.8V-5.5V       | 32 MHz        | 32 MHz, 31 kHz          | 184              | 17                           | –                            | –         | 17         | –          | 3           | 2   | 3    | 4             | 1            | –      | 2      | 2    | 2        | –                  | –      | –             | –                     | –                | –    | \$1.82   | TOFP (PT), QFN (MR)           | XLP, Temp*                            |   |
| PIC18F63J11   | R                                 | 64    | 54  | PIC18 | 8 KB<br>4 Kw    | ✓         | ✓          | 1024         | –             | 2V-3.6V         | 40 MHz        | 8 MHz, 31 kHz           | 0                | 12                           | –                            | –         | 12         | –          | 2           | 2   | –    | 1             | 3            | 1      | 1      | 1    | 1        | –                  | –      | –             | –                     | –                | –    | \$2.20   | TOFP (PT)                     | –                                     |   |
| PIC18F65J10   | R                                 | 64    | 50  | PIC18 | 32 KB<br>16 Kw  | ✓         | ✓          | 2048         | –             | 2V-3.6V         | 40 MHz        | 31 kHz                  | 0                | 11                           | –                            | –         | 11         | –          | 2           | 2   | 3    | 2             | 3            | –      | 2      | 2    | 2        | –                  | –      | –             | –                     | –                | –    | \$2.25   | TOFP (PT)                     | –                                     |   |
| PIC18F64J11   | R                                 | 64    | 54  | PIC18 | 16 KB<br>8 Kw   | ✓         | ✓          | 1024         | –             | 2V-3.6V         | 40 MHz        | 8 MHz, 31 kHz           | 0                | 12                           | –                            | –         | 12         | –          | 2           | 2   | –    | 1             | 3            | 1      | 1      | 1    | 1        | –                  | –      | –             | –                     | –                | –    | \$2.27   | TOFP (PT)                     | –                                     |   |
| PIC18F63J90   | R                                 | 64    | 51  | PIC18 | 8 KB<br>4 Kw    | ✓         | ✓          | 1024         | –             | 2V-3.6V         | 40 MHz        | 8 MHz, 31 kHz           | 132              | 12                           | –                            | –         | 12         | –          | 2           | 2   | –    | 1             | 3            | 1      | 1      | 1    | 1        | –                  | –      | –             | –                     | –                | –    | \$2.35   | TOFP (PT)                     | Integrated LCD Driver                 |   |
| PIC18F65J11   | R                                 | 64    | 54  | PIC18 | 32 KB<br>16 Kw  | ✓         | ✓          | 2048         | –             | 2V-3.6V         | 40 MHz        | 8 MHz, 31 kHz           | 0                | 12                           | –                            | –         | 12         | –          | 2           | 2   | –    | 1             | 3            | 1      | 1      | 1    | 1        | –                  | –      | –             | –                     | –                | –    | \$2.37   | TOFP (PT)                     | –                                     |   |
| PIC18F65K22   | R                                 | 64    | 53  | PIC18 | 32 KB<br>16 Kw  | ✓         | ✓          | 2048         | 1024          | 1.8V-5.5V       | 64 MHz        | 31 kHz, 500 kHz, 16 MHz | 0                | 16                           | ✓                            | –         | –          | 16         | 3           | 5   | 3    | 4             | 4            | –      | 2      | 2    | 2        | –                  | –      | –             | –                     | –                | –    | \$2.39   | QFN (MR), TOFP (PT)           | XLP                                   |   |
| PIC18F64J90   | R                                 | 64    | 51  | PIC18 | 16 KB<br>8 Kw   | ✓         | ✓          | 1024         | –             | 2V-3.6V         | 40 MHz        | 8 MHz, 31 kHz           | 132              | 12                           | –                            | –         | 12         | –          | 2           | 2   | –    | 1             | 3            | 1      | 1      | 1    | 1        | –                  | –      | –             | –                     | –                | –    | \$2.41   | TOFP (PT)                     | Integrated LCD Driver                 |   |
| PIC18F66J10   | R                                 | 64    | 50  | PIC18 | 64 KB<br>32 Kw  | ✓         | ✓          | 2048         | –             | 2V-3.6V         | 40 MHz        | 31 kHz                  | 0                | 11                           | –                            | –         | 11         | –          | 2           | 2   | 3    | 2             | 3            | –      | 2      | 2    | 2        | –                  | –      | –             | –                     | –                | –    | \$2.49   | TOFP (PT)                     | –                                     |   |
| PIC18F65J90   | R                                 | 64    | 50  | PIC18 | 32 KB<br>16 Kw  | ✓         | ✓          | 2048         | –             | 2V-3.6V         | 40 MHz        | 8 MHz, 31 kHz           | 132              | 12                           | –                            | –         | 12         | –          | 2           | 2   | –    | 1             | 3            | 1      | 1      | 1    | 1        | –                  | –      | –             | –                     | –                | –    | \$2.52   | TOFP (PT)                     | Integrated LCD Driver                 |   |
| PIC18F65K90   | R                                 | 64    | 53  | PIC18 | 32 KB<br>16 Kw  | ✓         | ✓          | 2048         | 1024          | 1.8V-5.5V       | 64 MHz        | 31 kHz, 500 kHz, 16 MHz | 132              | 16                           | ✓                            | –         | –          | 16         | 3           | 5   | 3    | 4             | 4            | –      | 2      | 2    | 2        | –                  | –      | –             | –                     | –                | –    | \$2.53   | QFN (MR), TOFP (PT)           | Integrated LCD Driver, XLP            |   |
| PIC18F65J50   | R                                 | 64    | 49  | PIC18 | 32 KB<br>16 Kw  | ✓         | ✓          | 3904         | –             | 2V-3.6V         | 48 MHz        | 8 MHz, 31 kHz           | 0                | 8                            | –                            | –         | 8          | –          | 2           | 2   | 3    | 2             | 3            | –      | 2      | 2    | 2        | –                  | 1      | –             | –                     | –                | –    | \$2.63   | TOFP (PT)                     | USB 2.0 (Full Speed)                  |   |
| PIC18F66J11   | R                                 | 64    | 50  | PIC18 | 64 KB<br>32 Kw  | ✓         | ✓          | 3904         | –             | 2V-3.6V         | 48 MHz        | 8 MHz, 31 kHz           | 0                | 11                           | –                            | –         | 11         | –          | 2           | 2   | 3    | 2             | 3            | –      | 2      | 2    | 2        | –                  | –      | –             | –                     | –                | –    | \$2.63   | TOFP (PT)                     | –                                     |   |
| PIC18F66J90/3 | R                                 | 64    | 51  | PIC18 | 64 KB<br>32 Kw  | ✓         | ✓          | 3900         | –             | 2V-3.6V         | 48 MHz        | 8 MHz, 31 kHz           | 132              | 12                           | ✓                            | –         | –          | 12         | 2           | 2   | –    | 1             | 3            | 1      | 1      | 1    | 1        | –                  | –      | –             | –                     | –                | –    | \$2.70   | TOFP (PT)                     | Integrated LCD Driver, RTCC           |   |
| PIC18F65K80   | NR                                | 64    | 54  | PIC18 | 32 KB<br>16 Kw  | ✓         | ✓          | 3648         | 1024          | 1.8V-5.5V       | 64 MHz        | 8 MHz, 31 kHz           | 0                | 15                           | ✓                            | –         | –          | 15         | 2           | 4   | 1    | 2             | 3            | –      | 2      | 1    | 1        | –                  | –      | 1             | –                     | –                | –    | \$2.70   | TOFP (PT), QFN (MR)           | CAN 2.0, CTMU, Deep Sleep Mode, XLP   |   |
| PIC18F66K22   | R                                 | 64    | 53  | PIC18 | 64 KB<br>32 Kw  | ✓         | ✓          | 4096         | 1024          | 1.8V-5.5V       | 64 MHz        | 31 kHz, 500 kHz, 16 MHz | 0                | 16                           | ✓                            | –         | –          | 16         | 3           | 7   | 3    | 6             | 5            | –      | 2      | 2    | 2        | –                  | –      | –             | –                     | –                | –    | \$2.70   | QFN (MR), TOFP (PT)           | XLP                                   |   |
| PIC18F67J10   | R                                 | 64    | 50  | PIC18 | 128 KB<br>64 Kw | ✓         | ✓          | 3936         | –             | 2V-3.6V         | 40 MHz        | 31 kHz                  | 0                | 11                           | –                            | –         | 11         | –          | 2           | 2   | 3    | 2             | 3            | –      | 2      | 2    | 2        | –                  | –      | –             | –                     | –                | –    | \$2.77   | TOFP (PT)                     | –                                     |   |

Products sorted by pin count followed by pricing.  
 † - Pricing subject to change; please contact your Microchip representative for most current pricing.  
 ◊ - Software PLVD implemented via ADC.  
 \*Reference Application Note AN1333 for temperature indicator implementation.

## 8-bit PIC® Microcontrollers

| Product                  | Released (R)<br>Not Released (NR) | Pins  |     | Core  | Memory          |           |            |              | Voltage Range | Operating Speed |               |                            | LCD Segments | mTouch™ Channels | Analog Sensing & Measurement |            |            |             |     | Digital |             |              |        | Communication |                   |     |                    |        | ECAN | Monitors |      | 5 Ku Pricing <sup>1</sup> | Packages (Designator) | Special Features |           |                             |                                     |
|--------------------------|-----------------------------------|-------|-----|-------|-----------------|-----------|------------|--------------|---------------|-----------------|---------------|----------------------------|--------------|------------------|------------------------------|------------|------------|-------------|-----|---------|-------------|--------------|--------|---------------|-------------------|-----|--------------------|--------|------|----------|------|---------------------------|-----------------------|------------------|-----------|-----------------------------|-------------------------------------|
|                          |                                   | Total | I/O |       | Program         | Self-Read | Self-Write | Data RAM (B) |               | Data EE (B)     | Maximum Speed | Internal Oscillator        |              |                  | 8-bit ADC                    | 10-bit ADC | 12-bit ADC | Comparators | CCP | ECCP    | 8-bit Timer | 16-bit Timer | AUSART | EUSART        | I <sup>2</sup> C™ | SPI | Ethernet (MAC/PHY) | FS-USB |      | BOR/BOR  | PLVD |                           |                       |                  | SR-Latch  | Timer 1 Gate                |                                     |
| PIC18F66K90 <sup>T</sup> | R                                 | 64    | 53  | PIC18 | 64 KB<br>32 Kw  | ✓         | ✓          | 4096         | 1024          | 1.8V-5.5V       | 64 MHz        | 31 kHz, 500 kHz,<br>16 MHz | 132          | 16               | ✓                            | -          | -          | 16          | 3   | 7       | 3           | 6            | 5      | -             | 2                 | 2   | 2                  | -      | -    | -        | BOR  | ✓                         | -                     | -                | \$2.84    | QFN (MR), TOFP (PT)         | Integrated LCD Driver, XLP          |
| PIC18F66J50              | R                                 | 64    | 49  | PIC18 | 64 KB<br>32 Kw  | ✓         | ✓          | 3904         | -             | 2V-3.6V         | 48 MHz        | 8 MHz, 31 kHz              | 0            | 8                | -                            | -          | 8          | -           | 2   | 2       | 3           | 2            | 3      | -             | 2                 | 2   | 2                  | -      | 1    | -        | BOR  | ✓                         | -                     | -                | \$2.90    | TOFP (PT)                   | USB 2.0 (Full Speed)                |
| PIC18F67J11              | R                                 | 64    | 50  | PIC18 | 128 KB<br>64 Kw | ✓         | ✓          | 3904         | -             | 2V-3.6V         | 48 MHz        | 8 MHz, 31 kHz              | 0            | 11               | -                            | -          | 11         | -           | 2   | 2       | 3           | 2            | 3      | -             | 2                 | 2   | 2                  | -      | -    | -        | BOR  | ✓                         | -                     | -                | \$2.93    | TOFP (PT)                   | -                                   |
| PIC18F67K22 <sup>T</sup> | R                                 | 64    | 53  | PIC18 | 128 KB<br>64 Kw | ✓         | ✓          | 4096         | 1024          | 1.8V-5.5V       | 64 MHz        | 31 kHz, 500 kHz,<br>16 MHz | 0            | 16               | ✓                            | -          | -          | 16          | 3   | 7       | 3           | 6            | 5      | -             | 2                 | 2   | 2                  | -      | -    | -        | BOR  | ✓                         | -                     | -                | \$2.94    | QFN (MR), TOFP (PT)         | XLP                                 |
| PIC18F66K80 <sup>T</sup> | NR                                | 64    | 54  | PIC18 | 64 KB<br>32 Kw  | ✓         | ✓          | 3648         | 1024          | 1.8V-5.5V       | 64 MHz        | 8 MHz, 31 kHz              | 0            | 11               | ✓                            | -          | -          | 15          | 2   | 4       | 1           | 2            | 3      | -             | 2                 | 1   | 1                  | -      | -    | 1        | PBOR | ✓                         | -                     | -                | \$2.98    | TOFP (PT), QFN (MR)         | CAN 2.0, CTMU, Deep Sleep Mode, XLP |
| PIC18F67J90/3            | R                                 | 64    | 51  | PIC18 | 128 KB<br>64 Kw | ✓         | ✓          | 3900         | -             | 2V-3.6V         | 48 MHz        | 8 MHz, 31 kHz              | 132          | 12               | ✓                            | -          | 12         | 2           | 2   | -       | 1           | 3            | 1      | 1             | 1                 | 1   | -                  | -      | -    | BOR      | ✓    | -                         | -                     | \$3.00           | TOFP (PT) | Integrated LCD Driver, RTCC |                                     |
| PIC18F67K90 <sup>T</sup> | R                                 | 64    | 53  | PIC18 | 128 KB<br>64 Kw | ✓         | ✓          | 4096         | 1024          | 1.8V-5.5V       | 64 MHz        | 31 kHz, 500 kHz,<br>16 MHz | 132          | 16               | ✓                            | -          | -          | 16          | 3   | 7       | 3           | 6            | 5      | -             | 2                 | 2   | 2                  | -      | -    | -        | BOR  | ✓                         | -                     | -                | \$3.08    | QFN (MR), TOFP (PT)         | Integrated LCD Driver, XLP          |
| PIC18F67J50              | R                                 | 64    | 49  | PIC18 | 128 KB<br>64 Kw | ✓         | ✓          | 3904         | -             | 2V-3.6V         | 48 MHz        | 8 MHz, 31 kHz              | 0            | 8                | -                            | -          | 8          | -           | 2   | 2       | 3           | 2            | 3      | -             | 2                 | 2   | 2                  | -      | 1    | -        | BOR  | ✓                         | -                     | -                | \$3.19    | TOFP (PT)                   | USB 2.0 (Full Speed)                |
| PIC18F6493               | R                                 | 64    | 50  | PIC18 | 16 KB<br>8 Kw   | ✓         | -          | 768          | -             | 2V-5.5V         | 32 MHz        | 8 MHz, 31 kHz              | 132          | 12               | -                            | -          | -          | 12          | 2   | 2       | -           | 1            | 3      | 1             | 1                 | 1   | 1                  | -      | -    | -        | PBOR | SW0                       | -                     | -                | \$3.29    | TOFP (PT)                   | Integrated LCD Driver               |
| PIC18F66J60              | R                                 | 64    | 39  | PIC18 | 64 KB<br>32 Kw  | ✓         | ✓          | 3808         | -             | 2V-3.6V         | 42 MHz        | 31 kHz                     | 0            | 11               | -                            | -          | 11         | -           | 2   | 2       | 3           | 2            | 3      | -             | 1                 | 1   | 1                  | -      | -    | -        | BOR  | ✓                         | -                     | -                | \$3.36    | TOFP (PT)                   | Integrated MAC, 10 Base T PHY       |
| PIC18F67J60              | R                                 | 64    | 39  | PIC18 | 128 KB<br>64 Kw | ✓         | ✓          | 3808         | -             | 2V-3.6V         | 42 MHz        | 31 kHz                     | 0            | 11               | -                            | -          | 11         | -           | 2   | 2       | 3           | 2            | 3      | -             | 1                 | 1   | 1                  | 1      | -    | -        | BOR  | ✓                         | -                     | -                | \$3.65    | TOFP (PT)                   | Integrated MAC, 10 Base T PHY       |
| PIC18F6723               | R                                 | 64    | 54  | PIC18 | 128 KB<br>64 Kw | ✓         | ✓          | 3936         | 1024          | 2V-5.5V         | 40 MHz        | 8 MHz, 31 kHz              | 0            | 12               | -                            | -          | -          | 12          | 2   | 2       | 3           | 2            | 3      | -             | 2                 | 2   | 2                  | -      | -    | -        | PBOR | SW0                       | -                     | -                | \$7.99    | TOFP (PT)                   | -                                   |
| PIC18F83J11              | R                                 | 80    | 70  | PIC18 | 8 KB<br>4 Kw    | ✓         | ✓          | 1024         | -             | 2V-3.6V         | 40 MHz        | 8 MHz, 31 kHz              | 0            | -                | -                            | -          | 12         | -           | 2   | 2       | -           | 1            | 3      | 1             | 1                 | 1   | 1                  | -      | -    | -        | BOR  | SW0                       | -                     | -                | \$2.46    | TOFP (PT)                   | -                                   |
| PIC18F85J10              | R                                 | 80    | 66  | PIC18 | 32 KB<br>16 Kw  | ✓         | ✓          | 2048         | -             | 2V-3.6V         | 40 MHz        | 31 kHz                     | 0            | -                | -                            | -          | 15         | -           | 2   | 2       | 3           | 2            | 3      | -             | 2                 | 2   | 2                  | -      | -    | -        | BOR  | ✓                         | -                     | -                | \$2.49    | TOFP (PT)                   | -                                   |
| PIC18F84J11              | R                                 | 80    | 70  | PIC18 | 16 KB<br>8 Kw   | ✓         | ✓          | 1024         | -             | 2V-3.6V         | 40 MHz        | 8 MHz, 31 kHz              | 0            | -                | -                            | -          | 12         | -           | 2   | 2       | -           | 1            | 3      | 1             | 1                 | 1   | 1                  | -      | -    | -        | BOR  | SW0                       | -                     | -                | \$2.52    | TOFP (PT)                   | -                                   |
| PIC18F83J90              | R                                 | 80    | 66  | PIC18 | 8 KB<br>4 Kw    | ✓         | ✓          | 1024         | -             | 2V-3.6V         | 40 MHz        | 8 MHz, 31 kHz              | 192          | -                | -                            | -          | 12         | -           | 2   | 2       | -           | 1            | 3      | 1             | 1                 | 1   | 1                  | -      | -    | -        | BOR  | ✓                         | -                     | -                | \$2.60    | TOFP (PT)                   | Integrated LCD Driver               |
| PIC18F85J11              | R                                 | 80    | 70  | PIC18 | 32 KB<br>16 Kw  | ✓         | ✓          | 2048         | -             | 2V-3.6V         | 40 MHz        | 8 MHz, 31 kHz              | 0            | -                | -                            | -          | 12         | -           | 2   | 2       | -           | 1            | 3      | 1             | 1                 | 1   | 1                  | -      | -    | -        | BOR  | SW0                       | -                     | -                | \$2.63    | TOFP (PT)                   | -                                   |
| PIC18F85K22 <sup>T</sup> | R                                 | 80    | 69  | PIC18 | 32 KB<br>16 Kw  | ✓         | ✓          | 2048         | 1024          | 1.8V-5.5V       | 64 MHz        | 31 kHz, 500 kHz,<br>16 MHz | 24           | ✓                | -                            | -          | 24         | 3           | 5   | 3       | 4           | 4            | -      | 2             | 2                 | 2   | -                  | -      | -    | BOR      | ✓    | -                         | -                     | \$2.66           | TOFP (PT) | XLP                         |                                     |
| PIC18F84J90              | R                                 | 80    | 66  | PIC18 | 16 KB<br>8 Kw   | ✓         | ✓          | 1024         | -             | 2V-3.6V         | 40 MHz        | 8 MHz, 31 kHz              | 192          | -                | -                            | -          | 12         | -           | 2   | 2       | -           | 1            | 3      | 1             | 1                 | 1   | 1                  | -      | -    | -        | BOR  | ✓                         | -                     | -                | \$2.67    | TOFP (PT)                   | Integrated LCD Driver               |
| PIC18F86J10              | R                                 | 80    | 66  | PIC18 | 64 KB<br>32 Kw  | ✓         | ✓          | 2048         | -             | 2V-3.6V         | 40 MHz        | 31 kHz                     | 0            | -                | -                            | -          | 15         | -           | 2   | 2       | 3           | 2            | 3      | -             | 2                 | 2   | 2                  | -      | -    | -        | BOR  | ✓                         | -                     | -                | \$2.74    | TOFP (PT)                   | -                                   |
| PIC18F85J90              | R                                 | 80    | 66  | PIC18 | 32 KB<br>16 Kw  | ✓         | ✓          | 2048         | -             | 2V-3.6V         | 40 MHz        | 8 MHz, 31 kHz              | 192          | -                | -                            | -          | 12         | -           | 2   | 2       | -           | 1            | 3      | 1             | 1                 | 1   | 1                  | -      | -    | -        | BOR  | ✓                         | -                     | -                | \$2.77    | TOFP (PT), LOFP (PL)        | Integrated LCD Driver               |
| PIC18F85K90 <sup>T</sup> | R                                 | 80    | 69  | PIC18 | 32 KB<br>16 Kw  | ✓         | ✓          | 2048         | 1024          | 1.8V-5.5V       | 64 MHz        | 31 kHz, 500 kHz,<br>16 MHz | 192          | 24               | ✓                            | -          | -          | 24          | 3   | 5       | 3           | 4            | 4      | -             | 2                 | 2   | 2                  | -      | -    | -        | BOR  | ✓                         | -                     | -                | \$2.80    | TOFP (PT)                   | Integrated LCD Driver, XLP          |
| PIC18F85J50              | R                                 | 80    | 65  | PIC18 | 32 KB<br>16 Kw  | ✓         | ✓          | 3904         | -             | 2V-3.6V         | 48 MHz        | 8 MHz, 31 kHz              | 0            | -                | -                            | -          | 12         | -           | 2   | 2       | 3           | 2            | 3      | -             | 2                 | 2   | 2                  | -      | 1    | -        | BOR  | ✓                         | -                     | -                | \$2.90    | TOFP (PT)                   | USB 2.0 (Full Speed)                |
| PIC18F86J11              | R                                 | 80    | 66  | PIC18 | 64 KB<br>32 Kw  | ✓         | ✓          | 3904         | -             | 2V-3.6V         | 48 MHz        | 8 MHz, 31 kHz              | 0            | -                | -                            | -          | 15         | -           | 2   | 2       | 3           | 2            | 3      | -             | 2                 | 2   | 2                  | -      | -    | -        | BOR  | ✓                         | -                     | -                | \$2.90    | TOFP (PT)                   | -                                   |
| PIC18F86J90/3            | R                                 | 80    | 67  | PIC18 | 64 KB<br>32 Kw  | ✓         | ✓          | 3900         | -             | 2V-3.6V         | 48 MHz        | 8 MHz, 31 kHz              | 192          | 12               | ✓                            | -          | 12         | 2           | 2   | -       | 1           | 3            | 1      | 1             | 1                 | 1   | -                  | -      | -    | BOR      | ✓    | -                         | -                     | \$2.97           | TOFP (PT) | Integrated LCD Driver, RTCC |                                     |
| PIC18F86K22 <sup>T</sup> | R                                 | 80    | 69  | PIC18 | 64 KB<br>32 Kw  | ✓         | ✓          | 4096         | 1024          | 1.8V-5.5V       | 64 MHz        | 31 kHz, 500 kHz,<br>16 MHz | 24           | ✓                | -                            | -          | 24         | 3           | 7   | 3       | 6           | 5            | -      | 2             | 2                 | 2   | -                  | -      | -    | BOR      | ✓    | -                         | -                     | \$2.97           | TOFP (PT) | XLP                         |                                     |
| PIC18F87J10              | R                                 | 80    | 66  | PIC18 | 128 KB<br>64 Kw | ✓         | ✓          | 3936         | -             | 2V-3.6V         | 40 MHz        | 31 kHz                     | 0            | -                | -                            | -          | 15         | -           | 2   | 2       | 3           | 2            | 3      | -             | 2                 | 2   | 2                  | -      | -    | -        | BOR  | ✓                         | -                     | -                | \$3.02    | TOFP (PT), LOFP (PL)        | -                                   |
| PIC18F86K90 <sup>T</sup> | R                                 | 80    | 69  | PIC18 | 64 KB<br>32 Kw  | ✓         | ✓          | 4096         | 1024          | 1.8V-5.5V       | 64 MHz        | 31 kHz, 500 kHz,<br>16 MHz | 192          | 24               | ✓                            | -          | -          | 24          | 3   | 7       | 3           | 6            | 5      | -             | 2                 | 2   | 2                  | -      | -    | -        | BOR  | ✓                         | -                     | -                | \$3.11    | TOFP (PT)                   | Integrated LCD Driver, XLP          |
| PIC18F86J50              | R                                 | 80    | 65  | PIC18 | 64 KB<br>32 Kw  | ✓         | ✓          | 3904         | -             | 2V-3.6V         | 48 MHz        | 8 MHz, 31 kHz              | 0            | -                | -                            | -          | 12         | -           | 2   | 2       | 3           | 2            | 3      | -             | 2                 | 2   | 2                  | -      | 1    | -        | BOR  | ✓                         | -                     | -                | \$3.15    | TOFP (PT)                   | USB 2.0 (Full Speed)                |
| PIC18F87J11              | R                                 | 80    | 66  | PIC18 | 128 KB<br>64 Kw | ✓         | ✓          | 3904         | -             | 2V-3.6V         | 48 MHz        | 8 MHz, 31 kHz              | 0            | -                | -                            | -          | 15         | -           | 2   | 2       | 3           | 2            | 3      | -             | 2                 | 2   | 2                  | -      | -    | -        | BOR  | ✓                         | -                     | -                | \$3.19    | TOFP (PT)                   | -                                   |
| PIC18F87K22 <sup>T</sup> | R                                 | 80    | 69  | PIC18 | 128 KB<br>64 Kw | ✓         | ✓          | 4096         | 1024          | 1.8V-5.5V       | 64 MHz        | 31 kHz, 500 kHz,<br>16 MHz | 24           | ✓                | -                            | -          | 24         | 3           | 7   | 3       | 6           | 5            | -      | 2             | 2                 | 2   | -                  | -      | -    | BOR      | ✓    | -                         | -                     | \$3.21           | TOFP (PT) | XLP                         |                                     |
| PIC18F87J90/3            | R                                 | 80    | 67  | PIC18 | 128 KB<br>64 Kw | ✓         | ✓          | 3900         | -             | 2V-3.6V         | 48 MHz        | 8 MHz, 31 kHz              | 192          | 12               | ✓                            | -          | 12         | 2           | 2   | -       | 1           | 3            | 1      | 1             | 1                 | 1   | -                  | -      | -    | BOR      | ✓    | -                         | -                     | \$3.26           | TOFP (PT) | Integrated LCD Driver, RTCC |                                     |

Products sorted by pin count followed by pricing.

1 - Pricing subject to change; please contact your Microchip representative for most current pricing.

0 - Software PLVD implemented via ADC.



## 8-bit PIC® Microcontrollers

| Product     | Released (R)<br>Not Released (NR) | Pins  |     | Core  | Memory          |           |            |              | Voltage Range | Operating Speed |               | LCD Segments               | Analog Sensing & Measurement |                              | Digital   |            |            |             | Communication |      |             |              | Monitors |        |     | Packages (Designator) | Special Features |     |                    |        |      |          |      |          |              |                           |                               |
|-------------|-----------------------------------|-------|-----|-------|-----------------|-----------|------------|--------------|---------------|-----------------|---------------|----------------------------|------------------------------|------------------------------|-----------|------------|------------|-------------|---------------|------|-------------|--------------|----------|--------|-----|-----------------------|------------------|-----|--------------------|--------|------|----------|------|----------|--------------|---------------------------|-------------------------------|
|             |                                   | Total | I/O |       | Program         | Self-Read | Self-Write | Data RAM (B) |               | Data EE (B)     | Maximum Speed |                            | Internal Oscillator          | Change Time Measurement Unit | 8-bit ADC | 10-bit ADC | 12-bit ADC | Comparators | CCP           | ECCP | 8-bit Timer | 16-bit Timer | AUSART   | EUSART | PC™ |                       |                  | SPI | Ethernet (MAC/PHY) | FS-USB | ECAN | BOR/PBOR | PLVD | SR-Latch | Timer 1 Gate | 5 ku Pricing <sup>1</sup> |                               |
| PIC18F87K90 | NR                                | 80    | 69  | PIC18 | 128 KB<br>64 Kw | ✓         | ✓          | 4096         | 1024          | 1.8V-5.5V       | 64 MHz        | 31 kHz, 500 kHz,<br>16 MHz | 192                          | 24                           | ✓         | -          | -          | 24          | 3             | 7    | 3           | 6            | 5        | -      | 2   | 2                     | 2                | -   | -                  | -      | BOR  | ✓        | -    | -        | \$3.35       | TQFP (PT)                 | Integrated LCD Driver, XLP    |
| PIC18F87J50 | R                                 | 80    | 65  | PIC18 | 128 KB<br>64 Kw | ✓         | ✓          | 3904         | -             | 2V-3.6V         | 48 MHz        | 8 MHz, 31 kHz              | 0                            | -                            | -         | -          | 12         | -           | 2             | 2    | 3           | 2            | 3        | -      | 2   | 2                     | 2                | -   | 1                  | -      | BOR  | ✓        | -    | -        | \$3.44       | TQFP (PT)                 | USB 2.0 (Full Speed)          |
| PIC18F86J60 | R                                 | 80    | 55  | PIC18 | 64 KB<br>32 Kw  | ✓         | ✓          | 3808         | -             | 2V-3.6V         | 42 MHz        | 31 kHz                     | 0                            | -                            | -         | -          | 15         | -           | 2             | 2    | 3           | 2            | 3        | -      | 2   | 1                     | 1                | 1   | -                  | -      | BOR  | ✓        | -    | -        | \$3.63       | TQFP (PT)                 | Integrated MAC, 10 Base T PHY |
| PIC18F8493  | R                                 | 80    | 66  | PIC18 | 16 KB<br>8 Kw   | ✓         | -          | 768          | -             | 2V-5.5V         | 32 MHz        | 8 MHz, 31 kHz              | 192                          | -                            | -         | -          | 12         | 2           | 2             | -    | 1           | 3            | 1        | 1      | 1   | 1                     | -                | -   | -                  | PBOR   | SW0  | -        | -    | \$3.78   | TQFP (PT)    | Integrated LCD Driver     |                               |
| PIC18F87J60 | R                                 | 80    | 55  | PIC18 | 128 KB<br>64 Kw | ✓         | ✓          | 3808         | -             | 2V-3.6V         | 42 MHz        | 32 kHz, 31 kHz             | 0                            | -                            | -         | -          | 15         | -           | 2             | 2    | 3           | 2            | 3        | -      | 2   | 1                     | 1                | 1   | -                  | -      | BOR  | ✓        | -    | -        | \$3.92       | TQFP (PT)                 | Integrated MAC, 10 Base T PHY |
| PIC18F8723  | R                                 | 80    | 70  | PIC18 | 128 KB<br>64 Kw | ✓         | ✓          | 3936         | 1024          | 2V-5.5V         | 40 MHz        | 8 MHz, 31 kHz              | 0                            | -                            | -         | -          | 16         | 2           | 2             | 3    | 2           | 3            | -        | 2      | 2   | 2                     | -                | -   | -                  | PBOR   | SW0  | -        | -    | \$8.44   | TQFP (PT)    | -                         |                               |
| PIC18F96J60 | R                                 | 100   | 70  | PIC18 | 64 KB<br>32 Kw  | ✓         | ✓          | 3808         | -             | 2V-3.6V         | 42 MHz        | 31 kHz                     | 0                            | -                            | -         | -          | 16         | -           | 2             | 2    | 3           | 2            | 3        | -      | 2   | 2                     | 2                | 1   | -                  | -      | BOR  | ✓        | -    | -        | \$3.84       | TQFP (PT)                 | Integrated MAC, 10 Base T PHY |
| PIC18F97J60 | R                                 | 100   | 70  | PIC18 | 128 KB<br>64 Kw | ✓         | ✓          | 3808         | -             | 2V-3.6V         | 42 MHz        | 31 kHz                     | 0                            | -                            | -         | -          | 16         | -           | 2             | 2    | 3           | 2            | 3        | -      | 2   | 2                     | 2                | 1   | -                  | -      | BOR  | ✓        | -    | -        | \$4.13       | TQFP (PT), LQFP (PL)      | Integrated MAC, 10 Base T PHY |

## 16 bit PIC® Microcontrollers (PIC24F)

| Product        | Released (R)<br>Not Released (NR) | I/O Pins | Core  | Memory       |              |                       |          | Voltage Range | Operating Speed |                     | Analog Sensing & Measurement |            |                                |             | Graphics Controller | Output Compare/PWM | Input Capture | 16-bit Timer <sup>2</sup> | Communication         |            | PMP | RTCC/GRC | PPS | 5 ku Pricing <sup>1</sup> | Monitors                            | Packages (Designator)                      |
|----------------|-----------------------------------|----------|-------|--------------|--------------|-----------------------|----------|---------------|-----------------|---------------------|------------------------------|------------|--------------------------------|-------------|---------------------|--------------------|---------------|---------------------------|-----------------------|------------|-----|----------|-----|---------------------------|-------------------------------------|--|
|                |                                   |          |       | Program (KB) | Data RAM (B) | EEPROM                | DMA # Ch |               | Maximum MIPS    | Internal Oscillator | Change Time Measurement Unit | 10-bit ADC | 10/12-bit ADC<br>1100/500 KSPS | Comparators |                     |                    |               |                           | Digital Communication | FS USB OTG |     |          |     |                           | System Mgmt. Features               |  |
| PIC24F04KA200  | R                                 | 12       | PIC24 | 4            | 512          | AN1095 <sup>(1)</sup> | -        | 1.8V-3.6V     | 16              | 8 MHz, 32 kHz       | ✓                            | 7          | -                              | 2           | -                   | 1                  | 1             | 3                         | 1 UART, 1 SPI, 1 PC   | -          | -   | -        | -   | \$1.16                    | BOR, POR, WDT, Deep Sleep, XLP      | SPDIP (SP), TSSOP (ST)                     |
| PIC24F04KA201  | R                                 | 18       | PIC24 | 4            | 512          | AN1095 <sup>(1)</sup> | -        | 1.8V-3.6V     | 16              | 8 MHz, 32 kHz       | ✓                            | 9          | -                              | 2           | -                   | 1                  | 1             | 3                         | 1 UART, 1 SPI, 1 PC   | -          | -   | -        | -   | \$1.25                    | BOR, POR, WDT, Deep Sleep, XLP      | PDIP (P), SSOP (SS), SOIC (SO), QFN (MQL)  |
| PIC24F08KA101  | R                                 | 18       | PIC24 | 8            | 1536         | 512                   | -        | 1.8V-3.6V     | 16              | 8 MHz, 32 kHz       | ✓                            | 9          | -                              | 2           | -                   | 1                  | 1             | 3                         | 2 UART, 1 SPI, 1 PC   | -          | -   | ✓        | -   | \$1.44                    | BOR, POR, WDT, Deep Sleep, XLP      | PDIP (P), SSOP (SS), SOIC (SO), QFN (MQL)  |
| PIC24F16KA101  | R                                 | 18       | PIC24 | 16           | 1536         | 512                   | -        | 1.8V-3.6V     | 16              | 8 MHz, 32 kHz       | ✓                            | 9          | -                              | 2           | -                   | 1                  | 1             | 3                         | 2 UART, 1 SPI, 1 PC   | -          | -   | ✓        | -   | \$1.51                    | BOR, POR, WDT, Deep Sleep, XLP      | PDIP (P), SSOP (SS), SOIC (SO), QFN (MQL)  |
| PIC24F16KA301  | NR                                | 18       | PIC24 | 16           | 2048         | 512                   | -        | 1.8V-5.5V     | 16              | 8 MHz, 32 kHz       | ✓                            | -          | 9                              | 3           | -                   | 3                  | 3             | 5                         | 2 UART, 2 SPI, 2 PC   | -          | -   | ✓        | -   | \$1.86                    | PWRT, HLVD, POR, OST, WDT           | SPDIP (P), SSOP (SS), SOIC (SO)            |
| PIC24F32KA301  | NR                                | 18       | PIC24 | 32           | 2048         | 512                   | -        | 1.8V-5.5V     | 16              | 8 MHz, 32 kHz       | ✓                            | -          | 9                              | 3           | -                   | 3                  | 3             | 5                         | 2 UART, 2 SPI, 2 PC   | -          | -   | ✓        | -   | \$2.00                    | PWRT, HLVD, POR, OST, WDT           | SPDIP (P), SSOP (SS), SOIC (SO)            |
| PIC24F08KA102  | R                                 | 24       | PIC24 | 8            | 1536         | 512                   | -        | 1.8V-3.6V     | 16              | 8 MHz, 32 kHz       | ✓                            | 9          | -                              | 2           | -                   | 1                  | 1             | 3                         | 2 UART, 1 SPI, 1 PC   | -          | -   | ✓        | -   | \$1.51                    | BOR, POR, WDT, Deep Sleep, XLP      | SPDIP (SP), SSOP (SS), SOIC (SO), QFN (ML) |
| PIC24F16KA102  | R                                 | 24       | PIC24 | 16           | 1536         | 512                   | -        | 1.8V-3.6V     | 16              | 8 MHz, 32 kHz       | ✓                            | 9          | -                              | 2           | -                   | 1                  | 1             | 3                         | 2 UART, 1 SPI, 1 PC   | -          | -   | ✓        | -   | \$1.58                    | BOR, POR, WDT, Deep Sleep, XLP      | SPDIP (SP), SSOP (SS), SOIC (SO), QFN (ML) |
| PIC24FJ16GA002 | R                                 | 21       | PIC24 | 16           | 4096         | AN1095 <sup>(1)</sup> | -        | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | -                            | 10         | -                              | 2           | -                   | 5                  | 5             | 5                         | 2 UART, 2 SPI, 2 PC   | -          | ✓   | ✓        | ✓   | \$1.74                    | BOR, LVD, POR, WDT                  | SPDIP (SP), SSOP (SS), SOIC (SO), QFN (ML) |
| PIC24FJ32GA002 | R                                 | 21       | PIC24 | 32           | 8192         | AN1095 <sup>(1)</sup> | -        | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | -                            | 10         | -                              | 2           | -                   | 5                  | 5             | 5                         | 2 UART, 2 SPI, 2 PC   | -          | ✓   | ✓        | ✓   | \$2.06                    | BOR, LVD, POR, WDT                  | SPDIP (SP), SSOP (SS), SOIC (SO), QFN (ML) |
| PIC24F16KA302  | NR                                | 24       | PIC24 | 16           | 2048         | 512                   | -        | 1.8V-5.5V     | 16              | 8 MHz, 32 kHz       | ✓                            | -          | 10                             | 3           | -                   | 3                  | 3             | 5                         | 2 UART, 2 SPI, 2 PC   | -          | -   | ✓        | -   | \$2.06                    | PWRT, HLVD, POR, OST, WDT           | SPDIP (SP), SSOP (SS), SOIC (SO), QFN (ML) |
| PIC24F32KA302  | NR                                | 24       | PIC24 | 32           | 2048         | 512                   | -        | 1.8V-5.5V     | 16              | 8 MHz, 32 kHz       | ✓                            | -          | 10                             | 3           | -                   | 3                  | 3             | 5                         | 2 UART, 2 SPI, 2 PC   | -          | -   | ✓        | -   | \$2.20                    | PWRT, HLVD, POR, OST, WDT           | SPDIP (SP), SSOP (SS), SOIC (SO), QFN (ML) |
| PIC24FJ32GA102 | R                                 | 21       | PIC24 | 32           | 8192         | AN1095 <sup>(1)</sup> | -        | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | ✓                            | 10         | -                              | 3           | -                   | 5                  | 5             | 5                         | 2 UART, 2 SPI, 2 PC   | -          | ✓   | ✓        | ✓   | \$2.23                    | BOR, LVD, POR, WDT, Deep Sleep, XLP | SPDIP (SP), SOIC (SO), QFN (ML)            |
| PIC24FJ32GB002 | R                                 | 19       | PIC24 | 32           | 8192         | AN1095 <sup>(1)</sup> | -        | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | ✓                            | 9          | -                              | 3           | -                   | 5                  | 5             | 5                         | 2 UART, 2 SPI, 2 PC   | ✓          | ✓   | ✓        | ✓   | \$2.44                    | BOR, LVD, POR, WDT, Deep Sleep, XLP | SPDIP (SP), SOIC (SO), QFN (ML)            |
| PIC24FJ64GA002 | R                                 | 21       | PIC24 | 64           | 8192         | AN1095 <sup>(1)</sup> | -        | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | -                            | 10         | -                              | 2           | -                   | 5                  | 5             | 5                         | 2 UART, 2 SPI, 2 PC   | -          | ✓   | ✓        | ✓   | \$2.48                    | BOR, LVD, POR, WDT                  | SPDIP (SP), SSOP (SS), SOIC (SO), QFN (ML) |
| PIC24FJ64GA102 | R                                 | 21       | PIC24 | 64           | 8192         | AN1095 <sup>(1)</sup> | -        | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | ✓                            | 10         | -                              | 3           | -                   | 5                  | 5             | 5                         | 2 UART, 2 SPI, 2 PC   | -          | ✓   | ✓        | ✓   | \$2.65                    | BOR, LVD, POR, WDT, Deep Sleep, XLP | SPDIP (SP), SOIC (SO), QFN (ML)            |
| PIC24FJ64GB002 | R                                 | 19       | PIC24 | 64           | 8192         | AN1095 <sup>(1)</sup> | -        | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | ✓                            | 9          | -                              | 3           | -                   | 5                  | 5             | 5                         | 2 UART, 2 SPI, 2 PC   | ✓          | ✓   | ✓        | ✓   | \$2.86                    | BOR, LVD, POR, WDT, Deep Sleep, XLP | SPDIP (SP), SOIC (SO), QFN (ML)            |

<sup>1</sup> Parts available with High Temperature options (150°C).

Note 1: See Application Note "AN1095 - Emulating Data EEPROM".

2: Two 16-bit timers can be concatenated to form a 32-bit timer.

Products sorted by pin count followed by pricing.

† - Pricing subject to change; please contact your Microchip representative for most current pricing.

◊ - Software PLVD implemented via ADC.

# 16 bit PIC® Microcontrollers (PIC24F)

| Product         | Released (R)<br>Not Released (NR) | I/O Pins | Core  | Memory       |              |                       |         | Voltage Range | Operating Speed |                     | Analog Sensing & Measurement |            |                                |             | Graphics Controller | Output Compare/PWM | Input Capture | 16-bit Timer <sup>(2)</sup> | Communication                     |            |     |          | 5 ku Pricing <sup>†</sup> | Monitors | Packages (Designator)               |                                |                       |
|-----------------|-----------------------------------|----------|-------|--------------|--------------|-----------------------|---------|---------------|-----------------|---------------------|------------------------------|------------|--------------------------------|-------------|---------------------|--------------------|---------------|-----------------------------|-----------------------------------|------------|-----|----------|---------------------------|----------|-------------------------------------|--------------------------------|-----------------------|
|                 |                                   |          |       | Program (KB) | Data RAM (B) | EEPROM                | DMA #Ch |               | Maximum MIPS    | Internal Oscillator | Charge Time Measurement Unit | 10-bit ADC | 10/12-bit ADC<br>1100/600 KSPS | Comparators |                     |                    |               |                             | Digital Communication             | FS USB OTG | PMP | RTCC/CRC |                           |          |                                     | PPS                            | System Mgmt. Features |
| PIC24FJ16GA004  | R                                 | 35       | PIC24 | 16           | 4096         | AN1095 <sup>(1)</sup> | -       | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | -                            | 13         | -                              | 2           | -                   | 5                  | 5             | 5                           | 2 UART, 2 SPI, 2 I <sup>2</sup> C | -          | ✓   | ✓        | ✓                         | \$1.93   | BOR, LVD, POR, WDT                  | TOFP (PT), OFN (ML)            | 44-Pin                |
| PIC24FJ32GA004  | R                                 | 35       | PIC24 | 32           | 8192         | AN1095 <sup>(1)</sup> | -       | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | -                            | 13         | -                              | 2           | -                   | 5                  | 5             | 5                           | 2 UART, 2 SPI, 2 I <sup>2</sup> C | -          | ✓   | ✓        | ✓                         | \$2.30   | BOR, LVD, POR, WDT                  | TOFP (PT), OFN (ML)            |                       |
| PIC24F16KA304   | NR                                | 38       | PIC24 | 16           | 2048         |                       | -       | 1.8V-5.5V     | 16              | 8 MHz, 32 kHz       | ✓                            | -          | 16                             | 3           | -                   | 3                  | 3             | 5                           | 2 UART, 2 SPI, 2 I <sup>2</sup> C | -          | -   | ✓        | -                         | \$2.30   | PWRT, HLVD, POR, OST, WDT           | TOFP (PT), OFN (ML), UOFN (MV) |                       |
| PIC24FJ32GA104  | R                                 | 35       | PIC24 | 32           | 8192         | AN1095 <sup>(1)</sup> | -       | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | ✓                            | 13         | -                              | 3           | -                   | 5                  | 5             | 5                           | 2 UART, 2 SPI, 2 I <sup>2</sup> C | -          | ✓   | ✓        | ✓                         | \$2.44   | BOR, LVD, POR, WDT, Deep Sleep, XLP | TOFP (PT), OFN (ML)            |                       |
| PIC24F32KA304   | NR                                | 38       | PIC24 | 32           | 2048         |                       | -       | 1.8V-5.5V     | 16              | 8 MHz, 32 kHz       | ✓                            | -          | 16                             | 3           | -                   | 3                  | 3             | 5                           | 2 UART, 2 SPI, 2 I <sup>2</sup> C | -          | -   | ✓        | -                         | \$2.44   | PWRT, HLVD, POR, OST, WDT           | TOFP (PT), OFN (ML), UOFN (MV) |                       |
| PIC24FJ32GB004  | R                                 | 33       | PIC24 | 32           | 8192         | AN1095 <sup>(1)</sup> | -       | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | ✓                            | 13         | -                              | 3           | -                   | 5                  | 5             | 5                           | 2 UART, 2 SPI, 2 I <sup>2</sup> C | ✓          | ✓   | ✓        | ✓                         | \$2.65   | BOR, LVD, POR, WDT, Deep Sleep, XLP | TOFP (PT), OFN (ML)            |                       |
| PIC24FJ64GA004  | R                                 | 35       | PIC24 | 64           | 8192         | AN1095 <sup>(1)</sup> | -       | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | -                            | 13         | -                              | 2           | -                   | 5                  | 5             | 5                           | 2 UART, 2 SPI, 2 I <sup>2</sup> C | -          | ✓   | ✓        | ✓                         | \$2.72   | BOR, LVD, POR, WDT                  | TOFP (PT), OFN (ML)            |                       |
| PIC24FJ64GA104  | R                                 | 35       | PIC24 | 64           | 8192         | AN1095 <sup>(1)</sup> | -       | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | ✓                            | 13         | -                              | 3           | -                   | 5                  | 5             | 5                           | 2 UART, 2 SPI, 2 I <sup>2</sup> C | -          | ✓   | ✓        | ✓                         | \$2.86   | BOR, LVD, POR, WDT, Deep Sleep, XLP | TOFP (PT), OFN (ML)            |                       |
| PIC24FJ64GB004  | R                                 | 33       | PIC24 | 64           | 8192         | AN1095 <sup>(1)</sup> | -       | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | ✓                            | 13         | -                              | 3           | -                   | 5                  | 5             | 5                           | 2 UART, 2 SPI, 2 I <sup>2</sup> C | ✓          | ✓   | ✓        | ✓                         | \$3.07   | BOR, LVD, POR, WDT, Deep Sleep, XLP | TOFP (PT), OFN (ML)            |                       |
| PIC24FJ64GA006  | R                                 | 53       | PIC24 | 64           | 8192         | AN1095 <sup>(1)</sup> | -       | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | -                            | 16         | -                              | 2           | -                   | 5                  | 5             | 5                           | 2 UART, 2 SPI, 2 I <sup>2</sup> C | -          | ✓   | ✓        | -                         | \$3.05   | BOR, POR, WDT                       | TOFP (PT)                      | 64-Pin                |
| PIC24FJ128GA006 | R                                 | 53       | PIC24 | 128          | 8192         | AN1095 <sup>(1)</sup> | -       | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | -                            | 16         | -                              | 2           | -                   | 5                  | 5             | 5                           | 2 UART, 2 SPI, 2 I <sup>2</sup> C | -          | ✓   | ✓        | -                         | \$3.35   | BOR, POR, WDT                       | TOFP (PT)                      |                       |
| PIC24FJ128GA106 | R                                 | 53       | PIC24 | 128          | 16384        | AN1095 <sup>(1)</sup> | -       | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | ✓                            | 16         | -                              | 3           | -                   | 9                  | 9             | 5                           | 4 UART, 3 SPI, 3 I <sup>2</sup> C | -          | ✓   | ✓        | ✓                         | \$3.56   | BOR, LVD, POR, WDT                  | TOFP (PT)                      |                       |
| PIC24FJ64GB106  | R                                 | 52       | PIC24 | 64           | 16384        | AN1095 <sup>(1)</sup> | -       | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | ✓                            | 16         | -                              | 3           | -                   | 9                  | 9             | 5                           | 4 UART, 3 SPI, 3 I <sup>2</sup> C | ✓          | ✓   | ✓        | ✓                         | \$3.64   | BOR, LVD, POR, WDT                  | TOFP (PT)                      |                       |
| PIC24FJ192GA106 | R                                 | 53       | PIC24 | 192          | 16384        | AN1095 <sup>(1)</sup> | -       | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | ✓                            | 16         | -                              | 3           | -                   | 9                  | 9             | 5                           | 4 UART, 3 SPI, 3 I <sup>2</sup> C | -          | ✓   | ✓        | ✓                         | \$3.77   | BOR, LVD, POR, WDT                  | TOFP (PT)                      |                       |
| PIC24FJ128GB106 | R                                 | 52       | PIC24 | 128          | 16384        | AN1095 <sup>(1)</sup> | -       | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | ✓                            | 16         | -                              | 3           | -                   | 9                  | 9             | 5                           | 4 UART, 3 SPI, 3 I <sup>2</sup> C | ✓          | ✓   | ✓        | ✓                         | \$3.93   | BOR, LVD, POR, WDT                  | TOFP (PT)                      |                       |
| PIC24FJ256GA106 | R                                 | 53       | PIC24 | 256          | 16384        | AN1095 <sup>(1)</sup> | -       | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | ✓                            | 16         | -                              | 3           | -                   | 9                  | 9             | 5                           | 4 UART, 3 SPI, 3 I <sup>2</sup> C | -          | ✓   | ✓        | ✓                         | \$3.98   | BOR, LVD, POR, WDT                  | TOFP (PT)                      |                       |
| PIC24FJ192GB106 | R                                 | 52       | PIC24 | 192          | 16384        | AN1095 <sup>(1)</sup> | -       | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | ✓                            | 16         | -                              | 3           | -                   | 9                  | 9             | 5                           | 4 UART, 3 SPI, 3 I <sup>2</sup> C | ✓          | ✓   | ✓        | ✓                         | \$4.14   | BOR, LVD, POR, WDT                  | TOFP (PT)                      |                       |
| PIC24FJ128GB206 | R                                 | 52       | PIC24 | 128          | 98304        | AN1095 <sup>(1)</sup> | -       | 2.2V-3.6V     | 16              | 8 MHz, 32 kHz       | ✓                            | 16         | -                              | 3           | -                   | 9                  | 9             | 5                           | 4 UART, 3 SPI, 3 I <sup>2</sup> C | ✓          | ✓   | ✓        | ✓                         | \$4.30   | BOR, LVD, POR, WDT                  | TOFP (PT), OFN (MR)            |                       |
| PIC24FJ128DA106 | R                                 | 52       | PIC24 | 128          | 24576        | AN1095 <sup>(1)</sup> | -       | 2.2V-3.6V     | 16              | 8 MHz, 32 kHz       | ✓                            | 16         | -                              | 3           | ✓                   | 9                  | 9             | 5                           | 4 UART, 3 SPI, 3 I <sup>2</sup> C | ✓          | -   | ✓        | ✓                         | \$4.34   | BOR, LVD, POR, WDT                  | TOFP (PT), OFN (MR)            |                       |
| PIC24FJ256GB106 | R                                 | 52       | PIC24 | 256          | 16384        | AN1095 <sup>(1)</sup> | -       | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | ✓                            | 16         | -                              | 3           | -                   | 9                  | 9             | 5                           | 4 UART, 3 SPI, 3 I <sup>2</sup> C | ✓          | ✓   | ✓        | ✓                         | \$4.35   | BOR, LVD, POR, WDT                  | TOFP (PT)                      |                       |
| PIC24FJ256GB206 | R                                 | 52       | PIC24 | 256          | 98304        | AN1095 <sup>(1)</sup> | -       | 2.2V-3.6V     | 16              | 8 MHz, 32 kHz       | ✓                            | 16         | -                              | 3           | -                   | 9                  | 9             | 5                           | 4 UART, 3 SPI, 3 I <sup>2</sup> C | ✓          | ✓   | ✓        | ✓                         | \$4.65   | BOR, LVD, POR, WDT                  | TOFP (PT), OFN (MR)            |                       |
| PIC24FJ256DA106 | R                                 | 52       | PIC24 | 256          | 24576        | AN1095 <sup>(1)</sup> | -       | 2.2V-3.6V     | 16              | 8 MHz, 32 kHz       | ✓                            | 16         | -                              | 3           | ✓                   | 9                  | 9             | 5                           | 4 UART, 3 SPI, 3 I <sup>2</sup> C | ✓          | -   | ✓        | ✓                         | \$4.69   | BOR, LVD, POR, WDT                  | TOFP (PT), OFN (MR)            |                       |
| PIC24FJ128DA206 | R                                 | 52       | PIC24 | 128          | 98304        | AN1095 <sup>(1)</sup> | -       | 2.2V-3.6V     | 16              | 8 MHz, 32 kHz       | ✓                            | 16         | -                              | 3           | ✓                   | 9                  | 9             | 5                           | 4 UART, 3 SPI, 3 I <sup>2</sup> C | ✓          | -   | ✓        | ✓                         | \$4.76   | BOR, LVD, POR, WDT                  | TOFP (PT), OFN (MR)            |                       |
| PIC24FJ256DA206 | R                                 | 52       | PIC24 | 256          | 98304        | AN1095 <sup>(1)</sup> | -       | 2.2V-3.6V     | 16              | 8 MHz, 32 kHz       | ✓                            | 16         | -                              | 3           | ✓                   | 9                  | 9             | 5                           | 4 UART, 3 SPI, 3 I <sup>2</sup> C | ✓          | -   | ✓        | ✓                         | \$5.11   | BOR, LVD, POR, WDT                  | TOFP (PT), OFN (MR)            |                       |
| PIC24FJ64GA008  | R                                 | 69       | PIC24 | 64           | 8192         | AN1095 <sup>(1)</sup> | -       | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | -                            | 16         | -                              | 2           | -                   | 5                  | 5             | 5                           | 2 UART, 2 SPI, 2 I <sup>2</sup> C | -          | ✓   | ✓        | -                         | \$3.30   | BOR, POR, WDT                       | TOFP (PT)                      | 80-Pin                |
| PIC24FJ128GA008 | R                                 | 69       | PIC24 | 128          | 8192         | AN1095 <sup>(1)</sup> | -       | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | -                            | 16         | -                              | 2           | -                   | 5                  | 5             | 5                           | 2 UART, 2 SPI, 2 I <sup>2</sup> C | -          | ✓   | ✓        | -                         | \$3.60   | BOR, POR, WDT                       | TOFP (PT)                      |                       |
| PIC24FJ128GA108 | R                                 | 69       | PIC24 | 128          | 16384        | AN1095 <sup>(1)</sup> | -       | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | ✓                            | 16         | -                              | 3           | -                   | 9                  | 9             | 5                           | 4 UART, 3 SPI, 3 I <sup>2</sup> C | -          | ✓   | ✓        | ✓                         | \$3.82   | BOR, LVD, POR, WDT                  | TOFP (PT)                      |                       |
| PIC24FJ64GB108  | R                                 | 68       | PIC24 | 64           | 16384        | AN1095 <sup>(1)</sup> | -       | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | ✓                            | 16         | -                              | 3           | -                   | 9                  | 9             | 5                           | 4 UART, 3 SPI, 3 I <sup>2</sup> C | ✓          | ✓   | ✓        | ✓                         | \$3.91   | BOR, LVD, POR, WDT                  | TOFP (PT)                      |                       |
| PIC24FJ192GA108 | R                                 | 69       | PIC24 | 192          | 16384        | AN1095 <sup>(1)</sup> | -       | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | ✓                            | 16         | -                              | 3           | -                   | 9                  | 9             | 5                           | 4 UART, 3 SPI, 3 I <sup>2</sup> C | -          | ✓   | ✓        | ✓                         | \$4.03   | BOR, LVD, POR, WDT                  | TOFP (PT)                      |                       |
| PIC24FJ128GB108 | R                                 | 68       | PIC24 | 128          | 16384        | AN1095 <sup>(1)</sup> | -       | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | ✓                            | 16         | -                              | 3           | -                   | 9                  | 9             | 5                           | 4 UART, 3 SPI, 3 I <sup>2</sup> C | ✓          | ✓   | ✓        | ✓                         | \$4.20   | BOR, LVD, POR, WDT                  | TOFP (PT)                      |                       |
| PIC24FJ256GA108 | R                                 | 69       | PIC24 | 256          | 16384        | AN1095 <sup>(1)</sup> | -       | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | ✓                            | 16         | -                              | 3           | -                   | 9                  | 9             | 5                           | 4 UART, 3 SPI, 3 I <sup>2</sup> C | -          | ✓   | ✓        | ✓                         | \$4.24   | BOR, LVD, POR, WDT                  | TOFP (PT)                      |                       |
| PIC24FJ192GB108 | R                                 | 68       | PIC24 | 192          | 16384        | AN1095 <sup>(1)</sup> | -       | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | ✓                            | 16         | -                              | 3           | -                   | 9                  | 9             | 5                           | 4 UART, 3 SPI, 3 I <sup>2</sup> C | ✓          | ✓   | ✓        | ✓                         | \$4.41   | BOR, LVD, POR, WDT                  | TOFP (PT)                      |                       |
| PIC24FJ256GB108 | R                                 | 68       | PIC24 | 256          | 16384        | AN1095 <sup>(1)</sup> | -       | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | ✓                            | 16         | -                              | 3           | -                   | 9                  | 9             | 5                           | 4 UART, 3 SPI, 3 I <sup>2</sup> C | ✓          | ✓   | ✓        | ✓                         | \$4.62   | BOR, LVD, POR, WDT                  | TOFP (PT)                      |                       |

\*Parts available with High Temperature options (150°C).

Note 1: See Application Note \*AN1095 - Emulating Data EEPROM.

2: Two 16-bit timers can be concatenated to form a 32-bit timer.

Products sorted by pin count followed by pricing.

† - Pricing subject to change; please contact your Microchip representative for most current pricing.

◊ - Software PLVD implemented via ADC.

# 16 bit PIC® Microcontrollers (PIC24F)

| Product         | Released (R)<br>Not Released (NR) | I/O Pins | Core  | Memory       |              |                       |         | Voltage Range | Operating Speed |                     | Analog Sensing & Measurement |            |                                |             | Communication       |                    |               |               |                                   | 5 ku Pricing† | Monitors<br>System Mgmt. Features | Packages (Designator) |            |        |                    |                        |
|-----------------|-----------------------------------|----------|-------|--------------|--------------|-----------------------|---------|---------------|-----------------|---------------------|------------------------------|------------|--------------------------------|-------------|---------------------|--------------------|---------------|---------------|-----------------------------------|---------------|-----------------------------------|-----------------------|------------|--------|--------------------|------------------------|
|                 |                                   |          |       | Program (KB) | Data RAM (B) | EEPROM                | DMA #Ch |               | Maximum MIPS    | Internal Oscillator | Charge Time Measurement Unit | 10-bit ADC | 10/12-bit ADC<br>1100/600 KSPS | Comparators | Graphics Controller | Output Compare/PWM | Input Capture | 16-bit Timer‡ | Digital Communication             |               |                                   |                       | FS USB OTG | PMP    | RTCC/CRC           | PPS                    |
| PIC24FJ64GA010  | R                                 | 85       | PIC24 | 64           | 8192         | AN1095 <sup>(1)</sup> | -       | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | -                            | 16         | -                              | 2           | -                   | 5                  | 5             | 5             | 2 UART, 2 SPI, 2 I <sup>2</sup> C | -             | ✓                                 | ✓                     | -          | \$3.51 | BOR, POR, WDT      | TQFP (PT)              |
| PIC24FJ128GA010 | R                                 | 85       | PIC24 | 128          | 8192         | AN1095 <sup>(1)</sup> | -       | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | -                            | 16         | -                              | 2           | -                   | 5                  | 5             | 5             | 2 UART, 2 SPI, 2 I <sup>2</sup> C | -             | ✓                                 | ✓                     | -          | \$3.81 | BOR, POR, WDT      | TQFP (PT)              |
| PIC24FJ128GA110 | R                                 | 85       | PIC24 | 128          | 16384        | AN1095 <sup>(1)</sup> | -       | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | ✓                            | 16         | -                              | 3           | -                   | 9                  | 9             | 5             | 4 UART, 3 SPI, 3 I <sup>2</sup> C | -             | ✓                                 | ✓                     | ✓          | \$4.03 | BOR, LVD, POR, WDT | TQFP (PT)              |
| PIC24FJ64GB110  | R                                 | 84       | PIC24 | 64           | 16384        | AN1095 <sup>(1)</sup> | -       | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | ✓                            | 16         | -                              | 3           | -                   | 9                  | 9             | 5             | 4 UART, 3 SPI, 3 I <sup>2</sup> C | ✓             | ✓                                 | ✓                     | ✓          | \$4.12 | BOR, LVD, POR, WDT | TQFP (PT)              |
| PIC24FJ192GA110 | R                                 | 85       | PIC24 | 192          | 16384        | AN1095 <sup>(1)</sup> | -       | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | ✓                            | 16         | -                              | 3           | -                   | 9                  | 9             | 5             | 4 UART, 3 SPI, 3 I <sup>2</sup> C | -             | ✓                                 | ✓                     | ✓          | \$4.24 | BOR, LVD, POR, WDT | TQFP (PT)              |
| PIC24FJ128GB110 | R                                 | 84       | PIC24 | 128          | 16384        | AN1095 <sup>(1)</sup> | -       | 2V-3.6V       | 16              | 16 MHz, 32 kHz      | ✓                            | 16         | -                              | 3           | -                   | 9                  | 9             | 5             | 4 UART, 3 SPI, 3 I <sup>2</sup> C | ✓             | ✓                                 | ✓                     | ✓          | \$4.41 | BOR, LVD, POR, WDT | TQFP (PT)              |
| PIC24FJ256GA110 | R                                 | 85       | PIC24 | 256          | 16384        | AN1095 <sup>(1)</sup> | -       | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | ✓                            | 16         | -                              | 3           | -                   | 9                  | 9             | 5             | 4 UART, 3 SPI, 3 I <sup>2</sup> C | -             | ✓                                 | ✓                     | ✓          | \$4.45 | BOR, LVD, POR, WDT | TQFP (PT)              |
| PIC24FJ192GB110 | R                                 | 84       | PIC24 | 192          | 16384        | AN1095 <sup>(1)</sup> | -       | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | ✓                            | 16         | -                              | 3           | -                   | 9                  | 9             | 5             | 4 UART, 3 SPI, 3 I <sup>2</sup> C | ✓             | ✓                                 | ✓                     | ✓          | \$4.62 | BOR, LVD, POR, WDT | TQFP (PT)              |
| PIC24FJ128GB210 | R                                 | 84       | PIC24 | 128          | 98304        | AN1095 <sup>(1)</sup> | -       | 2.2V-3.6V     | 16              | 8 MHz, 32 kHz       | ✓                            | 24         | -                              | 3           | -                   | 9                  | 9             | 5             | 4 UART, 3 SPI, 3 I <sup>2</sup> C | ✓             | ✓                                 | ✓                     | ✓          | \$4.79 | BOR, LVD, POR, WDT | TQFP (PT), BGA121 (BG) |
| PIC24FJ128DA110 | R                                 | 84       | PIC24 | 128          | 24576        | AN1095 <sup>(1)</sup> | -       | 2.2V-3.6V     | 16              | 8 MHz, 32 kHz       | ✓                            | 24         | -                              | 3           | ✓                   | 9                  | 9             | 5             | 4 UART, 3 SPI, 3 I <sup>2</sup> C | ✓             | ✓                                 | ✓                     | ✓          | \$4.83 | BOR, LVD, POR, WDT | TQFP (PT), BGA121 (BG) |
| PIC24FJ256GB110 | R                                 | 84       | PIC24 | 256          | 16384        | AN1095 <sup>(1)</sup> | -       | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | ✓                            | 16         | -                              | 3           | -                   | 9                  | 9             | 5             | 4 UART, 3 SPI, 3 I <sup>2</sup> C | ✓             | ✓                                 | ✓                     | ✓          | \$4.83 | BOR, LVD, POR, WDT | TQFP (PT)              |
| PIC24FJ256GB210 | R                                 | 84       | PIC24 | 256          | 98304        | AN1095 <sup>(1)</sup> | -       | 2.2V-3.6V     | 16              | 8 MHz, 32 kHz       | ✓                            | 24         | -                              | 3           | -                   | 9                  | 9             | 5             | 4 UART, 3 SPI, 3 I <sup>2</sup> C | ✓             | ✓                                 | ✓                     | ✓          | \$5.14 | BOR, LVD, POR, WDT | TQFP (PT), BGA121 (BG) |
| PIC24FJ256DA110 | R                                 | 84       | PIC24 | 256          | 24576        | AN1095 <sup>(1)</sup> | -       | 2.2V-3.6V     | 16              | 8 MHz, 32 kHz       | ✓                            | 24         | -                              | 3           | ✓                   | 9                  | 9             | 5             | 4 UART, 3 SPI, 3 I <sup>2</sup> C | ✓             | ✓                                 | ✓                     | ✓          | \$5.18 | BOR, LVD, POR, WDT | TQFP (PT), BGA121 (BG) |
| PIC24FJ128DA210 | R                                 | 84       | PIC24 | 128          | 98304        | AN1095 <sup>(1)</sup> | -       | 2.2V-3.6V     | 16              | 8 MHz, 32 kHz       | ✓                            | 24         | -                              | 3           | ✓                   | 9                  | 9             | 5             | 4 UART, 3 SPI, 3 I <sup>2</sup> C | ✓             | ✓                                 | ✓                     | ✓          | \$5.25 | BOR, LVD, POR, WDT | TQFP (PT), BGA121 (BG) |
| PIC24FJ256DA210 | R                                 | 84       | PIC24 | 256          | 98304        | AN1095 <sup>(1)</sup> | -       | 2.2V-3.6V     | 16              | 8 MHz, 32 kHz       | ✓                            | 24         | -                              | 3           | ✓                   | 9                  | 9             | 5             | 4 UART, 3 SPI, 3 I <sup>2</sup> C | ✓             | ✓                                 | ✓                     | ✓          | \$5.60 | BOR, LVD, POR, WDT | TQFP (PT), BGA121 (BG) |
| PIC24FJ128GB108 | R                                 | 68       | PIC24 | 128          | 16384        | AN1095 <sup>(1)</sup> | -       | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | ✓                            | 16         | -                              | 3           | -                   | 9                  | 9             | 5             | 4 UART, 3 SPI, 3 I <sup>2</sup> C | ✓             | ✓                                 | ✓                     | ✓          | \$4.20 | BOR, LVD, POR, WDT | TQFP (PT)              |
| PIC24FJ256GA108 | R                                 | 69       | PIC24 | 256          | 16384        | AN1095 <sup>(1)</sup> | -       | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | ✓                            | 16         | -                              | 3           | -                   | 9                  | 9             | 5             | 4 UART, 3 SPI, 3 I <sup>2</sup> C | -             | ✓                                 | ✓                     | ✓          | \$4.24 | BOR, LVD, POR, WDT | TQFP (PT)              |
| PIC24FJ192GB108 | R                                 | 68       | PIC24 | 192          | 16384        | AN1095 <sup>(1)</sup> | -       | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | ✓                            | 16         | -                              | 3           | -                   | 9                  | 9             | 5             | 4 UART, 3 SPI, 3 I <sup>2</sup> C | ✓             | ✓                                 | ✓                     | ✓          | \$4.41 | BOR, LVD, POR, WDT | TQFP (PT)              |
| PIC24FJ256GB108 | R                                 | 68       | PIC24 | 256          | 16384        | AN1095 <sup>(1)</sup> | -       | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | ✓                            | 16         | -                              | 3           | -                   | 9                  | 9             | 5             | 4 UART, 3 SPI, 3 I <sup>2</sup> C | ✓             | ✓                                 | ✓                     | ✓          | \$4.62 | BOR, LVD, POR, WDT | TQFP (PT)              |
| PIC24FJ64GA010  | R                                 | 85       | PIC24 | 64           | 8192         | AN1095 <sup>(1)</sup> | -       | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | -                            | 16         | -                              | 2           | -                   | 5                  | 5             | 5             | 2 UART, 2 SPI, 2 I <sup>2</sup> C | -             | ✓                                 | ✓                     | -          | \$3.51 | BOR, POR, WDT      | TQFP (PT)              |
| PIC24FJ128GA010 | R                                 | 85       | PIC24 | 128          | 8192         | AN1095 <sup>(1)</sup> | -       | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | -                            | 16         | -                              | 2           | -                   | 5                  | 5             | 5             | 2 UART, 2 SPI, 2 I <sup>2</sup> C | -             | ✓                                 | ✓                     | -          | \$3.81 | BOR, POR, WDT      | TQFP (PT)              |
| PIC24FJ128GA110 | R                                 | 85       | PIC24 | 128          | 16384        | AN1095 <sup>(1)</sup> | -       | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | ✓                            | 16         | -                              | 3           | -                   | 9                  | 9             | 5             | 4 UART, 3 SPI, 3 I <sup>2</sup> C | -             | ✓                                 | ✓                     | ✓          | \$4.03 | BOR, LVD, POR, WDT | TQFP (PT)              |
| PIC24FJ64GB110  | R                                 | 84       | PIC24 | 64           | 16384        | AN1095 <sup>(1)</sup> | -       | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | ✓                            | 16         | -                              | 3           | -                   | 9                  | 9             | 5             | 4 UART, 3 SPI, 3 I <sup>2</sup> C | ✓             | ✓                                 | ✓                     | ✓          | \$4.12 | BOR, LVD, POR, WDT | TQFP (PT)              |
| PIC24FJ192GA110 | R                                 | 85       | PIC24 | 192          | 16384        | AN1095 <sup>(1)</sup> | -       | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | ✓                            | 16         | -                              | 3           | -                   | 9                  | 9             | 5             | 4 UART, 3 SPI, 3 I <sup>2</sup> C | -             | ✓                                 | ✓                     | ✓          | \$4.24 | BOR, LVD, POR, WDT | TQFP (PT)              |
| PIC24FJ128GB110 | R                                 | 84       | PIC24 | 128          | 16384        | AN1095 <sup>(1)</sup> | -       | 2V-3.6V       | 16              | 16 MHz, 32 kHz      | ✓                            | 16         | -                              | 3           | -                   | 9                  | 9             | 5             | 4 UART, 3 SPI, 3 I <sup>2</sup> C | ✓             | ✓                                 | ✓                     | ✓          | \$4.41 | BOR, LVD, POR, WDT | TQFP (PT)              |
| PIC24FJ256GA110 | R                                 | 85       | PIC24 | 256          | 16384        | AN1095 <sup>(1)</sup> | -       | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | ✓                            | 16         | -                              | 3           | -                   | 9                  | 9             | 5             | 4 UART, 3 SPI, 3 I <sup>2</sup> C | -             | ✓                                 | ✓                     | ✓          | \$4.45 | BOR, LVD, POR, WDT | TQFP (PT)              |
| PIC24FJ192GB110 | R                                 | 84       | PIC24 | 192          | 16384        | AN1095 <sup>(1)</sup> | -       | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | ✓                            | 16         | -                              | 3           | -                   | 9                  | 9             | 5             | 4 UART, 3 SPI, 3 I <sup>2</sup> C | ✓             | ✓                                 | ✓                     | ✓          | \$4.62 | BOR, LVD, POR, WDT | TQFP (PT)              |
| PIC24FJ128GB210 | R                                 | 84       | PIC24 | 128          | 98304        | AN1095 <sup>(1)</sup> | -       | 2.2V-3.6V     | 16              | 8 MHz, 32 kHz       | ✓                            | 24         | -                              | 3           | -                   | 9                  | 9             | 5             | 4 UART, 3 SPI, 3 I <sup>2</sup> C | ✓             | ✓                                 | ✓                     | ✓          | \$4.79 | BOR, LVD, POR, WDT | TQFP (PT), BGA121 (BG) |
| PIC24FJ128DA110 | R                                 | 84       | PIC24 | 128          | 24576        | AN1095 <sup>(1)</sup> | -       | 2.2V-3.6V     | 16              | 8 MHz, 32 kHz       | ✓                            | 24         | -                              | 3           | ✓                   | 9                  | 9             | 5             | 4 UART, 3 SPI, 3 I <sup>2</sup> C | ✓             | ✓                                 | ✓                     | ✓          | \$4.83 | BOR, LVD, POR, WDT | TQFP (PT), BGA121 (BG) |
| PIC24FJ256GB110 | R                                 | 84       | PIC24 | 256          | 16384        | AN1095 <sup>(1)</sup> | -       | 2V-3.6V       | 16              | 8 MHz, 32 kHz       | ✓                            | 16         | -                              | 3           | -                   | 9                  | 9             | 5             | 4 UART, 3 SPI, 3 I <sup>2</sup> C | ✓             | ✓                                 | ✓                     | ✓          | \$4.83 | BOR, LVD, POR, WDT | TQFP (PT)              |
| PIC24FJ256GB210 | R                                 | 84       | PIC24 | 256          | 98304        | AN1095 <sup>(1)</sup> | -       | 2.2V-3.6V     | 16              | 8 MHz, 32 kHz       | ✓                            | 24         | -                              | 3           | -                   | 9                  | 9             | 5             | 4 UART, 3 SPI, 3 I <sup>2</sup> C | ✓             | ✓                                 | ✓                     | ✓          | \$5.14 | BOR, LVD, POR, WDT | TQFP (PT), BGA121 (BG) |
| PIC24FJ256DA110 | R                                 | 84       | PIC24 | 256          | 24576        | AN1095 <sup>(1)</sup> | -       | 2.2V-3.6V     | 16              | 8 MHz, 32 kHz       | ✓                            | 24         | -                              | 3           | ✓                   | 9                  | 9             | 5             | 4 UART, 3 SPI, 3 I <sup>2</sup> C | ✓             | ✓                                 | ✓                     | ✓          | \$5.18 | BOR, LVD, POR, WDT | TQFP (PT), BGA121 (BG) |
| PIC24FJ128DA210 | R                                 | 84       | PIC24 | 128          | 98304        | AN1095 <sup>(1)</sup> | -       | 2.2V-3.6V     | 16              | 8 MHz, 32 kHz       | ✓                            | 24         | -                              | 3           | ✓                   | 9                  | 9             | 5             | 4 UART, 3 SPI, 3 I <sup>2</sup> C | ✓             | ✓                                 | ✓                     | ✓          | \$5.25 | BOR, LVD, POR, WDT | TQFP (PT), BGA121 (BG) |
| PIC24FJ256DA210 | R                                 | 84       | PIC24 | 256          | 98304        | AN1095 <sup>(1)</sup> | -       | 2.2V-3.6V     | 16              | 8 MHz, 32 kHz       | ✓                            | 24         | -                              | 3           | ✓                   | 9                  | 9             | 5             | 4 UART, 3 SPI, 3 I <sup>2</sup> C | ✓             | ✓                                 | ✓                     | ✓          | \$5.60 | BOR, LVD, POR, WDT | TQFP (PT), BGA121 (BG) |

\*Parts available with High Temperature options (150°C).

Note 1: See Application Note "AN1095 - Emulating Data EEPROM".

2: Two 16-bit timers can be concatenated to form a 32-bit timer.

Products sorted by pin count followed by pricing.

† - Pricing subject to change; please contact your Microchip representative for most current pricing.

○ - Software PLVD implemented via ADC.

# 16-bit PIC® Microcontrollers (PIC24H)

| Product           | Released (R)<br>Not Released (NR) | I/O Pins | Core  | Memory     |              |                       |                       | Voltage Range | Operating Speed |                     | Analog Sensing & Measurement |            |                             |             | Communication      |               |                             |                                   |                                   | 5-ku Pricing <sup>†</sup> | Monitors   | Packages (Designator) |     |          |                |                       |  |         |
|-------------------|-----------------------------------|----------|-------|------------|--------------|-----------------------|-----------------------|---------------|-----------------|---------------------|------------------------------|------------|-----------------------------|-------------|--------------------|---------------|-----------------------------|-----------------------------------|-----------------------------------|---------------------------|------------|-----------------------|-----|----------|----------------|-----------------------|--|---------|
|                   |                                   |          |       | Program KB | Data RAM (B) | EEPROM                | DMA #Ch               |               | Maximum MIPS    | Internal Oscillator | Charge Time Measurement Unit | 10-bit ADC | 10/12-bit ADC 1100/500 KSPS | Comparators | Output Compare/PWM | Input Capture | 16-bit Timer <sup>(2)</sup> | Digital Communication             | CAN                               |                           | FS USB OTG |                       | PMP | RTCC/CRC | PPS            | System Mgmt. Features |  |         |
| 18-Pin            | PIC24HJ12GP201                    | R        | 13    | PIC24      | 12           | 1024                  | AN1095 <sup>(1)</sup> | -             | 3V-3.6V         | 40                  | 7.37 MHz, 32 kHz             | -          | -                           | 6 ch        | -                  | 2             | 4                           | 3                                 | 1 UART, 1 SPI, 1 I <sup>2</sup> C | -                         | -          | -                     | -   | ✓        | \$2.09         | PBOR, POR, WDT        | PDIP (P), SOIC (SO)                        | 18-Pin  |
| 28-Pin            | PIC24HJ12GP202                    | R        | 21    | PIC24      | 12           | 1024                  | AN1095 <sup>(1)</sup> | -             | 3V-3.6V         | 40                  | 7.37 MHz, 32 kHz             | -          | -                           | 10 ch       | -                  | 2             | 4                           | 3                                 | 1 UART, 1 SPI, 1 I <sup>2</sup> C | -                         | -          | -                     | -   | ✓        | \$2.24         | PBOR, POR, WDT        | SOIC (SO), SPDIP (SP), QFN (MM), SSOP (SS) | 28-Pin  |
|                   | PIC24HJ32GP202*                   | R        | 21    | PIC24      | 32           | 2048                  | AN1095 <sup>(1)</sup> | -             | 3V-3.6V         | 40                  | 7.37 MHz, 32 kHz             | -          | -                           | 10 ch       | -                  | 2             | 4                           | 3                                 | 1 UART, 1 SPI, 1 I <sup>2</sup> C | -                         | -          | -                     | -   | ✓        | \$2.40         | PBOR, POR, WDT        | SOIC (SO), SPDIP (SP), QFN (MM)            |         |
|                   | PIC24HJ32GP302                    | R        | 21    | PIC24      | 32           | 4096                  | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V         | 40                  | 7.37 MHz, 32 kHz             | -          | -                           | 10 ch       | 2                  | 4             | 4                           | 5                                 | 2 UART, 2 SPI, 1 I <sup>2</sup> C | -                         | -          | ✓                     | ✓   | ✓        | \$2.76         | PBOR, POR, WDT        | SOIC (SO), SPDIP (SP), QFN (MM)            |         |
|                   | PIC24HJ64GP202                    | R        | 21    | PIC24      | 64           | 4096                  | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V         | 40                  | 7.37 MHz, 32 kHz             | -          | -                           | 10 ch       | 2                  | 4             | 4                           | 5                                 | 2 UART, 2 SPI, 1 I <sup>2</sup> C | -                         | -          | ✓                     | ✓   | ✓        | \$3.12         | PBOR, POR, WDT        | SOIC (SO), SPDIP (SP), QFN (MM)            |         |
|                   | PIC24HJ64GP502*                   | R        | 21    | PIC24      | 64           | 4096                  | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V         | 40                  | 7.37 MHz, 32 kHz             | -          | -                           | 10 ch       | 2                  | 4             | 4                           | 5                                 | 2 UART, 2 SPI, 1 I <sup>2</sup> C | 1                         | -          | ✓                     | ✓   | ✓        | \$3.33         | PBOR, POR, WDT        | SOIC (SO), SPDIP (SP), QFN (MM)            |         |
|                   | PIC24HJ128GP202                   | R        | 21    | PIC24      | 128          | 8192                  | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V         | 40                  | 7.37 MHz, 32 kHz             | -          | -                           | 10 ch       | 2                  | 4             | 4                           | 5                                 | 2 UART, 2 SPI, 1 I <sup>2</sup> C | -                         | -          | ✓                     | ✓   | ✓        | \$3.44         | PBOR, POR, WDT        | SOIC (SO), SPDIP (SP), QFN (MM)            |         |
|                   | PIC24HJ128GP502*                  | R        | 21    | PIC24      | 128          | 8192                  | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V         | 40                  | 7.37 MHz, 32 kHz             | -          | -                           | 10 ch       | 2                  | 4             | 4                           | 5                                 | 2 UART, 2 SPI, 1 I <sup>2</sup> C | 1                         | -          | ✓                     | ✓   | ✓        | \$3.65         | PBOR, POR, WDT        | SOIC (SO), SPDIP (SP), QFN (MM)            |         |
| 44-Pin            | PIC24HJ16GP304*                   | R        | 35    | PIC24      | 16           | 2048                  | AN1095 <sup>(1)</sup> | -             | 3V-3.6V         | 40                  | 7.37 MHz, 32 kHz             | -          | -                           | 13 ch       | -                  | 2             | 4                           | 3                                 | 1 UART, 1 SPI, 1 I <sup>2</sup> C | -                         | -          | -                     | -   | ✓        | \$2.42         | PBOR, POR, WDT        | TOFP (PT), QFN (ML)                        | 44-Pin  |
|                   | PIC24HJ32GP204*                   | R        | 35    | PIC24      | 32           | 2048                  | AN1095 <sup>(1)</sup> | -             | 3V-3.6V         | 40                  | 7.37 MHz, 32 kHz             | -          | -                           | 13 ch       | -                  | 2             | 4                           | 3                                 | 1 UART, 1 SPI, 1 I <sup>2</sup> C | -                         | -          | -                     | -   | ✓        | \$2.49         | PBOR, POR, WDT        | TOFP (PT), QFN (ML)                        |         |
|                   | PIC24HJ32GP304                    | R        | 35    | PIC24      | 32           | 4096                  | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V         | 40                  | 7.37 MHz, 32 kHz             | -          | -                           | 13 ch       | 2                  | 4             | 4                           | 5                                 | 2 UART, 2 SPI, 1 I <sup>2</sup> C | -                         | -          | ✓                     | ✓   | ✓        | \$2.82         | PBOR, POR, WDT        | TOFP (PT), QFN (ML)                        |         |
|                   | PIC24HJ64GP204                    | R        | 35    | PIC24      | 64           | 8192                  | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V         | 40                  | 7.37 MHz, 32 kHz             | -          | -                           | 13 ch       | 2                  | 4             | 4                           | 5                                 | 2 UART, 2 SPI, 1 I <sup>2</sup> C | -                         | -          | ✓                     | ✓   | ✓        | \$3.29         | PBOR, POR, WDT        | TOFP (PT), QFN (ML)                        |         |
|                   | PIC24HJ64GP504*                   | R        | 35    | PIC24      | 64           | 4096                  | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V         | 40                  | 7.37 MHz, 32 kHz             | -          | -                           | 13 ch       | 2                  | 4             | 4                           | 5                                 | 2 UART, 2 SPI, 1 I <sup>2</sup> C | 1                         | -          | ✓                     | ✓   | ✓        | \$3.58         | PBOR, POR, WDT        | TOFP (PT), QFN (ML)                        |         |
|                   | PIC24HJ128GP204                   | R        | 35    | PIC24      | 128          | 8192                  | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V         | 40                  | 7.37 MHz, 32 kHz             | -          | -                           | 13 ch       | 2                  | 4             | 4                           | 5                                 | 2 UART, 2 SPI, 1 I <sup>2</sup> C | -                         | -          | ✓                     | ✓   | ✓        | \$3.58         | PBOR, POR, WDT        | TOFP (PT), QFN (ML)                        |         |
| 64-Pin            | PIC24HJ128GP504*                  | R        | 35    | PIC24      | 128          | 8192                  | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V         | 40                  | 7.37 MHz, 32 kHz             | -          | -                           | 13 ch       | 2                  | 4             | 4                           | 5                                 | 2 UART, 2 SPI, 1 I <sup>2</sup> C | 1                         | -          | ✓                     | ✓   | ✓        | \$3.88         | PBOR, POR, WDT        | TOFP (PT), QFN (ML)                        | 64-Pin  |
|                   | PIC24HJ64GP206A                   | R        | 53    | PIC24      | 64           | 8192                  | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V         | 40                  | 7.37 MHz, 32 kHz             | -          | -                           | 18 ch       | -                  | 8             | 8                           | 9                                 | 2 UART, 2 SPI, 1 I <sup>2</sup> C | -                         | -          | -                     | -   | -        | \$3.39         | PBOR, POR, WDT        | TOFP (PT), QFN (MR)                        |         |
|                   | PIC24HJ64GP506A                   | R        | 53    | PIC24      | 64           | 8192                  | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V         | 40                  | 7.37 MHz, 32 kHz             | -          | -                           | 18 ch       | -                  | 8             | 8                           | 9                                 | 2 UART, 2 SPI, 2 I <sup>2</sup> C | 1                         | -          | -                     | -   | -        | \$3.60         | PBOR, POR, WDT        | TOFP (PT), QFN (MR)                        |         |
|                   | PIC24HJ128GP206A                  | R        | 53    | PIC24      | 128          | 8192                  | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V         | 40                  | 7.37 MHz, 32 kHz             | -          | -                           | 18 ch       | -                  | 8             | 8                           | 9                                 | 2 UART, 2 SPI, 1 I <sup>2</sup> C | -                         | -          | -                     | -   | -        | \$3.63         | PBOR, POR, WDT        | TOFP (PT), QFN (MR)                        |         |
|                   | PIC24HJ128GP306A                  | R        | 53    | PIC24      | 128          | 16384                 | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V         | 40                  | 7.37 MHz, 32 kHz             | -          | -                           | 18 ch       | -                  | 8             | 8                           | 9                                 | 2 UART, 2 SPI, 2 I <sup>2</sup> C | -                         | -          | -                     | -   | -        | \$3.79         | PBOR, POR, WDT        | TOFP (PT), QFN (MR)                        |         |
|                   | PIC24HJ128GP506A*                 | R        | 53    | PIC24      | 128          | 8192                  | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V         | 40                  | 7.37 MHz, 32 kHz             | -          | -                           | 18 ch       | -                  | 8             | 8                           | 9                                 | 2 UART, 2 SPI, 2 I <sup>2</sup> C | 1                         | -          | -                     | -   | -        | \$3.85         | PBOR, POR, WDT        | TOFP (PT), QFN (MR)                        |         |
| 100-Pin           | PIC24HJ256GP206A*                 | R        | 53    | PIC24      | 256          | 16384                 | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V         | 40                  | 7.37 MHz, 32 kHz             | -          | -                           | 18 ch       | -                  | 8             | 8                           | 9                                 | 2 UART, 2 SPI, 2 I <sup>2</sup> C | -                         | -          | -                     | -   | -        | \$4.05         | PBOR, POR, WDT        | TOFP (PT, PF)                              | 100-Pin |
|                   | PIC24HJ64GP210A                   | R        | 85    | PIC24      | 64           | 8192                  | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V         | 40                  | 7.37 MHz, 32 kHz             | -          | -                           | 32 ch       | -                  | 8             | 8                           | 9                                 | 2 UART, 2 SPI, 2 I <sup>2</sup> C | -                         | -          | -                     | -   | -        | \$3.88         | PBOR, POR, WDT        | TOFP (PT, PF)                              |         |
|                   | PIC24HJ64GP510A                   | R        | 85    | PIC24      | 64           | 8192                  | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V         | 40                  | 7.37 MHz, 32 kHz             | -          | -                           | 32 ch       | -                  | 8             | 8                           | 9                                 | 2 UART, 2 SPI, 2 I <sup>2</sup> C | 1                         | -          | -                     | -   | -        | \$4.06         | PBOR, POR, WDT        | TOFP (PT, PF)                              |         |
|                   | PIC24HJ128GP210A                  | R        | 85    | PIC24      | 128          | 8192                  | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V         | 40                  | 7.37 MHz, 32 kHz             | -          | -                           | 32 ch       | -                  | 8             | 8                           | 9                                 | 2 UART, 2 SPI, 2 I <sup>2</sup> C | -                         | -          | -                     | -   | -        | \$4.14         | PBOR, POR, WDT        | TOFP (PT, PF)                              |         |
|                   | PIC24HJ128GP310A                  | R        | 85    | PIC24      | 128          | 16384                 | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V         | 40                  | 7.37 MHz, 32 kHz             | -          | -                           | 32 ch       | -                  | 8             | 8                           | 9                                 | 2 UART, 2 SPI, 2 I <sup>2</sup> C | -                         | -          | -                     | -   | -        | \$4.26         | PBOR, POR, WDT        | TOFP (PT, PF)                              |         |
|                   | PIC24HJ128GP510A*                 | R        | 85    | PIC24      | 128          | 8192                  | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V         | 40                  | 7.37 MHz, 32 kHz             | -          | -                           | 32 ch       | -                  | 8             | 8                           | 9                                 | 2 UART, 2 SPI, 2 I <sup>2</sup> C | 1                         | -          | -                     | -   | -        | \$4.31         | PBOR, POR, WDT        | TOFP (PT, PF)                              |         |
|                   | PIC24HJ256GP210A                  | R        | 85    | PIC24      | 256          | 16384                 | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V         | 40                  | 7.37 MHz, 32 kHz             | -          | -                           | 32 ch       | -                  | 8             | 8                           | 9                                 | 2 UART, 2 SPI, 2 I <sup>2</sup> C | -                         | -          | -                     | -   | -        | \$4.63         | PBOR, POR, WDT        | TOFP (PT, PF)                              |         |
| PIC24HJ256GP610A* | R                                 | 85       | PIC24 | 256        | 16384        | AN1095 <sup>(1)</sup> | 8                     | 3V-3.6V       | 40              | 7.37 MHz, 32 kHz    | -                            | -          | 32 ch                       | -           | 8                  | 8             | 9                           | 2 UART, 2 SPI, 2 I <sup>2</sup> C | 2                                 | -                         | -          | -                     | -   | \$5.08   | PBOR, POR, WDT | TOFP (PT, PF)         |  |         |

\*Parts available with High Temperature options (150°C).

Note 1: See Application Note "AN1095 - Emulating Data EEPROM".

2: Two 16-bit timers can be concatenated to form a 32-bit timer.

## 32-bit PIC32 Microcontrollers

| Product         | Released (R)<br>Not Released (NR) | Core  | Memory                   |                  |                       | DMA Channels<br>General/Dedicated | Voltage Range | Operating Speed      |                        | Analog                   |             | IC/OC/PWM | Timers 16/32 bit | Communication |     |       |            |          | PMP | RTCC | 5 kV Pricing <sup>†</sup> | Monitors         | Packages (Designator) |                          |
|-----------------|-----------------------------------|-------|--------------------------|------------------|-----------------------|-----------------------------------|---------------|----------------------|------------------------|--------------------------|-------------|-----------|------------------|---------------|-----|-------|------------|----------|-----|------|---------------------------|------------------|-----------------------|--------------------------|
|                 |                                   |       | Flash KB +<br>Boot Flash | Data RAM<br>(KB) | EEPROM                |                                   |               | Maximum<br>Speed/MHz | Internal<br>Oscillator | ADC 10-bit<br>1000 kpsps | Comparators |           |                  | SPI           | IC™ | UARTs | FS USB OTG | Ethernet |     |      |                           | CAN              |                       | System Mgmt.<br>Features |
| PIC32MX320F032H | R                                 | PIC32 | 32 + 12                  | 8                | AN1095 <sup>(1)</sup> | 0/0                               | 2.3V-3.6V     | 40                   | 8 MHz, 32 kHz          | 16 ch                    | 2           | 5/5/5     | 5/1              | 2             | 2   | 2     | -          | -        | -   | ✓    | 1                         | \$3.09           | POR, BOR, LVD, WDT    | TOFP (PT), QFN (MR)      |
| PIC32MX320F064H | R                                 | PIC32 | 64 + 12                  | 16               | AN1095 <sup>(1)</sup> | 0/0                               | 2.3V-3.6V     | 40                   | 8 MHz, 32 kHz          | 16 ch                    | 2           | 5/5/5     | 5/1              | 2             | 2   | 2     | -          | -        | -   | ✓    | 1                         | \$3.36           | POR, BOR, LVD, WDT    | TOFP (PT), QFN (MR)      |
| PIC32MX420F032H | R                                 | PIC32 | 32 + 12                  | 8                | AN1095 <sup>(1)</sup> | 0/2                               | 2.3V-3.6V     | 40                   | 8 MHz, 32 kHz          | 16 ch                    | 2           | 5/5/5     | 5/1              | 2             | 2   | 2     | ✓          | -        | -   | ✓    | 1                         | \$3.36           | POR, BOR, LVD, WDT    | TOFP (PT), QFN (MR)      |
| PIC32MX320F064H | R                                 | PIC32 | 64 + 12                  | 16               | AN1095 <sup>(1)</sup> | 0/0                               | 2.3V-3.6V     | 80                   | 8 MHz, 32 kHz          | 16 ch                    | 2           | 5/5/5     | 5/1              | 2             | 2   | 2     | -          | -        | -   | ✓    | 1                         | \$3.51           | POR, BOR, LVD, WDT    | TOFP (PT), QFN (MR)      |
| PIC32MX320F128H | R                                 | PIC32 | 128 + 12                 | 16               | AN1095 <sup>(1)</sup> | 0/0                               | 2.3V-3.6V     | 80                   | 8 MHz, 32 kHz          | 16 ch                    | 2           | 5/5/5     | 5/1              | 2             | 2   | 2     | -          | -        | -   | ✓    | 1                         | \$3.75           | POR, BOR, LVD, WDT    | TOFP (PT), QFN (MR)      |
| PIC32MX340F128H | R                                 | PIC32 | 128 + 12                 | 32               | AN1095 <sup>(1)</sup> | 4/0                               | 2.3V-3.6V     | 80                   | 8 MHz, 32 kHz          | 16 ch                    | 2           | 5/5/5     | 5/1              | 2             | 2   | 2     | -          | -        | -   | ✓    | 1                         | \$3.96           | POR, BOR, LVD, WDT    | TOFP (PT), QFN (MR)      |
| PIC32MX440F128H | R                                 | PIC32 | 128 + 12                 | 32               | AN1095 <sup>(1)</sup> | 4/2                               | 2.3V-3.6V     | 80                   | 8 MHz, 32 kHz          | 16 ch                    | 2           | 5/5/5     | 5/1              | 2             | 2   | 2     | ✓          | -        | -   | ✓    | 1                         | \$4.23           | POR, BOR, LVD, WDT    | TOFP (PT), QFN (MR)      |
| PIC32MX340F256H | R                                 | PIC32 | 256 + 12                 | 32               | AN1095 <sup>(1)</sup> | 4/0                               | 2.3V-3.6V     | 80                   | 8 MHz, 32 kHz          | 16 ch                    | 2           | 5/5/5     | 5/1              | 2             | 2   | 2     | -          | -        | -   | ✓    | 1                         | \$4.31           | POR, BOR, LVD, WDT    | TOFP (PT), QFN (MR)      |
| PIC32MX440F256H | R                                 | PIC32 | 256 + 12                 | 32               | AN1095 <sup>(1)</sup> | 4/2                               | 2.3V-3.6V     | 80                   | 8 MHz, 32 kHz          | 16 ch                    | 2           | 5/5/5     | 5/1              | 2             | 2   | 2     | ✓          | -        | -   | ✓    | 1                         | \$4.58           | POR, BOR, LVD, WDT    | TOFP (PT), QFN (MR)      |
| PIC32MX340F512H | R                                 | PIC32 | 512 + 12                 | 32               | AN1095 <sup>(1)</sup> | 4/0                               | 2.3V-3.6V     | 80                   | 8 MHz, 32 kHz          | 16 ch                    | 2           | 5/5/5     | 5/1              | 2             | 2   | 2     | -          | -        | -   | ✓    | 1                         | \$4.77           | POR, BOR, LVD, WDT    | TOFP (PT), QFN (MR)      |
| PIC32MX575F256H | R                                 | PIC32 | 256 + 12                 | 64               | AN1095 <sup>(1)</sup> | 8/4                               | 2.3V-3.6V     | 80                   | 8 MHz, 32 kHz          | 16 ch                    | 2           | 5/5/5     | 5/1              | 3             | 4   | 6     | ✓          | -        | 1   | ✓    | 1                         | \$4.96           | POR, BOR, LVD, WDT    | TOFP (PT), QFN (MR)      |
| PIC32MX440F512H | R                                 | PIC32 | 512 + 12                 | 32               | AN1095 <sup>(1)</sup> | 4/2                               | 2.3V-3.6V     | 80                   | 8 MHz, 32 kHz          | 16 ch                    | 2           | 5/5/5     | 5/1              | 2             | 2   | 2     | ✓          | -        | -   | ✓    | 1                         | \$5.04           | POR, BOR, LVD, WDT    | TOFP (PT), QFN (MR)      |
| PIC32MX675F256H | R                                 | PIC32 | 256 + 12                 | 64               | AN1095 <sup>(1)</sup> | 8/4                               | 2.3V-3.6V     | 80                   | 8 MHz, 32 kHz          | 16 ch                    | 2           | 5/5/5     | 5/1              | 3             | 4   | 6     | ✓          | 10/100   | -   | ✓    | 1                         | \$5.19           | POR, BOR, LVD, WDT    | TOFP (PT), QFN (MR)      |
| PIC32MX575F512H | R                                 | PIC32 | 512 + 12                 | 64               | AN1095 <sup>(1)</sup> | 8/4                               | 2.3V-3.6V     | 80                   | 8 MHz, 32 kHz          | 16 ch                    | 2           | 5/5/5     | 5/1              | 3             | 4   | 6     | ✓          | -        | 1   | ✓    | 1                         | \$5.42           | POR, BOR, LVD, WDT    | TOFP (PT), QFN (MR)      |
| PIC32MX775F256H | R                                 | PIC32 | 256 + 12                 | 64               | AN1095 <sup>(1)</sup> | 8/8                               | 2.3V-3.6V     | 80                   | 8 MHz, 32 kHz          | 16 ch                    | 2           | 5/5/5     | 5/1              | 3             | 4   | 6     | ✓          | 10/100   | 2   | ✓    | 1                         | \$5.42           | POR, BOR, LVD, WDT    | TOFP (PT), QFN (MR)      |
| PIC32MX675F512H | R                                 | PIC32 | 512 + 12                 | 64               | AN1095 <sup>(1)</sup> | 8/4                               | 2.3V-3.6V     | 80                   | 8 MHz, 32 kHz          | 16 ch                    | 2           | 5/5/5     | 5/1              | 3             | 4   | 6     | ✓          | 10/100   | -   | ✓    | 1                         | \$5.66           | POR, BOR, LVD, WDT    | TOFP (PT), QFN (MR)      |
| PIC32MX775F512H | R                                 | PIC32 | 512 + 12                 | 64               | AN1095 <sup>(1)</sup> | 8/8                               | 2.3V-3.6V     | 80                   | 8 MHz, 32 kHz          | 16 ch                    | 2           | 5/5/5     | 5/1              | 3             | 4   | 6     | ✓          | 10/100   | 2   | ✓    | 1                         | \$5.88           | POR, BOR, LVD, WDT    | TOFP (PT), QFN (MR)      |
| PIC32MX695F512H | R                                 | PIC32 | 512 + 12                 | 128              | AN1095 <sup>(1)</sup> | 8/4                               | 2.3V-3.6V     | 80                   | 8 MHz, 32 kHz          | 16 ch                    | 2           | 5/5/5     | 5/1              | 3             | 4   | 6     | ✓          | 10/100   | -   | ✓    | 1                         | \$6.13           | POR, BOR, LVD, WDT    | TOFP (PT), QFN (MR)      |
| PIC32MX795F512H | R                                 | PIC32 | 512 + 12                 | 128              | AN1095 <sup>(1)</sup> | 8/8                               | 2.3V-3.6V     | 80                   | 8 MHz, 32 kHz          | 16 ch                    | 2           | 5/5/5     | 5/1              | 3             | 4   | 6     | ✓          | 10/100   | 2   | ✓    | 1                         | \$6.36           | POR, BOR, LVD, WDT    | TOFP (PT), QFN (MR)      |
| PIC32MX534F064H | NR                                | PIC32 | 64 + 12                  | 16               | AN1095 <sup>(1)</sup> | 4/4                               | 2.3V-3.6V     | 80                   | 8 MHz, 32 kHz          | 16 ch                    | 2           | 5/5/5     | 5/1              | 3             | 4   | 6     | ✓          | -        | 1   | ✓    | 1                         | Call for Pricing | POR, BOR, LVD, WDT    | TOFP (PT), QFN (MR)      |
| PIC32MX564F064H | NR                                | PIC32 | 64 + 12                  | 32               | AN1095 <sup>(1)</sup> | 4/4                               | 2.3V-3.6V     | 80                   | 8 MHz, 32 kHz          | 16 ch                    | 2           | 5/5/5     | 5/1              | 3             | 4   | 6     | ✓          | -        | 1   | ✓    | 1                         | Call for Pricing | POR, BOR, LVD, WDT    | TOFP (PT), QFN (MR)      |
| PIC32MX564F128H | NR                                | PIC32 | 128 + 12                 | 32               | AN1095 <sup>(1)</sup> | 4/4                               | 2.3V-3.6V     | 80                   | 8 MHz, 32 kHz          | 16 ch                    | 2           | 5/5/5     | 5/1              | 3             | 4   | 6     | ✓          | -        | 1   | ✓    | 1                         | Call for Pricing | POR, BOR, LVD, WDT    | TOFP (PT), QFN (MR)      |
| PIC32MX664F064H | NR                                | PIC32 | 64 + 12                  | 32               | AN1095 <sup>(1)</sup> | 4/4                               | 2.3V-3.6V     | 80                   | 8 MHz, 32 kHz          | 16 ch                    | 2           | 5/5/5     | 5/1              | 3             | 4   | 6     | ✓          | 10/100   | -   | ✓    | 1                         | Call for Pricing | POR, BOR, LVD, WDT    | TOFP (PT), QFN (MR)      |
| PIC32MX664F128H | NR                                | PIC32 | 128 + 12                 | 32               | AN1095 <sup>(1)</sup> | 4/4                               | 2.3V-3.6V     | 80                   | 8 MHz, 32 kHz          | 16 ch                    | 2           | 5/5/5     | 5/1              | 3             | 4   | 6     | ✓          | 10/100   | -   | ✓    | 1                         | Call for Pricing | POR, BOR, LVD, WDT    | TOFP (PT), QFN (MR)      |
| PIC32MX764F128H | NR                                | PIC32 | 128 + 12                 | 32               | AN1095 <sup>(1)</sup> | 4/6                               | 2.3V-3.6V     | 80                   | 8 MHz, 32 kHz          | 16 ch                    | 2           | 5/5/5     | 5/1              | 3             | 4   | 6     | ✓          | 10/100   | 1   | ✓    | 1                         | Call for Pricing | POR, BOR, LVD, WDT    | TOFP (PT), QFN (MR)      |
| PIC32MX320F128L | R                                 | PIC32 | 128 + 12                 | 16               | AN1095 <sup>(1)</sup> | 0/0                               | 2.3V-3.6V     | 80                   | 8 MHz, 32 kHz          | 16 ch                    | 2           | 5/5/5     | 5/1              | 2             | 2   | 2     | -          | -        | -   | ✓    | 1                         | \$4.44           | POR, BOR, LVD, WDT    | TOFP (PT), XBGA (BG)     |
| PIC32MX340F128L | R                                 | PIC32 | 128 + 12                 | 32               | AN1095 <sup>(1)</sup> | 4/0                               | 2.3V-3.6V     | 80                   | 8 MHz, 32 kHz          | 16 ch                    | 2           | 5/5/5     | 5/1              | 2             | 2   | 2     | -          | -        | -   | ✓    | 1                         | \$4.44           | POR, BOR, LVD, WDT    | TOFP (PT), XBGA (BG)     |
| PIC32MX440F128L | R                                 | PIC32 | 128 + 12                 | 32               | AN1095 <sup>(1)</sup> | 4/2                               | 2.3V-3.6V     | 80                   | 8 MHz, 32 kHz          | 16 ch                    | 2           | 5/5/5     | 5/1              | 2             | 2   | 2     | ✓          | -        | -   | ✓    | 1                         | \$4.70           | POR, BOR, LVD, WDT    | TOFP (PT), XBGA (BG)     |
| PIC32MX360F256L | R                                 | PIC32 | 256 + 12                 | 32               | AN1095 <sup>(1)</sup> | 4/0                               | 2.3V-3.6V     | 80                   | 8 MHz, 32 kHz          | 16 ch                    | 2           | 5/5/5     | 5/1              | 2             | 2   | 2     | -          | -        | -   | ✓    | 1                         | \$4.79           | POR, BOR, LVD, WDT    | TOFP (PT), XBGA (BG)     |
| PIC32MX460F256L | R                                 | PIC32 | 256 + 12                 | 32               | AN1095 <sup>(1)</sup> | 4/2                               | 2.3V-3.6V     | 80                   | 8 MHz, 32 kHz          | 16 ch                    | 2           | 5/5/5     | 5/1              | 2             | 2   | 2     | ✓          | -        | -   | ✓    | 1                         | \$5.05           | POR, BOR, LVD, WDT    | TOFP (PT), XBGA (BG)     |
| PIC32MX360F512L | R                                 | PIC32 | 512 + 12                 | 32               | AN1095 <sup>(1)</sup> | 4/0                               | 2.3V-3.6V     | 80                   | 8 MHz, 32 kHz          | 16 ch                    | 2           | 5/5/5     | 5/1              | 2             | 2   | 2     | -          | -        | -   | ✓    | 1                         | \$5.25           | POR, BOR, LVD, WDT    | TOFP (PT), XBGA (BG)     |
| PIC32MX575F256L | R                                 | PIC32 | 256 + 12                 | 64               | AN1095 <sup>(1)</sup> | 8/4                               | 2.3V-3.6V     | 80                   | 8 MHz, 32 kHz          | 16 ch                    | 2           | 5/5/5     | 5/1              | 4             | 5   | 6     | ✓          | -        | 1   | ✓    | 1                         | \$5.43           | POR, BOR, LVD, WDT    | TOFP (PT, PF), XBGA (BG) |
| PIC32MX460F512L | R                                 | PIC32 | 512 + 12                 | 32               | AN1095 <sup>(1)</sup> | 4/2                               | 2.3V-3.6V     | 80                   | 8 MHz, 32 kHz          | 16 ch                    | 2           | 5/5/5     | 5/1              | 2             | 2   | 2     | ✓          | -        | -   | ✓    | 1                         | \$5.52           | POR, BOR, LVD, WDT    | TOFP (PT), XBGA (BG)     |
| PIC32MX675F256L | R                                 | PIC32 | 256 + 12                 | 64               | AN1095 <sup>(1)</sup> | 8/4                               | 2.3V-3.6V     | 80                   | 8 MHz, 32 kHz          | 16 ch                    | 2           | 5/5/5     | 5/1              | 4             | 5   | 6     | ✓          | 10/100   | -   | ✓    | 1                         | \$5.67           | POR, BOR, LVD, WDT    | TOFP (PT, PF), XBGA (BG) |
| PIC32MX575F512L | R                                 | PIC32 | 512 + 12                 | 64               | AN1095 <sup>(1)</sup> | 8/4                               | 2.3V-3.6V     | 80                   | 8 MHz, 32 kHz          | 16 ch                    | 2           | 5/5/5     | 5/1              | 4             | 5   | 6     | ✓          | -        | 1   | ✓    | 1                         | \$5.89           | POR, BOR, LVD, WDT    | TOFP (PT, PF), XBGA (BG) |
| PIC32MX775F256L | R                                 | PIC32 | 256 + 12                 | 64               | AN1095 <sup>(1)</sup> | 8/8                               | 2.3V-3.6V     | 80                   | 8 MHz, 32 kHz          | 16 ch                    | 2           | 5/5/5     | 5/1              | 4             | 5   | 6     | ✓          | 10/100   | 2   | ✓    | 1                         | \$5.89           | POR, BOR, LVD, WDT    | TOFP (PT, PF), XBGA (BG) |

Note 1: See Application Note "AN1095 - Emulating Data EEPROM".

Products sorted by pin count followed by pricing.

† - Pricing subject to change; please contact your Microchip representative for most current pricing.

## 32-bit PIC32 Microcontrollers

| Product         | Released (R)<br>Not Released (NR) | Core  | Memory                   |                  |                       | DMA Channels<br>General/Dedicated | Voltage Range | Operating Speed      |                        | Analog                  |             | IC/OC/PWM | Timers 16/32-bit | Communication |     |       |            |          | PMP | RTCC | 5-ku Pricing <sup>†</sup> | Monitors         | Packages (Designator) |                          |
|-----------------|-----------------------------------|-------|--------------------------|------------------|-----------------------|-----------------------------------|---------------|----------------------|------------------------|-------------------------|-------------|-----------|------------------|---------------|-----|-------|------------|----------|-----|------|---------------------------|------------------|-----------------------|--------------------------|
|                 |                                   |       | Flash KB +<br>Boot Flash | Data RAM<br>(KB) | EEPROM                |                                   |               | Maximum<br>Speed MHz | Internal<br>Oscillator | ADC 10-bit<br>1000 ksps | Comparators |           |                  | SPI           | IC™ | UARTs | FS USB OTG | Ethernet |     |      |                           | CAN              |                       | System Mgmt.<br>Features |
| PIC32MX675F512L | R                                 | PIC32 | 512 + 12                 | 64               | AN1095 <sup>(1)</sup> | 8/4                               | 2.3V-3.6V     | 80                   | 8 MHz, 32 kHz          | 16 ch                   | 2           | 5/5/5     | 5/1              | 4             | 5   | 6     | ✓          | 10/100   | -   | ✓    | 1                         | \$6.13           | POR, BOR, LVD, WDT    | TQFP (PT, PF), XBGA (BG) |
| PIC32MX775F512L | R                                 | PIC32 | 512 + 12                 | 64               | AN1095 <sup>(1)</sup> | 8/8                               | 2.3V-3.6V     | 80                   | 8 MHz, 32 kHz          | 16 ch                   | 2           | 5/5/5     | 5/1              | 4             | 5   | 6     | ✓          | 10/100   | 2   | ✓    | 1                         | \$6.36           | POR, BOR, LVD, WDT    | TQFP (PT, PF), XBGA (BG) |
| PIC32MX695F512L | R                                 | PIC32 | 512 + 12                 | 128              | AN1095 <sup>(1)</sup> | 8/4                               | 2.3V-3.6V     | 80                   | 8 MHz, 32 kHz          | 16 ch                   | 2           | 5/5/5     | 5/1              | 4             | 5   | 6     | ✓          | 10/100   | -   | ✓    | 1                         | \$6.61           | POR, BOR, LVD, WDT    | TQFP (PT, PF), XBGA (BG) |
| PIC32MX795F512L | R                                 | PIC32 | 512 + 12                 | 128              | AN1095 <sup>(1)</sup> | 8/8                               | 2.3V-3.6V     | 80                   | 8 MHz, 32 kHz          | 16 ch                   | 2           | 5/5/5     | 5/1              | 4             | 5   | 6     | ✓          | 10/100   | 2   | ✓    | 1                         | \$6.83           | POR, BOR, LVD, WDT    | TQFP (PT, PF), XBGA (BG) |
| PIC32MX534F064L | NR                                | PIC32 | 64+12                    | 16               | AN1095 <sup>(1)</sup> | 4/4                               | 2.3V-3.6V     | 80                   | 8 MHz, 32 kHz          | 16 ch                   | 2           | 5/5/5     | 5/1              | 4             | 5   | 6     | ✓          | -        | 1   | ✓    | 1                         | Call for Pricing | POR, BOR, LVD, WDT    | TQFP (PT, PF), XBGA (BG) |
| PIC32MX564F064L | NR                                | PIC32 | 64+12                    | 32               | AN1095 <sup>(1)</sup> | 4/4                               | 2.3V-3.6V     | 80                   | 8 MHz, 32 kHz          | 16 ch                   | 2           | 5/5/5     | 5/1              | 4             | 5   | 6     | ✓          | -        | 1   | ✓    | 1                         | Call for Pricing | POR, BOR, LVD, WDT    | TQFP (PT, PF), XBGA (BG) |
| PIC32MX564F128L | NR                                | PIC32 | 128+12                   | 32               | AN1095 <sup>(1)</sup> | 4/4                               | 2.3V-3.6V     | 80                   | 8 MHz, 32 kHz          | 16 ch                   | 2           | 5/5/5     | 5/1              | 4             | 5   | 6     | ✓          | -        | 1   | ✓    | 1                         | Call for Pricing | POR, BOR, LVD, WDT    | TQFP (PT, PF), XBGA (BG) |
| PIC32MX664F064L | NR                                | PIC32 | 64+12                    | 32               | AN1095 <sup>(1)</sup> | 4/4                               | 2.3V-3.6V     | 80                   | 8 MHz, 32 kHz          | 16 ch                   | 2           | 5/5/5     | 5/1              | 4             | 5   | 6     | ✓          | 10/100   | -   | ✓    | 1                         | Call for Pricing | POR, BOR, LVD, WDT    | TQFP (PT, PF), XBGA (BG) |
| PIC32MX664F128L | NR                                | PIC32 | 128+12                   | 32               | AN1095 <sup>(1)</sup> | 4/4                               | 2.3V-3.6V     | 80                   | 8 MHz, 32 kHz          | 16 ch                   | 2           | 5/5/5     | 5/1              | 4             | 5   | 6     | ✓          | 10/100   | -   | ✓    | 1                         | Call for Pricing | POR, BOR, LVD, WDT    | TQFP (PT, PF), XBGA (BG) |
| PIC32MX764F128L | NR                                | PIC32 | 128+12                   | 32               | AN1095 <sup>(1)</sup> | 4/6                               | 2.3V-3.6V     | 80                   | 8 MHz, 32 kHz          | 16 ch                   | 2           | 5/5/5     | 5/1              | 4             | 5   | 6     | ✓          | 10/100   | 1   | ✓    | 1                         | Call for Pricing | POR, BOR, LVD, WDT    | TQFP (PT, PF), XBGA (BG) |

Note 1: See Application Note "AN1095 - Emulating Data EEPROM".

## dsPIC30F DSC Families

| Product       | Released (R)<br>Not Released (NR) | I/O Pins | Core  | Memory     |              |        | Voltage Range | Operating Speed      |                     | Analog                    |     |             | Output Compare/PWM | Input Capture | Motor Control PWM Ch | Power Supply PWM Ch | QEI | Codec (FS, AC97) | 16-bit Timer <sup>(1)</sup>       | Communication                     |        | 5-ku Pricing <sup>†</sup> | Monitors                        | Packages (Designator)                     |        |
|---------------|-----------------------------------|----------|-------|------------|--------------|--------|---------------|----------------------|---------------------|---------------------------|-----|-------------|--------------------|---------------|----------------------|---------------------|-----|------------------|-----------------------------------|-----------------------------------|--------|---------------------------|---------------------------------|---|--------|
|               |                                   |          |       | Program KB | Data RAM (B) | EEPROM |               | Maximum Speed<br>MPS | Internal Oscillator | ADC                       | DAC | Comparators |                    |               |                      |                     |     |                  |                                   | Digital<br>Communication          | CAN    |                           | System Mgmt.<br>Features        |   |        |
| dsPIC30F3012  | R                                 | 12       | dsPIC | 24         | 2048         | 1024   | 2.5V-5.5V     | 30                   | 7.37 MHz, 32 kHz    | 8 x 12-bit @ 200 (ksps)   | -   | -           | 2                  | 2             | -                    | -                   | -   | 3                | 1 UART, 1 SPI, 1 I <sup>2</sup> C | -                                 | \$2.68 | PBOR, LVD, POR, WDT       | PDIP (P), SOIC (SO), QFN (ML)   | 18-Pin                                    |        |
| dsPIC30F2010  | R                                 | 20       | dsPIC | 12         | 512          | 1024   | 2.5V-5.5V     | 30                   | 7.37 MHz, 32 kHz    | 6 x 10-bit @ 1000 (ksps)  | -   | -           | 2                  | 4             | 6                    | -                   | 1   | -                | 3                                 | 1 UART, 1 SPI, 1 I <sup>2</sup> C | -      | \$2.43                    | PBOR, LVD, POR, WDT             | SOIC (SO), SPDIP (SP), QFN (ML), PDIP (P) | 28-Pin |
| dsPIC30F3013  | R                                 | 20       | dsPIC | 24         | 2048         | 1024   | 2.5V-5.5V     | 30                   | 7.37 MHz, 32 kHz    | 10 x 12-bit @ 200 (ksps)  | -   | -           | 2                  | 2             | -                    | -                   | -   | 3                | 2 UART, 1 SPI, 1 I <sup>2</sup> C | -                                 | \$2.77 | PBOR, LVD, POR, WDT       | SOIC (SO), SPDIP (SP), QFN (ML) | 28-Pin                                    |        |
| dsPIC30F4012  | R                                 | 20       | dsPIC | 48         | 2048         | 1024   | 2.5V-5.5V     | 30                   | 7.37 MHz, 32 kHz    | 6 x 10-bit @ 1000 (ksps)  | -   | -           | 2                  | 4             | 6                    | -                   | 1   | -                | 5                                 | 1 UART, 1 SPI, 1 I <sup>2</sup> C | 1      | \$3.71                    | PBOR, LVD, POR, WDT             | SOIC (SO), SPDIP (SP), QFN (ML)           | 40-Pin |
| dsPIC30F4013  | R                                 | 30       | dsPIC | 48         | 2048         | 1024   | 2.5V-5.5V     | 30                   | 7.37 MHz, 32 kHz    | 13 x 12-bit @ 200 (ksps)  | -   | -           | 4                  | 4             | -                    | -                   | 1   | 5                | 2 UART, 1 SPI, 1 I <sup>2</sup> C | 1                                 | \$3.91 | PBOR, LVD, POR, WDT       | PDIP (P), TQFP (PT), QFN (ML)   | 40-Pin                                    |        |
| dsPIC30F4011  | R                                 | 30       | dsPIC | 48         | 2048         | 1024   | 2.5V-5.5V     | 30                   | 7.37 MHz, 32 kHz    | 9 x 10-bit @ 1000 (ksps)  | -   | -           | 4                  | 4             | 6                    | -                   | 1   | -                | 5                                 | 2 UART, 1 SPI, 1 I <sup>2</sup> C | 1      | \$4.02                    | PBOR, LVD, POR, WDT             | PDIP (P), TQFP (PT), QFN (ML)             | 40-Pin |
| dsPIC30F5015  | R                                 | 52       | dsPIC | 66         | 2048         | 1024   | 2.5V-5.5V     | 30                   | 7.37 MHz, 32 kHz    | 16 x 10-bit @ 1000 (ksps) | -   | -           | 4                  | 4             | 8                    | -                   | 1   | -                | 5                                 | 1 UART, 2 SPI, 1 I <sup>2</sup> C | 1      | \$5.08                    | PBOR, LVD, POR, WDT             | TQFP (PT)                                 | 64-Pin |
| dsPIC30F6011A | R                                 | 52       | dsPIC | 132        | 6144         | 2048   | 2.5V-5.5V     | 30                   | 7.37 MHz, 32 kHz    | 16 x 12-bit @ 200 (ksps)  | -   | -           | 8                  | 8             | -                    | -                   | -   | 5                | 2 UART, 2 SPI, 1 I <sup>2</sup> C | 2                                 | \$6.89 | PBOR, LVD, POR, WDT       | TQFP (PT)                       | 64-Pin                                    |        |
| dsPIC30F5016  | R                                 | 68       | dsPIC | 66         | 2048         | 1024   | 2.5V-5.5V     | 30                   | 7.37 MHz, 32 kHz    | 16 x 10-bit @ 1000 (ksps) | -   | -           | 4                  | 4             | 8                    | -                   | 1   | -                | 5                                 | 1 UART, 2 SPI, 1 I <sup>2</sup> C | 1      | \$5.59                    | PBOR, LVD, POR, WDT             | TQFP (PF)                                 | 80-Pin |
| dsPIC30F6014A | R                                 | 68       | dsPIC | 144        | 8192         | 4096   | 2.5V-5.5V     | 30                   | 7.37 MHz, 32 kHz    | 16 x 12-bit @ 200 (ksps)  | -   | -           | 8                  | 8             | -                    | -                   | 1   | 5                | 2 UART, 2 SPI, 1 I <sup>2</sup> C | 2                                 | \$7.25 | PBOR, LVD, POR, WDT       | TQFP (PF)                       | 80-Pin                                    |        |
| dsPIC30F6010A | R                                 | 68       | dsPIC | 144        | 8192         | 4096   | 2.5V-5.5V     | 30                   | 7.37 MHz, 32 kHz    | 16 x 10-bit @ 1000 (ksps) | -   | -           | 8                  | 8             | 8                    | -                   | 1   | -                | 5                                 | 2 UART, 2 SPI, 1 I <sup>2</sup> C | 2      | \$7.36                    | PBOR, LVD, POR, WDT             | TQFP (PF)                                 | 80-Pin |

Note 1: Two 16-bit timers can be concatenated to form a 32-bit timer.

Products sorted by pin count followed by pricing.

† - Pricing subject to change; please contact your Microchip representative for most current pricing.

# dsPIC33 DSC General Purpose Family

| Product | Released (R)<br>Not Released (NR) | IO Pins | Core | Memory     |              |        |                       | Voltage Range | Operating Speed       |                     | Analog                         |             |                         | Output Compare/PWM | Input Capture | Codec (FS, AC97) | 16-bit Timer <sup>2)</sup> | Communication            |                                   |     | 5-ku Pricing <sup>1)</sup> | Monitors | Packages (Designator) |          |                |   |
|---------|-----------------------------------|---------|------|------------|--------------|--------|-----------------------|---------------|-----------------------|---------------------|--------------------------------|-------------|-------------------------|--------------------|---------------|------------------|----------------------------|--------------------------|-----------------------------------|-----|----------------------------|----------|-----------------------|----------|----------------|---|
|         |                                   |         |      | Program KB | Data RAM (B) | EEPROM | DMA #Ch               |               | Maximum Speed<br>MIPS | Internal Oscillator | ADC 10/12-bit<br>1100/500 ksps | DAC         | Comparators             |                    |               |                  |                            | Digital<br>Communication | CAN                               | PMP |                            |          |                       | RTCC/CRC | PPS            | System Mgmt.<br>Features                  |
| 28-Pin  | dsPIC33FJ12GP201                  | R       | 13   | dsPIC*     | 12           | 1024   | AN1095 <sup>(1)</sup> | -             | 3V-3.6V               | 40                  | 7.37 MHz, 32 kHz               | 6 ch        | -                       | -                  | 2             | 4                | -                          | 3                        | 1 UART, 1 SPI, 1 I <sup>2</sup> C | -   | -                          | -        | ✓                     | \$2.09   | PBOR, POR, WDT | PDIP (P), SOIC (SO)                       |
|         | dsPIC33FJ12GP202                  | R       | 21   | dsPIC      | 12           | 1024   | AN1095 <sup>(1)</sup> | -             | 3V-3.6V               | 40                  | 7.37 MHz, 32 kHz               | 10 ch       | -                       | -                  | 2             | 4                | -                          | 3                        | 1 UART, 1 SPI, 1 I <sup>2</sup> C | -   | -                          | -        | ✓                     | \$2.24   | PBOR, POR, WDT | QFN (MM), SOIC(SO), SPDIP (SP), SSOP (SS) |
|         | dsPIC33FJ32GP202                  | R       | 21   | dsPIC      | 32           | 2048   | AN1095 <sup>(1)</sup> | -             | 3V-3.6V               | 40                  | 7.37 MHz, 32 kHz               | 10 ch       | -                       | -                  | 2             | 4                | -                          | 3                        | 1 UART, 1 SPI, 1 I <sup>2</sup> C | -   | -                          | -        | ✓                     | \$2.56   | PBOR, POR, WDT | QFN (MM), SOIC (SO), SPDIP (SP)           |
|         | dsPIC33FJ32GP302                  | R       | 21   | dsPIC      | 32           | 4096   | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V               | 40                  | 7.37 MHz, 32 kHz               | 10 ch       | -                       | 2                  | 4             | 4                | -                          | 5                        | 2 UART, 2 SPI, 1 I <sup>2</sup> C | -   | -                          | -        | ✓                     | \$2.76   | PBOR, POR, WDT | QFN (MM), SOIC (SO), SPDIP (SP)           |
|         | dsPIC33FJ64GP202                  | R       | 21   | dsPIC      | 64           | 8192   | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V               | 40                  | 7.37 MHz, 32 kHz               | 10 ch       | -                       | 2                  | 4             | 4                | 1                          | 5                        | 2 UART, 2 SPI, 1 I <sup>2</sup> C | -   | ✓                          | -        | ✓                     | \$3.12   | PBOR, POR, WDT | QFN (MM), SOIC (SO), SPDIP (SP)           |
|         | dsPIC33FJ64GP802*                 | R       | 21   | dsPIC      | 64           | 16384  | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V               | 40                  | 7.37 MHz, 32 kHz               | 10 ch       | 2 x 16-bit @ 100 (ksps) | 2                  | 4             | 4                | 1                          | 5                        | 2 UART, 2 SPI, 1 I <sup>2</sup> C | 1   | ✓                          | ✓        | ✓                     | \$3.42   | PBOR, POR, WDT | QFN (MM), SOIC (SO), SPDIP (SP)           |
|         | dsPIC33FJ128GP202                 | R       | 21   | dsPIC      | 128          | 8192   | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V               | 40                  | 7.37 MHz, 32 kHz               | 10 ch       | -                       | 2                  | 4             | 4                | 1                          | 5                        | 2 UART, 2 SPI, 1 I <sup>2</sup> C | -   | ✓                          | ✓        | ✓                     | \$3.44   | PBOR, POR, WDT | QFN (MM), SOIC (SO), SPDIP (SP)           |
| 44-Pin  | dsPIC33FJ128GP802                 | R       | 21   | dsPIC      | 128          | 16384  | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V               | 40                  | 7.37 MHz, 32 kHz               | 10 ch       | 2 x 16-bit @ 100 (ksps) | 2                  | 4             | 4                | 1                          | 5                        | 2 UART, 2 SPI, 1 I <sup>2</sup> C | 1   | ✓                          | ✓        | ✓                     | \$3.72   | PBOR, POR, WDT | QFN (MM), SOIC (SO), SPDIP (SP)           |
|         | dsPIC33FJ16GP304                  | R       | 35   | dsPIC      | 16           | 2048   | AN1095 <sup>(1)</sup> | -             | 3V-3.6V               | 40                  | 7.37 MHz, 32 kHz               | 13 ch       | -                       | -                  | 2             | 4                | -                          | 3                        | 1 UART, 1 SPI, 1 I <sup>2</sup> C | -   | -                          | -        | ✓                     | \$2.58   | BOR, POR, WDT  | QFN (ML), TOFP (PT)                       |
|         | dsPIC33FJ32GP204*                 | R       | 35   | dsPIC      | 32           | 2048   | AN1095 <sup>(1)</sup> | -             | 3V-3.6V               | 40                  | 7.37 MHz, 32 kHz               | 13 ch       | -                       | -                  | 2             | 4                | -                          | 3                        | 1 UART, 1 SPI, 1 I <sup>2</sup> C | -   | -                          | -        | ✓                     | \$2.66   | PBOR, POR, WDT | QFN (ML), TOFP (PT)                       |
|         | dsPIC33FJ32GP304                  | R       | 35   | dsPIC      | 32           | 4096   | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V               | 40                  | 7.37 MHz, 32 kHz               | 13 ch       | -                       | 2                  | 4             | 4                | 1                          | 5                        | 2 UART, 2 SPI, 1 I <sup>2</sup> C | -   | -                          | -        | ✓                     | \$3.01   | PBOR, POR, WDT | QFN (ML), TOFP (PT)                       |
|         | dsPIC33FJ64GP204                  | R       | 35   | dsPIC      | 64           | 8192   | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V               | 40                  | 7.37 MHz, 32 kHz               | 13 ch       | -                       | 2                  | 4             | 4                | 1                          | 5                        | 2 UART, 2 SPI, 1 I <sup>2</sup> C | -   | ✓                          | -        | ✓                     | \$3.29   | PBOR, POR, WDT | QFN (ML), TOFP (PT)                       |
|         | dsPIC33FJ128GP204                 | R       | 35   | dsPIC      | 128          | 8192   | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V               | 40                  | 7.37 MHz, 32 kHz               | 13 ch       | -                       | 2                  | 4             | 4                | 1                          | 5                        | 2 UART, 2 SPI, 1 I <sup>2</sup> C | -   | ✓                          | ✓        | ✓                     | \$3.58   | PBOR, POR, WDT | QFN (ML), TOFP (PT)                       |
|         | dsPIC33FJ64GP804*                 | R       | 35   | dsPIC      | 64           | 16384  | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V               | 40                  | 7.37 MHz, 32 kHz               | 13 ch       | 2 x 16-bit @ 100 (ksps) | 2                  | 4             | 4                | 1                          | 5                        | 2 UART, 2 SPI, 1 I <sup>2</sup> C | 1   | ✓                          | ✓        | ✓                     | \$3.65   | PBOR, POR, WDT | QFN (ML), TOFP (PT)                       |
| 64-Pin  | dsPIC33FJ128GP804*                | R       | 35   | dsPIC      | 128          | 16384  | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V               | 40                  | 7.37 MHz, 32 kHz               | 13 ch       | 2 x 16-bit @ 100 (ksps) | 2                  | 4             | 4                | 1                          | 5                        | 2 UART, 2 SPI, 1 I <sup>2</sup> C | 1   | ✓                          | ✓        | ✓                     | \$3.96   | PBOR, POR, WDT | QFN (ML), TOFP (PT)                       |
|         | dsPIC33FJ64GP206A                 | R       | 53   | dsPIC      | 64           | 8192   | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V               | 40                  | 7.37 MHz, 32 kHz               | 18 ch       | -                       | -                  | 8             | 8                | 1                          | 9                        | 2 UART, 2 SPI, 1 I <sup>2</sup> C | -   | -                          | -        | -                     | \$3.39   | PBOR, POR, WDT | QFN (MR), TOFP (PT)                       |
|         | dsPIC33FJ64GP306A                 | R       | 53   | dsPIC      | 64           | 16384  | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V               | 40                  | 7.37 MHz, 32 kHz               | 18 ch       | -                       | -                  | 8             | 8                | 1                          | 9                        | 2 UART, 2 SPI, 2 I <sup>2</sup> C | -   | -                          | -        | -                     | \$3.53   | PBOR, POR, WDT | QFN (MR), TOFP (PT)                       |
|         | dsPIC33FJ128GP206A                | R       | 53   | dsPIC      | 128          | 8192   | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V               | 40                  | 7.37 MHz, 32 kHz               | 18 ch       | -                       | -                  | 8             | 8                | 1                          | 9                        | 2 UART, 2 SPI, 1 I <sup>2</sup> C | -   | -                          | -        | -                     | \$3.63   | PBOR, POR, WDT | QFN (MR), TOFP (PT)                       |
|         | dsPIC33FJ128GP306A                | R       | 53   | dsPIC      | 128          | 16384  | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V               | 40                  | 7.37 MHz, 32 kHz               | 18 ch       | -                       | -                  | 8             | 8                | 1                          | 9                        | 2 UART, 2 SPI, 2 I <sup>2</sup> C | -   | -                          | -        | -                     | \$3.79   | PBOR, POR, WDT | QFN (MR), TOFP (PT)                       |
|         | dsPIC33FJ64GP706A                 | R       | 53   | dsPIC      | 64           | 16384  | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V               | 40                  | 7.37 MHz, 32 kHz               | 18 ch 2 ADC | -                       | -                  | 8             | 8                | 1                          | 9                        | 2 UART, 2 SPI, 2 I <sup>2</sup> C | 2   | -                          | -        | -                     | \$4.14   | PBOR, POR, WDT | QFN (MR), TOFP (PT)                       |
|         | dsPIC33FJ256GP506A*               | R       | 53   | dsPIC      | 256          | 16384  | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V               | 40                  | 7.37 MHz, 32 kHz               | 18 ch       | -                       | -                  | 8             | 8                | 1                          | 9                        | 2 UART, 2 SPI, 2 I <sup>2</sup> C | 1   | -                          | -        | -                     | \$4.20   | PBOR, POR, WDT | QFN (MR), TOFP (PT)                       |
| 80-Pin  | dsPIC33FJ128GP706A*               | R       | 53   | dsPIC      | 128          | 16384  | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V               | 40                  | 7.37 MHz, 32 kHz               | 18 ch 2 ADC | -                       | -                  | 8             | 8                | 1                          | 9                        | 2 UART, 2 SPI, 2 I <sup>2</sup> C | 2   | -                          | -        | -                     | \$4.40   | PBOR, POR, WDT | QFN (MR), TOFP (PT)                       |
|         | dsPIC33FJ64GP708A                 | R       | 69   | dsPIC      | 64           | 16384  | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V               | 40                  | 7.37 MHz, 32 kHz               | 24 ch 2 ADC | -                       | -                  | 8             | 8                | 1                          | 9                        | 2 UART, 2 SPI, 2 I <sup>2</sup> C | 2   | -                          | -        | -                     | \$4.44   | PBOR, POR, WDT | TOFP (PT)                                 |
|         | dsPIC33FJ128GP708A                | R       | 69   | dsPIC      | 128          | 16384  | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V               | 40                  | 7.37 MHz, 32 kHz               | 24 ch 2 ADC | -                       | -                  | 8             | 8                | 1                          | 9                        | 2 UART, 2 SPI, 2 I <sup>2</sup> C | 2   | -                          | -        | -                     | \$4.69   | PBOR, POR, WDT | TOFP (PT)                                 |
|         | dsPIC33FJ64GP310A                 | R       | 85   | dsPIC      | 64           | 16384  | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V               | 40                  | 7.37 MHz, 32 kHz               | 32 ch       | -                       | -                  | 8             | 8                | 1                          | 9                        | 2 UART, 2 SPI, 2 I <sup>2</sup> C | -   | -                          | -        | -                     | \$3.99   | PBOR, POR, WDT | TOFP (PT, PF)                             |
|         | dsPIC33FJ128GP310A                | R       | 85   | dsPIC      | 128          | 16384  | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V               | 40                  | 7.37 MHz, 32 kHz               | 32 ch       | -                       | -                  | 8             | 8                | 1                          | 9                        | 2 UART, 2 SPI, 2 I <sup>2</sup> C | -   | -                          | -        | -                     | \$4.26   | PBOR, POR, WDT | TOFP (PT, PF)                             |
|         | dsPIC33FJ64GP710A                 | R       | 85   | dsPIC      | 64           | 16384  | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V               | 40                  | 7.37 MHz, 32 kHz               | 32 ch 2 ADC | -                       | -                  | 8             | 8                | 1                          | 9                        | 2 UART, 2 SPI, 2 I <sup>2</sup> C | 2   | -                          | -        | -                     | \$4.61   | PBOR, POR, WDT | TOFP (PT, PF)                             |
|         | dsPIC33FJ256GP510A                | R       | 85   | dsPIC      | 256          | 16384  | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V               | 40                  | 7.37 MHz, 32 kHz               | 32 ch       | -                       | -                  | 8             | 8                | 1                          | 9                        | 2 UART, 2 SPI, 2 I <sup>2</sup> C | 1   | -                          | -        | -                     | \$4.66   | PBOR, POR, WDT | TOFP (PT, PF)                             |
| 100-Pin | dsPIC33FJ128GP710A*               | R       | 85   | dsPIC      | 128          | 16384  | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V               | 40                  | 7.37 MHz, 32 kHz               | 32 ch 2 ADC | -                       | -                  | 8             | 8                | 1                          | 9                        | 2 UART, 2 SPI, 2 I <sup>2</sup> C | 2   | -                          | -        | -                     | \$4.86   | PBOR, POR, WDT | TOFP (PT, PF)                             |
|         | dsPIC33FJ256GP710A*               | R       | 85   | dsPIC      | 256          | 30720  | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V               | 40                  | 7.37 MHz, 32 kHz               | 32 ch 2 ADC | -                       | -                  | 8             | 8                | 1                          | 9                        | 2 UART, 2 SPI, 2 I <sup>2</sup> C | 2   | -                          | -        | -                     | \$5.32   | PBOR, POR, WDT | TOFP (PT, PF)                             |

\*Parts available with High Temperature options (150°C).

Note 1: See Application Note "AN1095 - Emulating Data EEPROM".

2: Two 16-bit timers can be concatenated to form a 32-bit timer.

Products sorted by pin count followed by pricing.

1 - Pricing subject to change; please contact your Microchip representative for most current pricing.

# dsPIC33 DSC Motor Control and Power Conversion Family

| Product | Released (R)<br>Not Released (NR) | IO Pins | Core | Memory     |              |        |                       | Voltage Range | Operating Speed    |                     | Analog                      |             |                         | Input Capture | Motor Control PWM Ch | OEI | 16-bit Timer <sup>(2)</sup> | Communication      |                       |                                   |     | 5-ku Pricing <sup>†</sup> | Monitors | Packages (Designator) |          |                |   |         |
|---------|-----------------------------------|---------|------|------------|--------------|--------|-----------------------|---------------|--------------------|---------------------|-----------------------------|-------------|-------------------------|---------------|----------------------|-----|-----------------------------|--------------------|-----------------------|-----------------------------------|-----|---------------------------|----------|-----------------------|----------|----------------|---|---------|
|         |                                   |         |      | Program KB | Data RAM (B) | EEPROM | DMA #Ch               |               | Maximum Speed MIPS | Internal Oscillator | ADC 10/12-bit 1100/500 ksps | DAC         | Comparators             |               |                      |     |                             | Output Compare/PWM | Digital Communication | CAN                               | PMP |                           |          |                       | RTCC/CRC | PPS            | System Mgmt. Features                     |         |
| 20-Pin  | dsPIC33FJ12MC201                  | R       | 15   | dsPIC*     | 12           | 1024   | AN1095 <sup>(1)</sup> | -             | 3V-3.6V            | 40                  | 7.37 MHz, 32 kHz            | 4 ch        | -                       | -             | 2                    | 4   | 8                           | 1                  | 3                     | 1 UART, 1 SPI, 1 I <sup>2</sup> C | -   | -                         | -        | ✓                     | \$2.09   | PBOR, POR, WDT | PDIP (P), SOIC (SO), SSOP (SS)            | 20-Pin  |
| 28-Pin  | dsPIC33FJ12MC202                  | R       | 21   | dsPIC      | 12           | 1024   | AN1095 <sup>(1)</sup> | -             | 3V-3.6V            | 40                  | 7.37 MHz, 32 kHz            | 6 ch        | -                       | -             | 2                    | 4   | 6+2                         | 1                  | 3                     | 1 UART, 1 SPI, 1 I <sup>2</sup> C | -   | -                         | -        | ✓                     | \$2.31   | PBOR, POR, WDT | QFN (MM), SOIC(SO), SPDIP (SP), SSOP (SS) | 28-Pin  |
|         | dsPIC33FJ32MC202*                 | R       | 21   | dsPIC      | 32           | 2048   | AN1095 <sup>(1)</sup> | -             | 3V-3.6V            | 40                  | 7.37 MHz, 32 kHz            | 6 ch        | -                       | -             | 2                    | 4   | 6+2                         | 1                  | 3                     | 1 UART, 1 SPI, 1 I <sup>2</sup> C | -   | -                         | -        | ✓                     | \$2.63   | PBOR, POR, WDT | QFN (MM), SOIC (SO), SPDIP (SP)           |         |
|         | dsPIC33FJ32MC302                  | R       | 21   | dsPIC      | 32           | 4096   | AN1095 <sup>(1)</sup> | -             | 3V-3.6V            | 40                  | 7.37 MHz, 32 kHz            | 6 ch        | -                       | -             | 2                    | 4   | 6+2                         | 2                  | 5                     | 2 UART, 2 SPI, 1 I <sup>2</sup> C | -   | ✓                         | -        | ✓                     | \$2.87   | PBOR, POR, WDT | QFN (MM), SOIC (SO), SPDIP (SP)           |         |
|         | dsPIC33FJ64MC202                  | R       | 21   | dsPIC      | 64           | 8192   | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V            | 40                  | 7.37 MHz, 32 kHz            | 6 ch        | -                       | -             | 2                    | 4   | 6+2                         | 2                  | 5                     | 2 UART, 2 SPI, 1 I <sup>2</sup> C | -   | ✓                         | ✓        | ✓                     | \$3.29   | PBOR, POR, WDT | QFN (MM), SOIC (SO), SPDIP (SP)           |         |
|         | dsPIC33FJ64MC802*                 | R       | 21   | dsPIC      | 64           | 16384  | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V            | 40                  | 7.37 MHz, 32 kHz            | 6 ch        | -                       | -             | 2                    | 4   | 6+2                         | 2                  | 5                     | 2 UART, 2 SPI, 1 I <sup>2</sup> C | 1   | ✓                         | ✓        | ✓                     | \$3.50   | PBOR, POR, WDT | QFN (MM), SOIC (SO), SPDIP (SP)           |         |
|         | dsPIC33FJ128MC202                 | R       | 21   | dsPIC      | 128          | 8192   | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V            | 40                  | 7.37 MHz, 32 kHz            | 6 ch        | -                       | -             | 2                    | 4   | 6+2                         | 2                  | 5                     | 2 UART, 2 SPI, 1 I <sup>2</sup> C | -   | ✓                         | ✓        | ✓                     | \$3.57   | PBOR, POR, WDT | QFN (MM), SOIC (SO), SPDIP (SP)           |         |
| 44-Pin  | dsPIC33FJ128MC802*                | R       | 21   | dsPIC      | 128          | 16384  | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V            | 40                  | 7.37 MHz, 32 kHz            | 6 ch        | -                       | -             | 2                    | 4   | 6+2                         | 2                  | 5                     | 2 UART, 2 SPI, 1 I <sup>2</sup> C | 1   | ✓                         | ✓        | ✓                     | \$3.82   | PBOR, POR, WDT | QFN (MM), SOIC (SO), SPDIP (SP)           | 44-Pin  |
|         | dsPIC33FJ16MC304*                 | R       | 35   | dsPIC      | 16           | 2048   | AN1095 <sup>(1)</sup> | -             | 3V-3.6V            | 40                  | 7.37 MHz, 32 kHz            | 9 ch        | -                       | -             | 2                    | 4   | 6+2                         | 1                  | 3                     | 1 UART, 1 SPI, 1 I <sup>2</sup> C | -   | -                         | -        | ✓                     | \$2.65   | BOR, POR, WDT  | QFN (ML), TOFP (PT)                       |         |
|         | dsPIC33FJ32MC204*                 | R       | 35   | dsPIC      | 32           | 2048   | AN1095 <sup>(1)</sup> | -             | 3V-3.6V            | 40                  | 7.37 MHz, 32 kHz            | 9 ch        | -                       | -             | 2                    | 4   | 6+2                         | 1                  | 3                     | 1 UART, 1 SPI, 1 I <sup>2</sup> C | -   | -                         | -        | ✓                     | \$2.76   | PBOR, POR, WDT | QFN (ML), TOFP (PT)                       |         |
|         | dsPIC33FJ32MC304                  | R       | 35   | dsPIC      | 32           | 4096   | AN1095 <sup>(1)</sup> | -             | 3V-3.6V            | 40                  | 7.37 MHz, 32 kHz            | 9 ch        | -                       | -             | 2                    | 4   | 6+2                         | 2                  | 5                     | 2 UART, 2 SPI, 1 I <sup>2</sup> C | -   | ✓                         | -        | ✓                     | \$3.12   | PBOR, POR, WDT | QFN (ML), TOFP (PT)                       |         |
|         | dsPIC33FJ64MC204                  | R       | 35   | dsPIC      | 64           | 8192   | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V            | 40                  | 7.37 MHz, 32 kHz            | 9 ch        | -                       | -             | 2                    | 4   | 6+2                         | 2                  | 5                     | 2 UART, 2 SPI, 1 I <sup>2</sup> C | -   | ✓                         | ✓        | ✓                     | \$3.39   | PBOR, POR, WDT | QFN (ML), TOFP (PT)                       |         |
|         | dsPIC33FJ128MC204                 | R       | 35   | dsPIC      | 128          | 8192   | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V            | 40                  | 7.37 MHz, 32 kHz            | 9 ch        | -                       | -             | 2                    | 4   | 8                           | 2                  | 5                     | 2 UART, 2 SPI, 1 I <sup>2</sup> C | -   | ✓                         | ✓        | ✓                     | \$3.68   | PBOR, POR, WDT | QFN (ML), TOFP (PT)                       |         |
|         | dsPIC33FJ64MC804*                 | R       | 35   | dsPIC      | 64           | 16384  | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V            | 40                  | 7.37 MHz, 32 kHz            | 9 ch        | 2 x 16-bit @ 100 (ksps) | 2             | 4                    | 4   | 6+2                         | 2                  | 5                     | 2 UART, 2 SPI, 1 I <sup>2</sup> C | 1   | ✓                         | ✓        | ✓                     | \$3.89   | PBOR, POR, WDT | QFN (ML), TOFP (PT)                       |         |
| 64-Pin  | dsPIC33FJ128MC804*                | R       | 35   | dsPIC      | 128          | 16384  | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V            | 40                  | 7.37 MHz, 32 kHz            | 9 ch        | 2 x 16-bit @ 100 (ksps) | 2             | 4                    | 4   | 8                           | 2                  | 5                     | 2 UART, 2 SPI, 1 I <sup>2</sup> C | 1   | ✓                         | ✓        | ✓                     | \$4.23   | PBOR, POR, WDT | QFN (ML), TOFP (PT)                       | 64-Pin  |
|         | dsPIC33FJ64MC506A*                | R       | 53   | dsPIC      | 64           | 8192   | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V            | 40                  | 7.37 MHz, 32 kHz            | 16 ch       | -                       | -             | 8                    | 8   | 8                           | 1                  | 9                     | 2 UART, 2 SPI, 2 I <sup>2</sup> C | 1   | -                         | -        | -                     | \$3.84   | PBOR, POR, WDT | QFN (MR), TOFP (PT)                       |         |
|         | dsPIC33FJ128MC506A*               | R       | 53   | dsPIC      | 128          | 8192   | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V            | 40                  | 7.37 MHz, 32 kHz            | 16 ch       | -                       | -             | 8                    | 8   | 8                           | 1                  | 9                     | 2 UART, 2 SPI, 2 I <sup>2</sup> C | 1   | -                         | -        | -                     | \$4.10   | PBOR, POR, WDT | QFN (MR), TOFP (PT)                       |         |
|         | dsPIC33FJ64MC706A                 | R       | 53   | dsPIC      | 64           | 16384  | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V            | 40                  | 7.37 MHz, 32 kHz            | 16 ch 2 ADC | -                       | -             | 8                    | 8   | 8                           | 1                  | 9                     | 2 UART, 2 SPI, 2 I <sup>2</sup> C | 1   | -                         | -        | -                     | \$4.21   | PBOR, POR, WDT | QFN (MR), TOFP (PT)                       |         |
| 80-Pin  | dsPIC33FJ128MC706A*               | R       | 53   | dsPIC      | 128          | 16384  | AN1095 <sup>(1)</sup> | 8             | 3V-3.3V            | 40                  | 7.37 MHz, 32 kHz            | 16 ch 2 ADC | -                       | -             | 8                    | 8   | 8                           | 1                  | 9                     | 2 UART, 2 SPI, 2 I <sup>2</sup> C | 1   | -                         | -        | -                     | \$4.49   | PBOR, POR, WDT | QFN (MR), TOFP (PT)                       | 80-Pin  |
|         | dsPIC33FJ64MC508A                 | R       | 69   | dsPIC      | 64           | 8192   | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V            | 40                  | 7.37 MHz, 32 kHz            | 16 ch       | -                       | -             | 8                    | 8   | 8                           | 1                  | 9                     | 2 UART, 2 SPI, 2 I <sup>2</sup> C | 1   | -                         | -        | -                     | \$4.14   | PBOR, POR, WDT | TOFP (PT)                                 |         |
| 100-Pin | dsPIC33FJ128MC708A                | R       | 69   | dsPIC      | 128          | 16384  | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V            | 40                  | 7.37 MHz, 32 kHz            | 18 ch 2 ADC | -                       | -             | 8                    | 8   | 8                           | 1                  | 9                     | 2 UART, 2 SPI, 2 I <sup>2</sup> C | 2   | -                         | -        | -                     | \$5.00   | PBOR, POR, WDT | TOFP (PT)                                 | 100-Pin |
|         | dsPIC33FJ64MC510A                 | R       | 85   | dsPIC      | 64           | 8192   | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V            | 40                  | 7.37 MHz, 32 kHz            | 24 ch       | -                       | -             | 8                    | 8   | 8                           | 1                  | 9                     | 2 UART, 2 SPI, 2 I <sup>2</sup> C | 1   | -                         | -        | -                     | \$4.33   | PBOR, POR, WDT | TOFP (PT, PF)                             |         |
|         | dsPIC33FJ128MC510A                | R       | 85   | dsPIC      | 128          | 8192   | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V            | 40                  | 7.37 MHz, 32 kHz            | 24 ch       | -                       | -             | 8                    | 8   | 8                           | 1                  | 9                     | 2 UART, 2 SPI, 2 I <sup>2</sup> C | 1   | -                         | -        | -                     | \$4.59   | PBOR, POR, WDT | TOFP (PT, PF)                             |         |
|         | dsPIC33FJ64MC710A                 | R       | 85   | dsPIC      | 64           | 16384  | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V            | 40                  | 7.37 MHz, 32 kHz            | 24 ch 2 ADC | -                       | -             | 8                    | 8   | 8                           | 1                  | 9                     | 2 UART, 2 SPI, 2 I <sup>2</sup> C | 2   | -                         | -        | -                     | \$4.91   | PBOR, POR, WDT | TOFP (PT, PF)                             |         |
|         | dsPIC33FJ256MC510A                | R       | 85   | dsPIC      | 256          | 16384  | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V            | 40                  | 7.37 MHz, 32 kHz            | 16 ch       | -                       | -             | 8                    | 8   | 8                           | 1                  | 9                     | 2 UART, 2 SPI, 2 I <sup>2</sup> C | 1   | -                         | -        | -                     | \$4.97   | PBOR, POR, WDT | TOFP (PT, PF)                             |         |
|         | dsPIC33FJ128MC710A*               | R       | 85   | dsPIC      | 128          | 16384  | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V            | 40                  | 7.37 MHz, 32 kHz            | 24 ch 2 ADC | -                       | -             | 8                    | 8   | 8                           | 1                  | 9                     | 2 UART, 2 SPI, 2 I <sup>2</sup> C | 2   | -                         | -        | -                     | \$5.18   | PBOR, POR, WDT | TOFP (PT, PF)                             |         |
|         | dsPIC33FJ256MC710A*               | R       | 85   | dsPIC      | 256          | 30720  | AN1095 <sup>(1)</sup> | 8             | 3V-3.6V            | 40                  | 7.37 MHz, 32 kHz            | 24 ch 2 ADC | -                       | -             | 8                    | 8   | 8                           | 1                  | 9                     | 2 UART, 2 SPI, 2 I <sup>2</sup> C | 2   | -                         | -        | -                     | \$5.67   | PBOR, POR, WDT | TOFP (PT, PF)                             |         |

\*Parts available with High Temperature options (150°C).

Note 1: See Application Note "AN1095 - Emulating Data EEPROM".

2: Two 16-bit timers can be concatenated to form a 32-bit timer.

Products sorted by pin count followed by pricing.

† - Pricing subject to change; please contact your Microchip representative for most current pricing.



# dsPIC33 DSC SMPS and Digital Power Conversion Family

| Product | Released (R)<br>Not Released (NR) | I/O Pins | Core | Memory     |              |        |                       | Voltage Range | Operating Speed    |                     | Analog                    |               |             | Output Compare/PWM | Input Capture | Power-Supply PWM-Ch <sup>(1)</sup> | DEI | 16-bit Timer <sup>(2)</sup> | Communication         |                                   |     |      | 5-ku Pricing <sup>†</sup> | Monitors<br>System Mgmt. Features | Packages (Designator) |               |                                 |         |
|---------|-----------------------------------|----------|------|------------|--------------|--------|-----------------------|---------------|--------------------|---------------------|---------------------------|---------------|-------------|--------------------|---------------|------------------------------------|-----|-----------------------------|-----------------------|-----------------------------------|-----|------|---------------------------|-----------------------------------|-----------------------|---------------|---------------------------------|---------|
|         |                                   |          |      | Program KB | Data RAM (B) | EEPROM | DMA #Ch               |               | Maximum Speed MIPS | Internal Oscillator | ADC 10-bit 2000/4000 kSps | DAC           | Comparators |                    |               |                                    |     |                             | Digital Communication | CAN                               | PMP | RTCC |                           |                                   |                       | PPS           |                                 |         |
| 18-Pin  | dsPIC33FJ06GS101                  | R        | 13   | dsPIC*     | 6            | 256    | AN1095 <sup>(1)</sup> | -             | 3V-3.6V            | 40                  | 7.37 MHz, 32 kHz          | 6 ch          | -           | -                  | 1             | -                                  | 4   | -                           | 2                     | 1 UART, 1 SPI, 1 I <sup>2</sup> C | -   | -    | -                         | ✓                                 | \$1.96                | BOR, POR, WDT | SOIC (SO)                       | 18-Pin  |
| 28-Pin  | dsPIC33FJ06GS102                  | R        | 21   | dsPIC      | 6            | 256    | AN1095 <sup>(1)</sup> | -             | 3V-3.6V            | 40                  | 7.37 MHz, 32 kHz          | 6 ch          | -           | -                  | 1             | -                                  | 4   | -                           | 2                     | 1 UART, 1 SPI, 1 I <sup>2</sup> C | -   | -    | -                         | ✓                                 | \$2.20                | BOR, POR, WDT | QFN (MM), SOIC(SO), SPDIP (SP)  | 28-Pin  |
|         | dsPIC33FJ06GS202                  | R        | 21   | dsPIC      | 6            | 1024   | AN1095 <sup>(1)</sup> | -             | 3V-3.6V            | 40                  | 7.37 MHz, 32 kHz          | 6 ch          | 2 x 10-bit  | 2                  | 1             | 1                                  | 4   | -                           | 2                     | 1 UART, 1 SPI, 1 I <sup>2</sup> C | -   | -    | -                         | ✓                                 | \$2.38                | BOR, POR, WDT | QFN (MM), SOIC(SO), SPDIP (SP)  |         |
|         | dsPIC33FJ16GS402                  | R        | 21   | dsPIC      | 16           | 2048   | AN1095 <sup>(1)</sup> | -             | 3V-3.6V            | 40                  | 7.37 MHz, 32 kHz          | 8 ch          | -           | -                  | 2             | 2                                  | 6   | -                           | 3                     | 1 UART, 1 SPI, 1 I <sup>2</sup> C | -   | -    | -                         | ✓                                 | \$2.52                | BOR, POR, WDT | QFN (MM), SOIC (SO), SPDIP (SP) |         |
|         | dsPIC33FJ16GS502                  | R        | 21   | dsPIC      | 16           | 2048   | AN1095 <sup>(1)</sup> | -             | 3V-3.6V            | 40                  | 7.37 MHz, 32 kHz          | 8 ch, 2 ADC*  | 4 x 10-bit  | 4                  | 2             | 2                                  | 8   | -                           | 3                     | 1 UART, 1 SPI, 1 I <sup>2</sup> C | -   | -    | -                         | ✓                                 | \$3.04                | BOR, POR, WDT | QFN (MM), SOIC (SO), SPDIP (SP) |         |
| 44-Pin  | dsPIC33FJ16GS404                  | R        | 35   | dsPIC      | 16           | 2048   | AN1095 <sup>(1)</sup> | -             | 3V-3.6V            | 40                  | 7.37 MHz, 32 kHz          | 8 ch          | -           | -                  | 2             | 2                                  | 6   | -                           | 3                     | 1 UART, 1 SPI, 1 I <sup>2</sup> C | -   | -    | -                         | ✓                                 | \$2.77                | BOR, POR, WDT | QFN (ML), TQFP (PT)             | 44-Pin  |
|         | dsPIC33FJ16GS504                  | R        | 35   | dsPIC      | 16           | 2048   | AN1095 <sup>(1)</sup> | -             | 3V-3.6V            | 40                  | 7.37 MHz, 32 kHz          | 12 ch, 2 ADC* | 4 x 10-bit  | 4                  | 2             | 2                                  | 8   | -                           | 3                     | 1 UART, 1 SPI, 1 I <sup>2</sup> C | -   | -    | -                         | ✓                                 | \$3.42                | BOR, POR, WDT | QFN (ML), TQFP (PT)             |         |
| 64-Pin  | dsPIC33FJ32GS406                  | R        | 58   | dsPIC      | 32           | 4096   | AN1095 <sup>(1)</sup> | -             | 3V-3.6V            | 40                  | 7.37 MHz, 32 kHz          | 16 ch         | -           | -                  | 4             | 4                                  | 12  | 1                           | 5                     | 2 UART, 2 SPI, 2 I <sup>2</sup> C | -   | -    | -                         | -                                 | Call for Pricing      | BOR, POR, WDT | QFN (MR), TQFP (PT)             | 64-Pin  |
|         | dsPIC33FJ64GS406                  | R        | 58   | dsPIC      | 64           | 8192   | AN1095 <sup>(1)</sup> | -             | 3V-3.6V            | 40                  | 7.37 MHz, 32 kHz          | 16 ch         | -           | -                  | 4             | 4                                  | 12  | 1                           | 5                     | 2 UART, 2 SPI, 2 I <sup>2</sup> C | -   | -    | -                         | -                                 | Call for Pricing      | BOR, POR, WDT | QFN (MR), TQFP (PT)             |         |
|         | dsPIC33FJ32GS606                  | R        | 58   | dsPIC      | 32           | 4096   | AN1095 <sup>(1)</sup> | -             | 3V-3.6V            | 40                  | 7.37 MHz, 32 kHz          | 16 ch, 2 ADC* | 4 x 10-bit  | 4                  | 4             | 4                                  | 12  | 2                           | 5                     | 2 UART, 2 SPI, 2 I <sup>2</sup> C | -   | -    | -                         | -                                 | Call for Pricing      | BOR, POR, WDT | QFN (MR), TQFP (PT)             |         |
|         | dsPIC33FJ64GS606                  | R        | 58   | dsPIC      | 64           | 9216   | AN1095 <sup>(1)</sup> | 4             | 3V-3.6V            | 40                  | 7.37 MHz, 32 kHz          | 16 ch, 2 ADC* | 4 x 10-bit  | 4                  | 4             | 4                                  | 12  | 2                           | 5                     | 2 UART, 2 SPI, 2 I <sup>2</sup> C | 1   | -    | -                         | -                                 | Call for Pricing      | BOR, POR, WDT | QFN (MR), TQFP (PT)             |         |
| 80-Pin  | dsPIC33FJ32GS608                  | R        | 74   | dsPIC      | 32           | 4096   | AN1095 <sup>(1)</sup> | -             | 3V-3.6V            | 40                  | 7.37 MHz, 32 kHz          | 18 ch, 2 ADC* | 4 x 10-bit  | 4                  | 4             | 4                                  | 16  | 2                           | 5                     | 2 UART, 2 SPI, 2 I <sup>2</sup> C | -   | -    | -                         | -                                 | Call for Pricing      | BOR, POR, WDT | TQFP (PT)                       | 80-Pin  |
|         | dsPIC33FJ64GS608                  | R        | 74   | dsPIC      | 64           | 9216   | AN1095 <sup>(1)</sup> | 4             | 3V-3.6V            | 40                  | 7.37 MHz, 32 kHz          | 18 ch, 2 ADC* | 4 x 10-bit  | 4                  | 4             | 4                                  | 16  | 2                           | 5                     | 2 UART, 2 SPI, 2 I <sup>2</sup> C | 1   | -    | -                         | -                                 | Call for Pricing      | BOR, POR, WDT | TQFP (PT)                       |         |
| 100-Pin | dsPIC33FJ32GS610                  | R        | 85   | dsPIC      | 32           | 4096   | AN1095 <sup>(1)</sup> | -             | 3V-3.6V            | 40                  | 7.37 MHz, 32 kHz          | 24 ch, 2 ADC* | 4 x 10-bit  | 4                  | 4             | 4                                  | 18  | 2                           | 5                     | 2 UART, 2 SPI, 2 I <sup>2</sup> C | -   | -    | -                         | -                                 | Call for Pricing      | BOR, POR, WDT | TQFP (PF, PT)                   | 100-Pin |
|         | dsPIC33FJ64GS610                  | R        | 85   | dsPIC      | 64           | 9216   | AN1095 <sup>(1)</sup> | 4             | 3V-3.6V            | 40                  | 7.37 MHz, 32 kHz          | 24 ch, 2 ADC* | 4 x 10-bit  | 4                  | 4             | 4                                  | 18  | 2                           | 5                     | 2 UART, 2 SPI, 2 I <sup>2</sup> C | 1   | -    | -                         | -                                 | Call for Pricing      | BOR, POR, WDT | TQFP (PF, PT)                   |         |

\*Parts available with High Temperature options (150°C).

Note 1: See Application Note "AN1095 - Emulating Data EEPROM".

2: Two 16-bit timers can be concatenated to form a 32-bit timer.

## Thermal Management – Temperature Sensors

| Product       | Typical Accuracy (°C) | Max. Accuracy @ 25°C (°C) | Max. Temperature Range (°C) | Vcc Range (V) | Max. Op Current (µA) | Features  | Packages             |
|---------------|-----------------------|---------------------------|-----------------------------|---------------|----------------------|---|----------------------|
| MCP9501/2/3/4 | ±0.5                  | ±3                        | -55 to +125                 | +2.7 to +5.5  | 40                   | Cross to MAX6501/2/3/4, Open-drain and push-pull output options   | SOT-23A              |
| MCP9509/10    | ±0.5                  | NS                        | -40 to +125                 | +2.7 to +5.5  | 50                   | Resistor-programmable temperature switch  | SOT-23A              |
| MCP9700/01    | ±1                    | ±4                        | -40 to +125                 | +2.3 to +5.5  | 12                   | Linear Active Thermistor® IC  | SOT-23A, TO-92, SC70 |
| MCP9700/01A   | ±1                    | ±2                        | -40 to +125                 | +2.3 to +5.5  | 12                   | Linear Active Thermistor® IC  | SOT-23A, TO-92, SC70 |
| TC1046        | ±0.5                  | ±2                        | -40 to +125                 | +2.7 to +4.4  | 60                   | High precision temperature-to-voltage converter, 6.25 mV/°C   | SOT-23A              |
| TC1047A       | ±0.5                  | ±2                        | -40 to +125                 | +2.5 to +5.5  | 60                   | High precision temperature-to-voltage converter, 10 mV/°C   | SOT-23A              |
| MCP9800/1/2/3 | ±0.5                  | ±1                        | -55 to +125                 | +2.7 to +5.5  | 400                  | SMBus/I <sup>2</sup> C™ compatible interface, 0.0625°C to 0.5°C adj. resolution, power-saving one-shot temperature measurement  | SOIC, MSOP, SOT-23A  |
| MCP9804       | ±0.25                 | ±1                        | -40 to +125                 | +2.7 to +5.5  | 400                  | User programmable temperature limits with alert output, 1°C temp. accuracy from -40°C to +125°C   | MSOP, DFN            |
| MCP9843       | ±0.5                  | ±1                        | -20 to +125                 | +3.0 to +3.6  | 400                  | JEDEC compatible register set, SMBus/I <sup>2</sup> C™ compatible interface, programmable, shut-down modes and EVENT output   | TSSOP, DFN           |
| MCP98243      | ±1                    | ±3                        | -40 to +125                 | +3.0 to +3.6  | 500                  | Serial output temperature sensor with integrated EEPROM   | TSSOP, DFN, TDFN     |
| TCN75A        | ±0.5                  | ±2                        | -40 to +125                 | +2.7 to +5.5  | 500                  | SMBus/I <sup>2</sup> C™ compatible interface, power-saving one-shot temperature measurement, multi-drop capability, 0.0625°C to 0.5°C adjustable temperature resolution | SOIC, MSOP           |

## Power Management – Switching Regulators/PWM Controllers

| Product          | Input Voltage Range (V) | Output Voltage (V)                   | Operating Temperature Range (°C) | Control Scheme     | Switching Frequency (kHz) | Typical Active Current (µA) | Output Current (mA)          | Features   | Packages               |
|------------------|-------------------------|--------------------------------------|----------------------------------|--------------------|---------------------------|-----------------------------|------------------------------|--|------------------------|
| MCP1630/V 1631/V | 3.0 to 5.5              | -                                    | -40 to +125                      | PWM                | 1000/2000                 | 2800/3700                   | Ext                          | Current/Voltage mode PWM controller, UVLO, Short Circuit and Over-temperature Protection, Integrated MOSFET driver   | MSOP, SSOP, TSSOP, DFN |
| MCP1631HV/VHV    | 3.5 to 16               | -                                    | -40 to +125                      | PWM                | 2000                      | 3700                        | Ext                          | Current/Voltage mode PWM controller with integrated 16V LDO, UVLO, Integrated error, current and voltage sense amplifier, overvoltage comparator and MOSFET driver | SSOP, TSSOP            |
| TC1303/04/13     | 2.7 to 5.5              | DC/DC: 0.8 to 4.5<br>LDO: 1.5 to 3.3 | -40 to +85                       | PFM/PWM            | 2000                      | 65/600                      | DC/DC: 500 mA<br>LDO: 300 mA | Synchronous Buck Regulator, LDO w/Power Good with PFM/PWM auto-switching, Power Good output or Power Sequencing  | MSOP, DFN              |
| MCP1602/3        | 2.7 to 5.5              | 0.8 to 4.5 / 4.0                     | -40 to +85                       | PFM/PWM            | 2000                      | 35/45                       | 500                          | Synchronous Buck Regulator PFM, PWM auto-switching, UVLO, soft start, Power Good indicator, Over-temperature/current protection                                    | MSOP, DFN, TSOT        |
| MCP1640/B/C/D    | 0.65 to 6               | 2.0 to 5.5                           | -40 to +85                       | PWM or PFM/PFM     | 500                       | 19                          | 350                          | Integrated synchronous boost regulator, -65V start-up voltage, soft-start, True load disconnect or input-to-output bypass option                                   | SOT-23, DFN            |
| MCP1650/1/2/3    | 2.7 to 5.5              | 2.5 to ext. tx limited               | -40 to +125                      | Constant Frequency | 750                       | 120                         | 560/440                      | Step-up DC/DC Controller with shutdown control, low battery detect, Power Good indicator, UVLO, soft start   | MSOP                   |

## Power Management – Linear Regulators

| Product           | Max. Input Voltage (V) | Output Voltage (V) | Output Current (mA) | Typical Active Current (µA) | Typical Dropout Voltage @ Max. I <sub>our</sub> (mV) | Typical Output Voltage Accuracy (%) | Features   | Packages                             |
|-------------------|------------------------|--------------------|---------------------|-----------------------------|--|-------------------------------------|--|--------------------------------------|
| TC1016/17         | 6                      | 1.8 to 4.0         | 80/150              | 53                          | 150/285  | ±0.5                                | Shutdown   | SOT-23A, SC70                        |
| TC2014/5, TC2185  | 6                      | 1.8 to 5.0         | 50/100/150          | 55                          | 45/90/140  | ±0.4                                | Shutdown, Reference bypass input                                       | SOT-23A                              |
| TC2054/5, TC2186  | 6                      | 1.8 to 5.0         | 50/100/150          | 55                          | 45/90/140  | ±0.4                                | Shutdown, Error output   | SOT-23A                              |
| MCP1790/1         | 30                     | 3.0, 3.3, 5.0      | 70                  | 70                          | 500  | ±0.2                                | Load dump, Shutdown, PowerGood   | SOT-223, DDPACK                      |
| MCP1801/2         | 10                     | 0.9 to 6.0         | 150/300             | 25                          | 250/800  | ±0.4                                | Shutdown, High PSRR  | SOT-23A                              |
| MCP1804           | 28                     | 1.8 to 18          | 150                 | 50                          | 300  | ±0.5                                | Shutdown, High PSRR  | SOT-23, SOT-89, SOT-223              |
| MCP1700           | 6                      | 1.2 to 5.0         | 250                 | 1.6                         | 300  | ±0.4                                | Very low I <sub>o</sub>  | SOT-23A, SOT-89, TO-92               |
| MCP1702/3         | 13.2/16                | 1.2 to 5.0         | 250                 | 2                           | 330/625  | ±0.4                                | Very low I <sub>o</sub>  | DFN, TO-92, SOT-23A, SOT-89, SOT-223 |
| MCP1824/5/6/7     | 6                      | 0.8 to 5.0         | 300/500/1000/1500   | 120/120/140/140             | 200/210/300/330                                      | ±0.5                                | Fixed and Adjustable output, Shutdown, Power Good                      | SOT-23, SOT-223, TO-220, DDPACK      |
| MCP1824S/5S/6S/7S | 6                      | 0.8 to 5.0         | 300/500/1000/1500   | 120/120/140/140             | 200/210/300/330                                      | ±0.5                                | 3-pin high current LDOs  | SOIC, DFN, SOT-223, TO-220, DDPACK   |
| MCP1725/6/7       | 6                      | 0.8 to 5.0         | 500/1000/1500       | 120/140/140                 | 210/300/330  | ±0.5                                | Shutdown, C <sub>DELAY</sub> , Power Good                              | SOIC, DFN                            |
| TC1301A/B         | 6                      | 1.5 to 3.3         | LDO1: 300 LDO2: 150 | 103/114                     | LDO1: 104 LDO2: 150                                  | ±0.5                                | Dual LDO plus Reset output, Shutdown, Reference bypass, Voltage detect | MSOP, DFN                            |
| TC1302AB          | 6                      | 1.5 to 3.3         | LDO1: 300 LDO2: 150 | 103/114                     | LDO1: 104 LDO2: 150                                  | ±0.5                                | Dual LDO, Shutdown, reference bypass, Voltage detect                   | MSOP, DFN                            |

Products sorted by pin count followed by pricing.

† - Pricing subject to change; please contact your Microchip representative for most current pricing.

## Power Management – Charge Pump DC-to-DC Converters

| Product | Input Voltage Range (V) | Output Voltage (V)                    | Operating Temp Range (°C) | Max. Input Current (µA) | Typical Output Current (mA) | Features                                     | Packages   |
|---------|-------------------------|---------------------------------------|---------------------------|-------------------------|-----------------------------|--|------------|
| TC1044S | 1.5 to 12               | -V <sub>IN</sub> or 2*V <sub>IN</sub> | -40 to +85                | 160                     | 20                          | 85 kHz oscillator Boost mode                 | PDIP, SOIC |
| TC7660  | 1.5 to 10               | -V <sub>IN</sub> or 2*V <sub>IN</sub> | -40 to +85                | 180                     | 20                          | 10 kHz oscillator                            | PDIP, SOIC |
| TC7660H | 1.5 to 10               | -V <sub>IN</sub> or 2*V <sub>IN</sub> | -40 to +85                | 1000                    | 20                          | 120 kHz oscillator                           | PDIP, SOIC |
| TC7660S | 1.5 to 12               | -V <sub>IN</sub> or 2*V <sub>IN</sub> | -40 to +85                | 160                     | 20                          | 45 kHz oscillator Boost mode                 | PDIP, SOIC |
| TC7662B | 1.5 to 15               | -V <sub>IN</sub> or 2*V <sub>IN</sub> | -40 to +85                | 180                     | 20                          | 35 kHz oscillator Boost mode                 | PDIP, SOIC |
| TC7662A | 3.0 to 18               | -V <sub>IN</sub> or 2*V <sub>IN</sub> | -40 to +85                | 200                     | 40                          | 12 kHz oscillator                            | PDIP, SOIC |
| MCP1256 | 1.8 to 3.6              | 3.3                                   | -40 to +85                | 100                     | 100                         | Power Good Sleep mode                        | MSOP, DFN  |
| MCP1257 | 1.8 to 3.6              | 3.3                                   | -40 to +85                | 100                     | 100                         | Sleep mode low battery indication            | MSOP, DFN  |
| MCP1258 | 1.8 to 3.6              | 3.3                                   | -40 to +85                | 100                     | 100                         | Low battery indication input/output bypass 1 | MSOP, DFN  |

## Power Management – CPU/System Supervisors

| Product   | Description  | Operating Temp Range (°C) | Features   | Packages   |
|---|--|---------------------------|--|--|
| MCP111(1/2)<br>TC5(1/2/3/4)                                 | System Voltage Detectors<br>(No Reset Delay)           | -40 to +125<br>-40 to +85 | Wide Vcc Input Range, Wide Detection Range (Custom Options Available), Low Current, CMOS/Push-Pull Active Low Reset Options  | 3/SOT-23A, 3/SOT-89, 3/TO-92, 5/SOT-23, 3/SC-70                |
| MCP809, MCP100, MCP130, MCP120<br>MCP13XX, TC1270A and more | System Voltage Supervisors<br>(Available Reset Delays) | -40 to +125<br>-40 to +85 | Wide Detection Range (Custom Options Available), Low Current, Push-Pull/Open Drain, Active High/Low, Watchdog, Manual Reset, Dual Output Options, Multiple Reset Delay Options | 3/SOT-23, 3/TO-92, 3/SC-70, 8/SOIC 150mil, 5/SOT-23, 4/SOT-143 |

## Power Management – Power MOSFET Drivers

| Product              | Configuration            | Operating Temp Range (°C) | Peak Output Current (A) | Output Resistance (Max. @ 25°C) | Max Supply Voltage (V) | Input/Output Delay (ns) | Packages                        |
|----------------------|--------------------------|---------------------------|-------------------------|---------------------------------|------------------------|-------------------------|---------------------------------|
| MCP1401/02 Single    | Inverting/Non-inverting  | -40 to +125               | 0.5                     | 18/16                           | 18                     | 40/40                   | SOT-23                          |
| MCP1415/16 Single    | Inverting/Non-inverting  | -40 to +125               | 1.5                     | 7.5/5.5                         | 18                     | 50/55                   | SOT-23                          |
| TC4467/8/9 Quad      | Inverting/ Non-inverting | -40 to +85                | 1.2                     | 15/15                           | 18                     | 40/40                   | PDIP, SOIC                      |
| TC4426A/27A/28A Dual | Inverting/Non-inverting  | -40 to +125               | 1.5                     | 9/9                             | 18                     | 30/30                   | PDIP, SOIC, DFN                 |
| TC4423A/24A/25A Dual | Inverting/Non-inverting  | -40 to +125               | 3                       | 3 (typ.)/4 (typ.)               | 18                     | 40 (typ.)/40 (typ.)     | PDIP, SOIC, DFN                 |
| MCP14E3/E4/E5 Dual   | Inverting/Non-inverting  | -40 to +125               | 4                       | 3.5/3.0                         | 18                     | 55/55                   | PDIP, SOIC, DFN                 |
| MCP1406/07 Single    | Inverting/Non-inverting  | -40 to +125               | 6                       | 1.8/2.0 (typ.)                  | 18                     | 30/30                   | TO-220, PDIP, DFN, SOIC         |
| TC4420/29            | Inverting/Non-inverting  | -40 to +125               | 6                       | 2.8/2.5                         | 18                     | 55/55                   | TO-220, PDIP, DFN, SOIC         |
| TC4421A/22A Single   | Inverting /Non-inverting | -40 to +125               | 9                       | 1.25 (typ.)/1.5                 | 18                     | 38/42                   | PDIP, SOIC, TO-220, DFN         |
| TC4451/52 Single     | Inverting /Non-inverting | -40 to +125               | 12                      | 0.6 (typ.)/1.5                  | 18                     | 15/15                   | SOIC, PDIP, DFN, TO-220, DDPACK |
| TC4431/32 Single     | Inverting /Non-inverting | -40 to +85                | 1.5                     | 10/10                           | 30                     | 62/78                   | PDIP, SOIC                      |

## Power Management – Synchronous Buck High-Side Driver

| Product        | Configuration           | Operating Temp Range (°C) | Peak Output Current (A) | Output Resistance (Max. @ 25°C) | Max Supply Voltage (V)              | Input/Output Delay (ns) | Packages  |
|----------------|-------------------------|---------------------------|-------------------------|---------------------------------|-------------------------------------|-------------------------|-----------|
| MCP14700/14628 | Dual input/Single input | -40 to +85                | 2                       | 2.5/2.5                         | 5 (V <sub>CC</sub> ), 36 (Boot Pin) | 18/20                   | SOIC, DFN |

## Power Management – Battery Chargers

| Product        | Mode   | Cell Type                     | # of Cells | V <sub>CC</sub> Range (V) | Cell Voltage (V)         | Max. Charging Current (mA)      | Max. Voltage Regulation (%) | Int/Ext FET | Features  | Packages                    |
|----------------|--------|-------------------------------|------------|---------------------------|--------------------------|---------------------------------|-----------------------------|-------------|---|-----------------------------|
| MCP73113/14/23 | Linear | Li-Ion/Li-Polymer and LiFePO4 | 1          | 4 to 16                   | 3.6, 4.1, 4.2, 4.35, 4.4 | 1100                            | ±0.5                        | Int         | 6.5/5.8V Overvoltage Protection, UVLO, Thermal regulation   | 10-pin 3x3 DFN              |
| MCP73213/23    | Linear | Li-Ion/Li-Polymer and LiFePO4 | 2          | 4 to 16                   | 7.2, 8.2, 8.4, 8.7, 8.8  | 1100                            | ±0.6                        | Int         | 13V Overvoltage Protection  | 10-pin 3x3 DFN              |
| MCP73831/2     | Linear | Li-Ion/Li-Polymer             | 1          | 3.7 to 6.0                | 4.2, 4.35, 4.4, 4.5      | 500                             | ±0.75                       | Int         | UVLO, Thermal regulation, Programmable charge current, tri-state or open-drain STAT pin                   | 8-pin 2x3 DFN, 5-pin SOT-23 |
| MCP73837/8     | Linear | Li-Ion/Li-Polymer             | 1          | 3.7 to 6.0                | 4.2, 4.35, 4.4, 4.5      | 1000                            | ±0.75                       | Int         | Dual input (USB/DC) auto-switching, Thermistor input, Power Good output or Timer enable input             | 10-pin MSOP, 10-pin 3x3 DFN |
| MCP73871       | Linear | Li-Ion/Li-Polymer             | 1          | 3.75 to 6.0               | 4.2, 4.35, 4.4, 4.5      | 1500 (A/C Adapter)<br>500 (USB) | ±0.5                        | Int         | Simultaneous charging of load and battery, load-dependent charging, multiple programmable charge currents | 20-pin SSOP, 20-pin 4x4 QFN |

## Linear – Op Amps

| Product         | # per Package | GBWP (MHz) | I <sub>o</sub> Typical (µA) | V <sub>os</sub> Max (mV) | Operating Voltage (V) | Packages                     | Product       | # per Package | GBWP (MHz) | I <sub>o</sub> Typical (µA) | V <sub>os</sub> Max (mV) | Operating Voltage (V) | Packages                                 |
|-----------------|---------------|------------|-----------------------------|--------------------------|-----------------------|------------------------------|---------------|---------------|------------|-----------------------------|--------------------------|-----------------------|--|
| MCP661/2/3/5    | 1/2/1/2       | 60         | 6000                        | 8                        | 2.5 to 5.5            | SOIC, MSOP, DFN              | MCP6071/2/4   | 1/2/4         | 1.2        | 110                         | 0.15                     | 1.8 to 6.0            | SOIC, TSSOP, DFN                         |
| MCP651/2/5      | 1/2/2         | 50         | 6000                        | 0.2                      | 2.5 to 5.5            | SOIC, MSOP, DFN              | MCP6H01/2     | 1/2           | 1.2        | 135                         | 4.5                      | 3.5 to 16             | SOIC, TDFN                               |
| MCP631/2/3/5    | 1/2/1/2       | 24         | 2500                        | 8                        | 2.5 to 5.5            | SOIC, MSOP, DFN              | MCP6001/2/4   | 1/2/4         | 1          | 100                         | 4.5                      | 1.8 to 6.0            | PDIP, SOIC, MSOP, TSSOP, TDFN, SOT, SC70 |
| MCP621/2/5      | 1/2/2         | 20         | 2500                        | 0.2                      | 2.5 to 5.5            | SOIC, MSOP, DFN              | MCP6401/2/4   | 1/2/4         | 1          | 45                          | 4.5                      | 1.8 to 6.0            | SOIC, TSSOP, TDFN, SOT, SC70             |
| MCP6021/2/3/4   | 1/2/1/4       | 10         | 1000                        | 0.5                      | 2.5 to 5.5            | PDIP, SOIC, MSOP, TSSOP, SOT | MCP6L01/2/4   | 1/2/4         | 1          | 85                          | 5                        | 1.8 to 6.0            | SOIC, MSOP, TSSOP, SOT, SC70             |
| MCP6291/2/3/4/5 | 1/2/1/4/2     | 10         | 1000                        | 3                        | 2.4 to 6.0            | PDIP, SOIC, MSOP, TSSOP, SOT | MCP6061/2/4   | 1/2/4         | 0.73       | 60                          | 0.15                     | 1.8 to 6.0            | SOIC, TSSOP, DFN                         |
| MCP6L91/2/4     | 1/2/4         | 10         | 850                         | 4                        | 2.4 to 6.0            | SOIC, MSOP, TSSOP, SOT       | MCP6241/2/4   | 1/2/4         | 0.55       | 50                          | 5                        | 1.8 to 5.5            | PDIP, SOIC, MSOP, TSSOP, TDFN, SOT, SC70 |
| MCP6281/2/3/4/5 | 1/2/1/4/2     | 5          | 445                         | 3                        | 2.2 to 6.0            | PDIP, SOIC, MSOP, TSSOP, SOT | MCP6051/2/4   | 1/2/4         | 0.385      | 30                          | 0.15                     | 1.8 to 6.0            | SOIC, TSSOP, DFN                         |
| MCP6286         | 1             | 3.5        | 540                         | 1.5                      | 2.2 to 5.5            | SOT                          | MCP6231/2/4   | 1/2/4         | 0.3        | 20                          | 5                        | 1.8 to 6.0            | PDIP, SOIC, MSOP, TSSOP, TDFN, SOT, SC70 |
| MCP601/2/3/4    | 1/2/1/4       | 2.8        | 230                         | 2                        | 2.7 to 6.0            | PDIP, SOIC, TSSOP, SOT       | MCP616/7/8/9  | 1/2/1/4       | 0.19       | 19                          | 0.15                     | 2.3 to 5.5            | PDIP, SOIC, MSOP, TSSOP                  |
| MCP6L1/2/4      | 1/2/4         | 2.8        | 200                         | 3                        | 2.7 to 6.0            | SOIC, MSOP, TSSOP, SOT       | MCP606/7/8/9  | 1/2/1/4       | 0.155      | 19                          | 0.25                     | 2.5 to 6.0            | PDIP, SOIC, TSSOP, SOT                   |
| MCP6271/2/3/4/5 | 1/2/1/4/2     | 2          | 170                         | 3                        | 2.0 to 6.0            | PDIP, SOIC, MSOP, TSSOP, SOT | MCP6141/2/3/4 | 1/2/1/4       | 0.1        | 0.6                         | 3                        | 1.4 to 6.0            | PDIP, SOIC, MSOP, TSSOP, SOT             |
| MCP6L71/2/4     | 1/2/4         | 2          | 150                         | 4                        | 2.0 to 6.0            | SOIC, MSOP, TSSOP, SOT       | MCP6041/2/3/4 | 1/2/1/4       | 0.014      | 0.6                         | 3                        | 1.4 to 6.0            | PDIP, SOIC, MSOP, TSSOP, SOT             |
| MCP6V01/2/3     | 1/2/1         | 1.3        | 300                         | 0.002                    | 1.8 to 5.5            | SOIC, DFN, TDFN              | MCP6031/2/3/4 | 1/2/1/4       | 0.01       | 0.9                         | 0.15                     | 1.8 to 5.5            | SOIC, MSOP, TSSOP, DFN, SOT              |
| MCP6V06/7/8     | 1/2/1         | 1.3        | 300                         | 0.003                    | 1.8 to 5.5            | SOIC, DFN, TDFN              | MCP6441       | 1             | 0.009      | 0.45                        | 4.5                      | 1.4 to 6.0            | SOT, SC70                                |

## Linear – Comparators

| Product       | # per Package | Typical Propagation Delay (µs) | I <sub>o</sub> Typical (µA) | V <sub>os</sub> Max (mV) | Operating Voltage (V) | Temperature Range (°C) | Features                                  | Packages                           |
|---------------|---------------|--------------------------------|-----------------------------|--------------------------|-----------------------|------------------------|---|------------------------------------|
| MCP6541/2/3/4 | 1/2/1/4       | 4                              | 1                           | 5                        | 1.6 to 5.5            | -40 to +125            | Push-Pull, Rail-to-Rail Input/Output      | PDIP, SOIC, MSOP, TSSOP, SOT, SC70 |
| MCP6546/7/8/9 | 1/2/1/4       | 4                              | 1                           | 5                        | 1.6 to 5.5            | -40 to +125            | Open-drain, 9V, Rail-to-Rail Input/Output | PDIP, SOIC, MSOP, TSSOP, SOT, SC70 |
| MCP6561/2/4   | 1/2/4         | 0.047                          | 100                         | 10                       | 1.8 to 5.5            | -40 to +125            | Push-Pull, Rail-to-Rail Input/Output      | SOIC, MSOP, TSSOP, SOT, SC70       |
| MCP6566/7/9   | 1/2/4         | 0.047                          | 100                         | 10                       | 1.8 to 5.5            | -40 to +125            | Open-Drain, Rail-to-Rail Input/Output     | SOIC, MSOP, TSSOP, SOT, SC70       |

## Mixed Signal – Successive Approximation Register (SAR) Analog-to-Digital Converters

| Product       | Resolution (bits) | Maximum Sampling Rate (ksamples/sec) | # of Input Channels | Input Type   | Interface | Max. Supply Current (µA) | Temperature Range (°C) | Packages                |
|---------------|-------------------|--------------------------------------|---------------------|--------------|-----------|--------------------------|------------------------|-------------------------|
| MCP3021/3221  | 10/12             | 22                                   | 1                   | Single-ended | PC™       | 250                      | -40 to +125            | SOT-23A                 |
| MCP3001/2/4/8 | 10                | 200                                  | 1/2/4/8             | Single-ended | SPI       | 500-550                  | -40 to +85             | PDIP, SOIC, MSOP, TSSOP |
| MCP3201/2/4/8 | 12                | 100                                  | 1/2/4/8             | Single-ended | SPI       | 400-550                  | -40 to +85             | PDIP, SOIC, MSOP, TSSOP |
| MCP3301/2/4   | 13                | 100                                  | 1/2/4               | Differential | SPI       | 450                      | -40 to +85             | PDIP, SOIC, MSOP, TSSOP |

## Mixed Signal – Digital Potentiometers

| Product          | # of Taps | Memory      | Channels | Interface | Resistance (kΩ) | Temperature Range (°C) | Packages       | Product    | # of Taps | Memory      | Channels | Interface | Resistance (kΩ) | Temperature Range (°C) | Packages   |
|------------------|-----------|-------------|----------|-----------|-----------------|------------------------|----------------|------------|-----------|-------------|----------|-----------|-----------------|------------------------|------------|
| MCP4011/12/13/14 | 64        | Volatile    | 1        | Up/Down   | 2.1, 5, 10, 50  | -40 to +125            | DFN, SOT-23    | MCP4341/42 | 129       | Nonvolatile | 4        | PC™       | 5, 10, 50, 100  | -40 to +125            | TSSOP, QFN |
| MCP4017/18/19    | 128       | Volatile    | 1        | PC™       | 5, 10, 50, 100  | -40 to +125            | SC-70          | MCP4361/62 | 257       | Nonvolatile | 4        | PC™       | 5, 10, 50, 100  | -40 to +125            | TSSOP, QFN |
| MCP40D17/D18/D19 | 128       | Volatile    | 1        | PC™       | 5, 10, 50, 100  | -40 to +125            | SC-70          | MCP4331/32 | 129       | Volatile    | 4        | PC™       | 5, 10, 50, 100  | -40 to +125            | TSSOP, QFN |
| MCP4021/22/23/24 | 64        | Nonvolatile | 1        | Up/Down   | 2.1, 5, 10, 50  | -40 to +125            | DFN, SOT-23    | MCP4351/52 | 257       | Volatile    | 4        | PC™       | 5, 10, 50, 100  | -40 to +125            | TSSOP, QFN |
| MCP4141/42       | 128       | Nonvolatile | 1        | SPI       | 5, 10, 50, 100  | -40 to +125            | MSOP, QFN, DFN | MCP4531/32 | 128       | Volatile    | 1        | PC™       | 5, 10, 50, 100  | -40 to +125            | MSOP, DFN  |
| MCP4241/42       | 128       | Nonvolatile | 2        | SPI       | 5, 10, 50, 100  | -40 to +125            | MSOP, QFN, DFN | MCP4631/32 | 128       | Volatile    | 2        | PC™       | 5, 10, 50, 100  | -40 to +125            | MSOP, DFN  |
| MCP4131/32       | 128       | Volatile    | 1        | SPI       | 5, 10, 50, 100  | -40 to +125            | QFN, DFN       | MCP4541/42 | 128       | Nonvolatile | 1        | PC™       | 5, 10, 50, 100  | -40 to +125            | MSOP, DFN  |
| MCP4231/32       | 128       | Volatile    | 2        | SPI       | 5, 10, 50, 100  | -40 to +125            | MSOP, QFN, DFN | MCP4641/42 | 128       | Nonvolatile | 2        | PC™       | 5, 10, 50, 100  | -40 to +125            | MSOP, DFN  |
| MCP4151/52       | 256       | Volatile    | 1        | SPI       | 5, 10, 50, 100  | -40 to +125            | MSOP, QFN, DFN | MCP4551/52 | 256       | Volatile    | 1        | PC™       | 5, 10, 50, 100  | -40 to +125            | MSOP, DFN  |
| MCP4161/62       | 256       | Nonvolatile | 1        | SPI       | 5, 10, 50, 100  | -40 to +125            | MSOP, QFN, DFN | MCP4651/52 | 256       | Volatile    | 2        | PC™       | 5, 10, 50, 100  | -40 to +125            | MSOP, DFN  |
| MCP4251/52       | 256       | Volatile    | 2        | SPI       | 5, 10, 50, 100  | -40 to +125            | MSOP, QFN, DFN | MCP4561/62 | 256       | Nonvolatile | 1        | PC™       | 5, 10, 50, 100  | -40 to +125            | MSOP, DFN  |
| MCP4261/62       | 256       | Nonvolatile | 2        | SPI       | 5, 10, 50, 100  | -40 to +125            | MSOP, QFN, DFN | MCP4661/62 | 256       | Nonvolatile | 2        | PC™       | 5, 10, 50, 100  | -40 to +125            | MSOP, DFN  |

## Mixed Signal – Delta Sigma Analog-to-Digital Converters

| Product       | Resolution (bits) | Maximum Sampling Rate (samples/sec) | # of Input Channels | Interface | Typical Supply Current (µA) | Temperature Range (°C) | Features              | Packages                    |
|---------------|-------------------|-------------------------------------|---------------------|-----------|-----------------------------|------------------------|-----------------------|-----------------------------|
| MCP3421/2/3/4 | 18 to 12          | 4 to 240                            | 1/2/2/4 Diff        | IC™       | 155                         | -40 to +125            | PGA, V <sub>REF</sub> | SOT, DFN, MSOP, SOIC, TSSOP |
| MCP3425/6/7/8 | 16 to 12          | 15 to 240                           | 1/2/2/4 Diff        | IC™       | 155                         | -40 to +125            | PGA, V <sub>REF</sub> | SOT, DFN, MSOP, SOIC, TSSOP |
| MCP3550/1/3   | 22                | 13/14/60                            | 1 Diff              | SPI       | 120                         | -40 to +125            | 50 & 60 Hz Rejection  | SOIC, MSOP                  |

## Mixed Signal – Energy Measurement ICs

| Product      | Dynamic Range     | Typical Accuracy | Gain        | Output Type        | Typical Supply Current | Supply Voltage Range (V) | Temperature Range (°C) | Packages  |
|--------------|-------------------|------------------|-------------|--------------------|------------------------|--------------------------|------------------------|-----------|
| MCP3901      | 24-bit resolution | -                | up to 32    | SPI                | 3.6 mA                 | 4.5 to 5.5               | -40 to +125            | SSOP, QFN |
| MCP3905A/06A | 500:1 / 1000:1    | 0.1%             | up to 32    | Active power pulse | 3.9 mA                 | 4.5 to 5.5               | -40 to +85             | SSOP      |
| MCP3909      | 1000:1            | 0.1%             | 1, 2, 8, 16 | SPI                | 3.9 mA                 | 4.5 to 5.5               | -40 to +85             | SSOP      |

## Mixed Signal – Digital-to-Analog Converters

| Product       | Resolution (Bits) | DAC Channels | Interface | Voltage Reference | Output Settling Time (µs) | DNL (±LSB)   | Typical Operating Current (µA) | Temperature Range (°C) | Packages                  |
|---------------|-------------------|--------------|-----------|-------------------|---------------------------|--------------|--------------------------------|------------------------|---------------------------|
| MCP4725       | 12                | 1            | IC™       | V <sub>DD</sub>   | 6                         | 0.75         | 175                            | -40 to +125            | SOT-23                    |
| MCP4728       | 12                | 4            | IC™       | Int               | 6                         | 0.75         | 250                            | -40 to +125            | MSOP                      |
| MCP4801/11/21 | 8/10/12           | 1            | SPI       | Int               | 4.5                       | 0.5/0.5/0.75 | 330                            | -40 to +125            | 2x3 DFN, MSOP, PDIP, SOIC |
| MCP4802/12/22 | 8/10/12           | 2            | SPI       | Int               | 4.5                       | 0.5/0.5/0.75 | 415                            | -40 to +125            | MSOP, PDIP, SOIC          |
| MCP4901/11/21 | 8/10/12           | 1            | SPI       | Ext               | 4.5                       | 0.5/0.5/0.75 | 175                            | -40 to +125            | 2x3 DFN, MSOP, PDIP, SOIC |
| MCP4902/12/22 | 8/10/12           | 2            | SPI       | Ext               | 4.5                       | 0.5/0.5/0.75 | 350                            | -40 to +125            | PDIP, SOIC, TSSOP         |
| TC1320/1      | 8/10              | 1            | SMbus     | Ext               | 10                        | 0.8/2        | 350                            | -40 to +85             | MSOP, SOIC                |

## Interface – mTouch™ AR1000 Resistive Touch Screen Controllers

| Product | Type             | Communication | Touch Screens Supported              | A/D                         | Resolution  | Power                      | Points per second | Baud Rate     | Operating Temperature Range (°C) | Static Protection | 5 ku Pricing <sup>1</sup> | Special Features  | Package                               |
|---------|------------------|---------------|--------------------------------------|-----------------------------|-------------|----------------------------|-------------------|---------------|----------------------------------|-------------------|---------------------------|---|---------------------------------------|
| AR1010  | Analog Resistive | UART          | All Manufacturers<br>4, 5 and 8 wire | Internal 10-bit Ratiometric | 1024 X 1024 | 3.3V DC ±5%<br>5.5V DC ±5% | 140 pps           | Standard 9600 | -40 to +85                       | Per schematic     | \$1.39                    | Controller driven calibration & Universal for all touch screens | 20-pin SSOP (SS), SOIC (SO), QFN (ML) |
| AR1020  | Analog Resistive | SPI, IC™      | All Manufacturers<br>4, 5 and 8 wire | Internal 10-bit Ratiometric | 1024 X 1024 | 3.3V DC ±5%<br>5.5V DC ±5% | 140 pps           | Standard 9600 | -40 to +85                       | Per schematic     | \$1.39                    | Controller driven calibration & Universal for all touch screens | 20-pin SSOP (SS), SOIC (SO), QFN (ML) |

## Interface – Controller Area Network (CAN), Infrared, LIN Transceivers, Ethernet, Serial Peripherals, USB

| Product                            | Description   | Operating Temperature Range (°C) | Other Features   | Packages               |
|------------------------------------|---|----------------------------------|--|------------------------|
| MCP2515                            | Stand-Alone CAN Controller with SPI Interface                                 | -40 to +125                      | 3 TX Buffers, 2 RX Buffers, 6 Filters, 2 Masks, Interrupt output, MCP2510 upgrade  | PDIP, SOIC, TSSOP      |
| MCP2551                            | CAN (Controller Area Network), High-Speed CAN Transceiver                     | -40 to +125                      | 1 Mbps max. CAN bus speed, ISO11898 compatible, Industry standard pinout   | PDIP, SOIC             |
| MCP202(1/2)                        | LIN (Local Interconnect Network), LIN Transceiver with Voltage Regulator      | -40 to +125                      | V <sub>REG</sub> = 5.0 ± 3%, 3.3 ± 3% @ 50 mA, V <sub>CC</sub> Range = 7.4 to 18V, Max Baud Rate = 20 Kbaud, Supports LIN Specs: 1.3, 2.0, 2.1, SAE J2602, Exceeds Automotive OEM ESD/EMC Requirements | PDIP, SOIC, TSSOP, DFN |
| MCP200(3/4)                        | Stand-alone LIN Transceiver   | -40 to +125                      | V <sub>CC</sub> Range = 6 to 27V, Max Baud Rate = 20 Kbaud, Supports LIN Specs: 1.3, 2.0, 2.1, SAE J2602, Exceeds Automotive OEM ESD/EMC Requirements  | PDIP, SOIC, DFN        |
| MCP23X09/18                        | 8-bit I/O Port Expander, 16-bit I/O Port Expander                             | -40 to +125                      | IC (up to 3.4 MHz) or SPI (up to 10 MHz) interface, 25 mA source/sink per I/O  | PDIP, SDIP, SOIC, SSOP |
| MCP212(0/2), MCP2140A, MCP215(0/5) | Infrared IrDA Encoders, Decoders, Protocol Handlers                           | -40 to +85                       | UART to IR encoder/decoder hardware & software baud rate selection, IrDA™ Standard protocol handler plus encoder/decoder   | PDIP, SDIP, SOIC, SSOP |
| MCP2200                            | UART to USB Protocol Converter  | -40 to +85                       | USB 2.0 Compliant, 8 GPIO, Supports High-speed USB (12 Mbps)   | SOIC, SSOP, QFN        |
| ENC28J60                           | Stand-Alone 10 Base-T Ethernet Controller with SPI Interface                  | -40 to +85                       | Ethernet Controller, 8 KB RAM Buffer, Integrated 10 BASE-T PHY   | SPDIP, SOIC, SSOP, QFN |
| ENC424J600                         | Stand-Alone 10/100 Base-T Ethernet Controller with SPI and Parallel Interface | -40 to +85                       | Ethernet Controller, 24 KB RAM Buffer, Cryptographic Security Engine, 10/100 Base-T PHY  | TQFP, QFN              |
| ENC624J600                         | Stand-Alone 10/100 Base-T Ethernet Controller with SPI and Parallel Interface | -40 to +85                       | Ethernet Controller, 24 KB RAM Buffer, Cryptographic Security Engine, 10/100 Base-T PHY  | TQFP                   |

## Safety & Security – Smoke Detector and Horn Driver ICs

| Product             | Horn Driver | Detection Method | Low Battery Detection | Alarm Memory | Alarm Interconnect | Hush/Sensitivity Timer | Operating Temperature Range (°C) | Packages      |
|---------------------|-------------|------------------|-----------------------|--------------|--------------------|------------------------|----------------------------------|---------------|
| RE46C140/1/3/4/5    | Yes         | Photo            | Yes                   | No           | Yes                | 140/4/5                | -25 to +75                       | PDIP, SOIC    |
| RE46C12X & 152      | Yes         | Ion              | Yes                   | No           | Not 120            | 122/7, 152             | -10 to +60                       | PDIP          |
| RE46C10X & 11X      | Yes         | Just Driver      | 5/7/9/19              | NA           | 9/19               | None                   | See Datasheet                    | See Datasheet |
| RE46C162/3, 5/6/7/8 | Yes         | Ion/Photo        | Yes                   | Yes          | Yes                | Yes                    | -25 to +75                       | PDIP, SOIC    |

## Motor Drivers - Stepper Motors, DC Motors and 3 Phase BLDC Fan Controllers

| Product   | Motor Type                                 | Input Voltage Range (V) | Internal/External FETs | Output Current (mA) | Control Scheme   | Motor Speed Output  | Shutdown Protection  | Temperature Operating Range (°C) | Features   | Packages    |
|-----------|--|-------------------------|------------------------|---------------------|--|---------------------|--|----------------------------------|--|-------------|
| MTS62C19A | One Bipolar Stepper Motor or Two DC Motors | 10.0 to 40.0            | Internal               | 750                 | Direct PWM Input, Current Limit Control, Microstepping | No                  | Overcurrent, Overtemperature, Under Voltage                | -20 to +85                       | Dual Full Bridge Motor Driver for Stepper Motors, Pin Compatible with Allegro 6219 | 24-pin SOP  |
| MTS2916A  | One Bipolar Stepper Motor or Two DC Motors | 10.0 to 40.0            | Internal               | 750                 | Direct PWM Input, Current Limit Control, Microstepping | No                  | Overcurrent, Overtemperature, Under Voltage                | -20 to +85                       | Dual Full Bridge Motor Driver for Stepper Motors, Pin Compatible with Allegro 2916 | 24-pin SOP  |
| MTD6501C  | 3 Phase Brushless Fan                      | 2.0 to 14.0             | Internal               | 800                 | Sensorless Sinusoidal                                  | Frequency Generator | Overcurrent, Short Circuit, Overtemperature, Motor Lock-up | -10 to +85                       | 3-Phase BLDC Sinusoidal Sensorless Fan Motor Driver                                | 8-pin SOP   |
| MTD6501D  | 3 Phase Brushless Fan                      | 2.0 to 14.0             | Internal               | 500                 | Sensorless Sinusoidal                                  | Frequency Generator | Overcurrent, Short Circuit, Overtemperature, Motor Lock-up | -30 to +95                       | 3-Phase BLDC Sinusoidal Sensorless Fan Motor Driver, Boost Mode                    | 10-pin MSOP |

## RF Products

### WLAN Power Amplifiers

| Product              | Description   | Frequency                  | Linear Power (dBm) @ 3% EVM | Package           |
|----------------------|---|----------------------------|-----------------------------|-------------------|
| SST11LP12-QCF        | 802.11a/n, High Power                               | 4.9-5.8 GHz                | 21                          | 3x3 QFN           |
| SST11CP15-QUBE       | 802.11a/n, Low DC Current                           | 4.9-5.8 GHz                | 19                          | 2x2 QFN           |
| SST12CP11-QVCE       | 802.11g/n, Ultra High Power                         | 2.4-2.5 GHz                | 25.5                        | 3x3 QFN           |
| SST12LP07-QVCE-MM007 | 802.11g, High Power (Pin Compatible with TOP777002) | 2.4-2.5 GHz                | 21.5                        | 3x3 QFN           |
| SST12LP07A-QXBE      | 802.11b/g/n   | 2.4-2.5 GHz                | 21                          | 12-pin 2x2 QFN    |
| SST12LP07E-QX8E      | 802.11b/g   | 2.4-2.5 GHz                | 20.5                        | 8-pin 2x2 XSON    |
| SST12LP08-QX6E       | 802.11b/g/n   | 2.4-2.5 GHz                | 20                          | 6-pin 1.5x1.5 QFN |
| SST12LP08-QXBE       | 802.11b/g/n   | 2.4-2.5 GHz                | 20                          | 12-pin 2x2 QFN    |
| SST12LP08A-QX8E      | 802.11b/g/n   | 2.4-2.5 GHz                | 20.5                        | 8-pin 2x2 XSON    |
| SST12LP14A-QVCE      | 802.11g (General Purpose)                           | 2.4-2.5 GHz                | 21.5                        | 3x3 QFN           |
| SST12LP14C-QVCE      | 802.11g (Pin Compatible with 12LP14)                | 2.4-2.5 GHz                | 18                          | 3x3 QFN           |
| SST12LP14E-QX6E      | 802.11b/g/n (Low DC Current for Embedded)           | 2.4-2.5 GHz                | 18.5                        | 6-pin 1.5x1.5 QFN |
| SST12LP14E-QX8E      | 802.11b/g/n (Low DC Current for Embedded)           | 2.4-2.5 GHz                | 18.5                        | 8-pin 2x2 QFN     |
| SST12LP15A-QVCE      | 802.11b/g/n, High Power                             | 2.4-2.5 GHz                | 22.5                        | 3x3 QFN           |
| SST12LP15B-QVCE      | 802.11b/g/n, High Power                             | 2.4-2.5 GHz                | 22.5                        | 3x3 QFN           |
| SST12LP15B-QXBE      | 802.11b/g/n, High Power                             | 2.4-2.5 GHz                | 22.5                        | 2x2 QFN           |
| SST12LP17E-QU8E      | 802.11b/g/n, Fully Matched                          | 2.4-2.5 GHz                | 18                          | 2x2 QFN           |
| SST12LP19E-QX6E      | 802.11b/g/n (Low DC Current for Embedded)           | 2.4-2.5 GHz                | 19                          | 6-pin 1.5x1.5 QFN |
| SST12LP19E-QX8E      | 802.11b/g/n (Low DC Current for Embedded)           | 2.4-2.5 GHz                | 19                          | 8-pin 2x2 QFN     |
| SST13LP05-MLCF       | 802.11a/b/g Dual-Band (Fully Matched)               | 2.4-2.5 GHz<br>5.1-5.8 GHz | 18.5<br>17.5                | 4x4 LGA           |

### Front End Modules

| Product        | Description   | Frequency   | NF (dB)/PA Linear Power (dBm) @ 3% EVM | Package |
|----------------|---|-------------|--|---------|
| SST12LF01-QDE  | 802.11b/g Front End Module PA+LNA                         | 2.4-2.5 GHz | 1.5 / 21.5                             | 4x4 QFN |
| SST12LF02-QXCE | 802.11b/g/n Front End Module PA (Fully Matched) + SP3T SW | 2.4-2.5 GHz | 18.5                                   | 3x3 QFN |

### Low-Noise Amplifiers

| Product        | Description                         | Frequency | NF (dB) | Package   |
|----------------|-------------------------------------|-----------|---------|-----------|
| SST12LN01-QU6F | Low-Noise Amplifier (Fully Matched) | 2.4 GHz   | 1.5     | 3x1.6 QFN |

## Real-Time Clocks

| Bus               | Product  | Alarm Settings <sup>(1)</sup> | Outputs                      | Digital Trim (Adj/Range) | SRAM <sup>(2)</sup> (Bytes) | EEPROM (Kbits) | ID <sup>(3)</sup> /MAC | Minimum Voltage                                 | I <sub>BAT</sub> (nA) | Additional Features                      | Pins | Packages                                     | Bus               |
|-------------------|----------|-------------------------------|------------------------------|--------------------------|-----------------------------|----------------|------------------------|---|-----------------------|--|------|--|-------------------|
| I <sup>2</sup> C™ | MCP79410 | 2                             | 1 MFP (I <sup>2</sup> O/CLK) | +1 ppm/±127 ppm          | 64                          | 1              | Blank ID               | V <sub>CC</sub> : 1.8V, V <sub>BAT</sub> : 1.3V | 700                   | Battery switchover, Power-fail timestamp | 8    | SOIC (SN), TSSOP (ST), MSOP (MS), TDFN (MNY) | I <sup>2</sup> C™ |
|                   | MCP79411 | 2                             | 1 MFP (I <sup>2</sup> O/CLK) | +1 ppm/±127 ppm          | 64                          | 1              | EUI-48                 | V <sub>CC</sub> : 1.8V, V <sub>BAT</sub> : 1.3V | 700                   | Battery switchover, Power-fail timestamp | 8    | SOIC (SN), TSSOP (ST), MSOP (MS), TDFN (MNY) |                   |
|                   | MCP79412 | 2                             | 1 MFP (I <sup>2</sup> O/CLK) | +1 ppm/±127 ppm          | 64                          | 1              | EUI-64                 | V <sub>CC</sub> : 1.8V, V <sub>BAT</sub> : 1.3V | 700                   | Battery switchover, Power-fail timestamp | 8    | SOIC (SN), TSSOP (ST), MSOP (MS), TDFN (MNY) |                   |
|                   | MCP79400 | 2                             | 1 MFP (I <sup>2</sup> O/CLK) | +1 ppm/±127 ppm          | 64                          | 0              | Blank ID               | V <sub>CC</sub> : 1.8V, V <sub>BAT</sub> : 1.3V | 700                   | Battery switchover, Power-fail timestamp | 8    | SOIC (SN), TSSOP (ST), MSOP (MS), TDFN (MNY) |                   |
|                   | MCP79401 | 2                             | 1 MFP (I <sup>2</sup> O/CLK) | +1 ppm/±127 ppm          | 64                          | 0              | EUI-48                 | V <sub>CC</sub> : 1.8V, V <sub>BAT</sub> : 1.3V | 700                   | Battery switchover, Power-fail timestamp | 8    | SOIC (SN), TSSOP (ST), MSOP (MS), TDFN (MNY) |                   |
|                   | MCP79402 | 2                             | 1 MFP (I <sup>2</sup> O/CLK) | +1 ppm/±127 ppm          | 64                          | 0              | EUI-64                 | V <sub>CC</sub> : 1.8V, V <sub>BAT</sub> : 1.3V | 700                   | Battery switchover, Power-fail timestamp | 8    | SOIC (SN), TSSOP (ST), MSOP (MS), TDFN (MNY) |                   |

1. Alarm settings on 1 second count.

2. Unique ID is 64 bits of protected EEPROM.

3. Battery backed SRAM.

## Serial Memory Products

| Bus                  | Product        | Release (R)<br>Not Released (NR) | Density | Organization | Max. Clock Frequency | Operating Voltage       | Temperature Range | EW Endurance (Minimum) | Data Retention (Minimum) | Max. Write Speeds | Max. Standby Current (@5.5V, 85°C) | Write Protect |          | Protected Array Size | 5-ku Pricing <sup>†</sup> | Special/Unique Features  | Packages   | Bus               |
|----------------------|----------------|----------------------------------|---------|--------------|----------------------|-------------------------|-------------------|------------------------|--------------------------|-------------------|------------------------------------|---------------|----------|----------------------|---------------------------|--|--|-------------------|
|                      |                |                                  |         |              |                      |                         |                   |                        |                          |                   |                                    | Hardware      | Software |                      |                           |  |  |                   |
| <b>Serial SRAM</b>   |                |                                  |         |              |                      |                         |                   |                        |                          |                   |                                    |               |          |                      |                           |  |  |                   |
| SPI                  | 23X640         | R                                | 64 Kb   | x8           | 20 MHz               | 1.5V-1.95V<br>2.7V-3.6V | -40°C to +125°C   | ∞                      | Volatile                 | 0 ms              | 4 µA                               | -             | -        | -                    | \$0.51                    | 20 MHz @ 3V, 32 byte page buffer, Zero write cycle time, Infinite endurance  | SOIC (SN), PDIP (P), TSSOP (ST)  | SPI               |
|                      | 23X256         | R                                | 256 Kb  | x8           | 20 MHz               | 1.5V-1.95V<br>2.7V-3.6V | -40°C to +125°C   | ∞                      | Volatile                 | 0 ms              | 4 µA                               | -             | -        | -                    | \$0.96                    | 20 MHz @ 3V, 32 byte page buffer, Zero write cycle time, Infinite endurance  | SOIC (SN), PDIP (P), TSSOP (ST)  |                   |
| <b>Serial EEPROM</b> |                |                                  |         |              |                      |                         |                   |                        |                          |                   |                                    |               |          |                      |                           |  |  |                   |
| UNI/O™ Bus           | 11XX010        | R                                | 1 Kb    | x8           | 100 kHz              | 1.8V-5.5V               | -40°C to +125°C   | 1M                     | 200 Years                | 5 ms              | 1 µA                               | -             | ✓        | W, ½, ¼              | \$0.23                    | Single I/O for all clock, data, control and write protection   | 3-SOT-23 (TT), SOIC (SN), PDIP (P), DFN (MNY), MSOP (MS), TO-92 (TO), WLCSP (CS) | UNI/O™ Bus        |
|                      | 11XX020/E48    | R                                | 2 Kb    | x8           | 100 kHz              | 1.8V-5.5V               | -40°C to +125°C   | 1M                     | 200 Years                | 5 ms              | 1 µA                               | -             | ✓        | W, ½, ¼              | \$0.25                    | Single I/O for all clock, data, control and write protection, Unique EUI-48™/EUI-64™, MAC address option available                 | 3-SOT-23 (TT), SOIC (SN), PDIP (P), DFN (MNY), MSOP (MS), TO-92 (TO), WLCSP (CS) |                   |
|                      | 11XX040        | R                                | 4 Kb    | x8           | 100 kHz              | 1.8V-5.5V               | -40°C to +125°C   | 1M                     | 200 Years                | 5 ms              | 1 µA                               | -             | ✓        | W, ½, ¼              | \$0.26                    | Single I/O for all clock, data, control and write protection   | 3-SOT-23 (TT), SOIC (SN), PDIP (P), DFN (MNY), MSOP (MS), TO-92 (TO), WLCSP (CS) |                   |
|                      | 11XX080        | R                                | 8 Kb    | x8           | 100 kHz              | 1.8V-5.5V               | -40°C to +125°C   | 1M                     | 200 Years                | 5 ms              | 1 µA                               | -             | ✓        | W, ½, ¼              | \$0.30                    | Single I/O for all clock, data, control and write protection   | 3-SOT-23 (TT), SOIC (SN), PDIP (P), DFN (MNY), MSOP (MS), TO-92 (TO), WLCSP (CS) |                   |
|                      | 11XX160        | R                                | 16 Kb   | x8           | 100 kHz              | 1.8V-5.5V               | -40°C to +125°C   | 1M                     | 200 Years                | 5 ms              | 1 µA                               | -             | ✓        | W, ½, ¼              | \$0.33                    | Single I/O for all clock, data, control and write protection   | 3-SOT-23 (TT), SOIC (SN), PDIP (P), DFN (MNY), MSOP (MS), TO-92 (TO), WLCSP (CS) |                   |
|                      | 24XX00         | R                                | 128 b   | x8           | 400 kHz              | 1.7V-5.5V               | -40°C to +125°C   | 1M                     | 200 Years                | 4 ms              | 1 µA                               | -             | -        | -                    | \$0.17                    | 100 KHz operation from 1.7V to 4.5V  | SOIC (SN), TSSOP (ST), 5-SOT-23 (OT), DFN (MC), PDIP (P)                         |                   |
|                      | 24XX01/014     | R                                | 1 Kb    | x8           | 400 kHz              | 1.7V-5.5V<br>1.5V-3.6V  | -40°C to +150°C   | 1M                     | 200 Years                | 5 ms              | 1 µA                               | ✓             | -        | W, ½                 | \$0.18                    | Address pin option - connect up to 8 devices on bus, Very low voltage option   | SOIC (SN), TSSOP (ST), PDIP (P), 5-SOT-23 (OT), DFN (MNY), MSOP (MS), SC70 (LT)  |                   |
|                      | 24XX02/024/E48 | R                                | 2 Kb    | x8           | 400 kHz              | 1.7V-5.5V<br>1.5V-3.6V  | -40°C to +125°C   | 1M                     | 200 Years                | 5 ms              | 1 µA                               | ✓             | -        | W, ½                 | \$0.20                    | Address pin option - connect up to 8 devices on bus, Very low voltage option, Unique EUI-48™/EUI-64™, MAC address option available | SOIC (SN), TSSOP (ST), PDIP (P), 5-SOT-23 (OT), DFN (MNY), MSOP (MS), SC70 (LT)  |                   |
|                      | 34XX02         | R                                | 2 Kb    | x8           | 1 MHz                | 1.7V-5.5V<br>1.5V-3.6V  | -40°C to +125°C   | 1M                     | 200 Years                | 5 ms              | 1 µA                               | ✓             | ✓        | W, ½                 | \$0.18                    | 1 MHz @ 2.5V, Permanent and restable software WP - DIMM-DDR2/3   | SOIC (SN), TSSOP (ST), PDIP (P), 6-SOT-23 (OT), DFN (MNY), MSOP (MS)             |                   |
|                      | 24XX04         | R                                | 4 Kb    | x8           | 400 kHz              | 1.7V-5.5V               | -40°C to +125°C   | 1M                     | 200 Years                | 5 ms              | 1 µA                               | ✓             | -        | W, ½                 | \$0.21                    | 400 KHz @ 2.5V, 16 byte page write buffer, No address pins   | SOIC (SN), PDIP (P), TSSOP (ST), 5-SOT-23 (OT), DFN (MNY), MSOP (MS), WLCSP (CS) |                   |
| I <sup>2</sup> C™    | 24XX08         | R                                | 8 Kb    | x8           | 400 kHz              | 1.7V-5.5V               | -40°C to +125°C   | 1M                     | 200 Years                | 5 ms              | 1 µA                               | ✓             | -        | W, ½                 | \$0.23                    | 400 KHz @ 2.5V, 16 byte page write buffer, No address pins   | SOIC (SN), TSSOP (ST), 5-SOT-23 (OT), PDIP (P), DFN (MNY), MSOP (MS)             | I <sup>2</sup> C™ |
|                      | 24XX16         | R                                | 16 Kb   | x8           | 400 kHz              | 1.7V-5.5V               | -40°C to +125°C   | 1M                     | 200 Years                | 5 ms              | 1 µA                               | ✓             | -        | W, ½                 | \$0.25                    | 400 KHz @ 2.5V, 16 byte page write buffer, No address pins   | SOIC (SN), TSSOP (ST), PDIP (P), 5-SOT-23 (OT), DFN (MNY), MSOP (MS), WLCSP (CS) |                   |
|                      | 24XX32A        | R                                | 32 Kb   | x8           | 400 kHz              | 1.7V-5.5V               | -40°C to +125°C   | 1M                     | 200 Years                | 5 ms              | 1 µA                               | ✓             | -        | W, ¼                 | \$0.31                    | 400 KHz @ 2.5V, 32 byte page write buffer, connect up to 8 devices on bus  | SOIC (SN), TSSOP (ST), PDIP (P), 5-SOT-23 (OT), DFN (MNY), MSOP (MS), WLCSP (CS) |                   |
|                      | 24XX64/65      | R                                | 64 Kb   | x8           | 1 MHz                | 1.7V-5.5V               | -40°C to +125°C   | 1M,<br>10M             | 200 Years                | 5 ms              | 1 µA                               | ✓             | -        | W, ¼                 | \$0.38                    | 1 MHz @ 2.5V, 32/64 byte page, Relocatable 4 Kb block with 10M cycles endurance  | SOIC (SN), TSSOP (ST), PDIP (P), 5-SOT-23 (OT), DFN (MNY), MSOP (MS), WLCSP (CS) |                   |
|                      | 24XX128        | R                                | 128 Kb  | x8           | 1 MHz                | 1.7V-5.5V               | -40°C to +125°C   | 1M                     | 200 Years                | 5 ms              | 1 µA                               | ✓             | -        | W                    | \$0.54                    | 1 MHz @ 2.5V, 64 byte page, connect up to 8 devices on bus   | SOIC (SN), TSSOP (ST), PDIP (P), DFN (MNY), MSOP (MS), WLCSP (CS)                |                   |
|                      | 24XX256        | R                                | 256 Kb  | x8           | 1 MHz                | 1.7V-5.5V               | -40°C to +125°C   | 1M                     | 200 Years                | 5 ms              | 1 µA                               | ✓             | -        | W                    | \$0.83                    | 1 MHz @ 2.5V, 64 byte page, connect up to 8 devices on bus   | SOIC (SN), TSSOP (ST), SOI (SM), PDIP (P), DFN (MF), MSOP (MS), WLCSP (CS)       |                   |
|                      | 24XX512        | R                                | 512 Kb  | x8           | 1 MHz                | 1.7V-5.5V               | -40°C to +125°C   | 1M                     | 200 Years                | 5 ms              | 1 µA                               | ✓             | -        | W                    | \$1.50                    | 1 MHz @ 2.5V, 128 byte page, connect up to 8 devices on bus  | SOIC (SN), TSSOP (ST), PDIP (P), DFN (MF), SOI (SM), WLCSP (CS)                  |                   |
|                      | 24XX1025       | R                                | 1 Mb    | x8           | 1 MHz                | 1.7V-5.5V               | -40°C to +125°C   | 1M                     | 200 Years                | 5 ms              | 5 µA                               | ✓             | -        | W                    | \$3.14                    | 1 MHz @ 2.5V, 128 byte page, connect up to 4 devices on bus  | SOIC (SN), SOI (SM), PDIP (P)  |                   |

1. All devices are Pb-Free and RoHS compliant.

2. ESD protection > 4 kV (HBM); >400V (MM) on all pins.

3. Write Protect (WP): W = Whole Array, ½ = Half Array, ¼ = Quarter Array.

4. Factory program and unique ID options available.

5. Die and wafer options available on all devices.

† - Pricing subject to change; please contact your Microchip representative for most current pricing.

## Serial Memory Products

| Bus                          | Product      | Released (R)<br>Not Released (NR) | Density | Organization | Max. Clock Frequency | Operating Voltage | Temperature Range | EW Endurance (Minimum) | Data Retention (Minimum) | Max. Write Speeds | Max. Standby Current (@5.5V, 85°C) | Write Protect |          | Protected Array Size | 5-yr Pricing <sup>†</sup>   | Special/Unique Features  | Packages  | BIS       |
|------------------------------|--------------|-----------------------------------|---------|--------------|----------------------|-------------------|-------------------|------------------------|--------------------------|-------------------|------------------------------------|---------------|----------|----------------------|---|--|---|-----------|
|                              |              |                                   |         |              |                      |                   |                   |                        |                          |                   |                                    | Hardware      | Software |                      |   |  |   |           |
| <b>Serial EEPROM (Cont.)</b> |              |                                   |         |              |                      |                   |                   |                        |                          |                   |                                    |               |          |                      |   |  |   |           |
| Microwire                    | 93XX46A/B/C  | R                                 | 1 Kb    | x8/x16       | 3 MHz                | 1.8V-5.5V         | -40°C to +125°C   | 1M                     | 200 Years                | 6 ms              | 1 µA                               | -             | -        | -                    | \$0.18  | ORG pin to select word size on 46C version   | SOIC (SN), TSSOP (ST), PDIP (P), DFN (MC), MSOP (MS), 6-SOT-23 (OT) | Microwire |
|                              | 93XX56A/B/C  | R                                 | 2 Kb    | x8 / x16     | 3 MHz                | 1.8V-5.5V         | -40°C to +125°C   | 1M                     | 200 Years                | 6 ms              | 1 µA                               | -             | -        | -                    | \$0.20  | ORG pin to select word size in 56C version   | SOIC (SN), TSSOP (ST), PDIP (P), DFN (MC), MSOP (MS), 6-SOT-23 (OT) |           |
|                              | 93XX66A/B/C  | R                                 | 4 Kb    | x8 / x16     | 3 MHz                | 1.8V-5.5V         | -40°C to +125°C   | 1M                     | 200 Years                | 6 ms              | 1 µA                               | -             | -        | -                    | \$0.21  | ORG pin to select word size in 66C version   | SOIC (SN), TSSOP (ST), PDIP (P), DFN (MC), MSOP (MS), 6-SOT-23 (OT) |           |
|                              | 93XX76A/B/C  | R                                 | 8 Kb    | x8 / x16     | 3 MHz                | 1.8V-5.5V         | -40°C to +125°C   | 1M                     | 200 Years                | 6 ms              | 1 µA                               | ✓             | -        | W                    | \$0.30  | ORG pin to select word size in 76C version   | SOIC (SN), TSSOP (ST), PDIP (P), DFN (MC), MSOP (MS), 6-SOT-23 (OT) |           |
|                              | 93XX86A/B/C  | R                                 | 16 Kb   | x8 / x16     | 3 MHz                | 1.8V-5.5V         | -40°C to +125°C   | 1M                     | 200 Years                | 6 ms              | 1 µA                               | ✓             | -        | W                    | \$0.33  | ORG pin to select word size in 86C version   | SOIC (SN), TSSOP (ST), PDIP (P), DFN (MC), MSOP (MS), 6-SOT-23 (OT) |           |
| SPI                          | 25XX010A     | R                                 | 1 Kb    | x8           | 10 MHz               | 1.8V-5.5V         | -40°C to +150°C   | 1M                     | 200 Years                | 5 ms              | 1 µA                               | ✓             | ✓        | W, ½, ¼              | \$0.30  | 5 MHz @ 2.5V, Status register, 16 byte page  | SOIC (SN), TSSOP (ST), PDIP (P), DFN (MC), MSOP (MS), 6-SOT-23 (OT) | SPI       |
|                              | 25XX020A/E48 | R                                 | 2 Kb    | x8           | 10 MHz               | 1.8V-5.5V         | -40°C to +150°C   | 1M                     | 200 Years                | 5 ms              | 1 µA                               | ✓             | ✓        | W, ½, ¼              | \$0.31  | 5 MHz @ 2.5V, Status register, 16 byte page, Unique EUI-48™/EUI-64™ MAC address option available | SOIC (SN), TSSOP (ST), PDIP (P), DFN (MC), MSOP (MS), 6-SOT-23 (OT) |           |
|                              | 25XX040A     | R                                 | 4 Kb    | x8           | 10 MHz               | 1.8V-5.5V         | -40°C to +150°C   | 1M                     | 200 Years                | 5 ms              | 1 µA                               | ✓             | ✓        | W, ½, ¼              | \$0.33  | 5 MHz @ 2.5V, Status register, 16 byte page  | SOIC (SN), TSSOP (ST), PDIP (P), DFN (MC), MSOP (MS), 6-SOT-23 (OT) |           |
|                              | 25XX080C/D   | R                                 | 8 Kb    | x8           | 10 MHz               | 1.8V-5.5V         | -40°C to +150°C   | 1M                     | 200 Years                | 5 ms              | 1 µA                               | ✓             | ✓        | W, ½, ¼              | \$0.40  | 16/32 byte page, 5 MHz @ 2.5V, Status register   | SOIC (SN), TSSOP (ST), PDIP (P), DFN (MNY), MSOP (MS)               |           |
|                              | 25XX160C/D   | R                                 | 16 Kb   | x8           | 10 MHz               | 1.8V-5.5V         | -40°C to +150°C   | 1M                     | 200 Years                | 5 ms              | 1 µA                               | ✓             | ✓        | W, ½, ¼              | \$0.41  | 16/32 byte page, 5 MHz @ 2.5V, Status register   | SOIC (SN), TSSOP (ST), PDIP (P), DFN (MNY), MSOP (MS)               |           |
|                              | 25XX320A     | R                                 | 32 Kb   | x8           | 10 MHz               | 1.8V-5.5V         | -40°C to +150°C   | 1M                     | 200 Years                | 5 ms              | 1 µA                               | ✓             | ✓        | W, ½, ¼              | \$0.45  | 5 MHz @ 2.5V, Status register, 32 byte page  | SOIC (SN), TSSOP (ST), PDIP (P), DFN (MNY), MSOP (MS)               |           |
|                              | 25XX640A     | R                                 | 64 Kb   | x8           | 10 MHz               | 1.8V-5.5V         | -40°C to +150°C   | 1M                     | 200 Years                | 5 ms              | 1 µA                               | ✓             | ✓        | W, ½, ¼              | \$0.46  | 5 MHz @ 2.5V, Status register, 32 byte page  | SOIC (SN), TSSOP (ST), PDIP (P), DFN (MNY, MF), MSOP (MS)           |           |
|                              | 25XX128      | R                                 | 128 Kb  | x8           | 10 MHz               | 1.8V-5.5V         | -40°C to +150°C   | 1M                     | 200 Years                | 5 ms              | 1 µA                               | ✓             | ✓        | W, ½, ¼              | \$0.74  | 5 MHz @ 2.5V, Status register, 64 byte page  | SOIC (SN), TSSOP (ST), PDIP (P), DFN (MF)                           |           |
|                              | 25XX256      | R                                 | 256 Kb  | x8           | 10 MHz               | 1.8V-5.5V         | -40°C to +150°C   | 1M                     | 200 Years                | 5 ms              | 1 µA                               | ✓             | ✓        | W, ½, ¼              | \$1.01  | 5 MHz @ 2.5V, Status register, 64 byte page  | SOIC (SN), TSSOP (ST), PDIP (P), DFN (MF), SOJ (SM)                 |           |
|                              | 25XX512      | R                                 | 512 Kb  | x8           | 20 MHz               | 1.8V-5.5V         | -40°C to +125°C   | 1M                     | 200 Years                | 5 ms              | 10 µA                              | ✓             | ✓        | W, ½, ¼              | \$1.53  | 10 MHz @ 2.5V, Deep power down, Status register, Page/Sector/Chip erase                          | SOIC (SN), PDIP (P), DFN (MF), SOJ (SM)                             |           |
| 25XX1024                     | R            | 1 Mb                              | x8      | 20 MHz       | 1.8V-5.5V            | -40°C to +125°C   | 1M                | 200 Years              | 6 ms                     | 12 µA             | ✓                                  | ✓             | W, ½, ¼  | \$2.59               | 10 MHz @ 2.5V, Deep power down, Status register, Page/Sector/Chip erase | PDIP (P), DFN (MF), SOJ (SM)   |   |           |

- All devices are Pb-Free and RoHS compliant.
  - ESD protection > 4 kV (HBM); >400V (MM) on all pins.
  - Write Protect (WP): W = Whole Array, ½ = Half Array, ¼ = Quarter Array.
  - Factory program and unique ID options available.
  - Die and wafer options available on all devices.
- † - Pricing subject to change; please contact your Microchip representative for most current pricing.

## SST NOR Flash Memory

| Voltage | Density  | Parallel            | SPI (Serial) | SQI™ (Quad-bit)  | FWH/LPC            | Voltage | Density  | Parallel | SPI (Serial) | SQI™ (Quad-bit)  | FWH/LPC |
|---------|----------|---------------------|--------------|------------------|--------------------|---------|----------|----------|--------------|------------------|---------|
| 5V      | 512 Kbit | -                   | -            | -                | -                  | 1.8V    | 512 Kbit | -        | 25WF512      | -                | -       |
|         | 1 Mbit   | 39SF010A            | -            | -                | -                  |         | 1 Mbit   | -        | 25WF010      | -                | -       |
|         | 2 Mbit   | 39SF020A            | -            | -                | -                  |         | 2 Mbit   | -        | 25WF020      | -                | -       |
|         | 4 Mbit   | 39SF040             | -            | -                | -                  |         | 4 Mbit   | 39WF400B | 25WF040      | -                | -       |
| 3V      | 512 Kbit | 39VF512             | 25VF512A     | -                | -                  |         | 8 Mbit   | 39WF800B | 25WF080      | 26WF080B         | -       |
|         | 1 Mbit   | 39VF010             | 25VF010A     | -                | -                  |         | 16 Mbit  | 39WF160X | -            | 26WF016B         | -       |
|         | 2 Mbit   | 39VF020, 39VF200A   | 25VF020B     | -                | -                  |         | 32 Mbit  | -        | -            | 26WF032/26WF032B | -       |
|         | 4 Mbit   | 39VF040, 39VF400A   | 25VF040B     | -                | -                  |         | 64 Mbit  | -        | -            | 26WF064B         | -       |
|         | 8 Mbit   | 39VF800A            | 25VF080B     | -                | 49LF008B, 49LF080B |         |          |          |              |                  |         |
|         | 16 Mbit  | 39VF160XC, 39VF168X | 25VF016B     | 26VF016/26VF016B | 49LF016C, 49LF160C |         |          |          |              |                  |         |
|         | 32 Mbit  | 39VF320XB           | 25VF032B     | 26VF032/26VF032B | -                  |         |          |          |              |                  |         |
|         | 64 Mbit  | 39VF640XB, 39VF640X | 25VF064C     | 26VF064B         | -                  |         |          |          |              |                  |         |

X = 1 or 2 for 39 Series  
X = 1, 2, 3 or 4 for 36 and 38 Series



## Wireless Products

### IEEE 802.11 Modules

| Product  | Pin Count | Frequency Range (GHz) | Sensitivity (dBm) | Power Output (dBm) | RSSI | TX Power Consumption (mA) | RX Power Consumption (mA) | Clock  | Sleep | MAC | MAC Features | Encryption     | Interface  | Volume Pricing <sup>†</sup> | Packages  |
|----------|-----------|-----------------------|-------------------|--------------------|------|---------------------------|---------------------------|--------|-------|-----|--------------|----------------|------------|-----------------------------|-----------|
| ZG2100MC | 36        | 2.412-2.484           | -91               | 10                 | Yes  | 156                       | 85                        | 25 MHz | 0.1   | Yes | 802.11       | WPA, WPA2, WEP | 4-wire SPI | \$26.57                     | 36 Module |
| ZG2101MC | 36        | 2.412-2.484           | -91               | 10                 | Yes  | 156                       | 85                        | 25 MHz | 0.1   | Yes | 802.11       | WPA, WPA2, WEP | 4-wire SPI | \$26.57                     | 36 Module |

### IEEE 802.15.4 Transceivers/Modules

| Product    | Pin Count | Frequency Range (GHz) | Sensitivity (dBm) | Power Output (dBm) | RSSI | TX Power Consumption (mA) | RX Power Consumption (mA) | Clock  | Sleep | MAC | MAC Features | Encryption | Interface  | Volume Pricing <sup>†</sup> | Packages  |
|------------|-----------|-----------------------|-------------------|--------------------|------|---------------------------|---------------------------|--------|-------|-----|--------------|------------|------------|-----------------------------|-----------|
| MRF24J40   | 40        | 2.405-2.48            | -95               | 0                  | Yes  | 23                        | 19                        | 20 MHz | Yes   | Yes | CSMA-CA      | AES128     | 4-wire SPI | \$2.36                      | 40/QFN    |
| MRF24J40MA | 12        | 2.405-2.48            | -95               | 0                  | Yes  | 23                        | 19                        | 20 MHz | Yes   | Yes | CSMA-CA      | AES128     | 4-wire SPI | \$8.99                      | 12/Module |
| MRF24J40MB | 12        | 2.405-2.475           | -102              | 20                 | Yes  | 130                       | 25                        | 20 MHz | Yes   | Yes | CSMA-CA      | AES128     | 4-wire SPI | \$15.70                     | 12/Module |
| MRF24J40MC | 12        | 2.405-2.475           | -102              | 20                 | Yes  | 130                       | 25                        | 20 MHz | Yes   | Yes | CSMA-CA      | AES128     | 4-wire SPI | \$15.70                     | 12/Module |

### Sub-GHz Transceivers/Modules

| Product | Pin Count | Frequency Range (MHz) | Sensitivity (dBm) | Power Output (dBm) | RSSI | TX Power Consumption (mA) | RX Power Consumption (mA) | Clock    | Sleep | Interface  | Volume Pricing <sup>†</sup> | Packages |
|---------|-----------|-----------------------|-------------------|--------------------|------|---------------------------|---------------------------|----------|-------|------------|-----------------------------|----------|
| MRF49XA | 16        | 433/868/915           | -110              | 7                  | Yes  | 15 mA @ 0 dBm             | 11                        | 10 MHz   | Yes   | 4-wire SPI | \$1.71                      | 16/TSSOP |
| MRF89XA | 32        | 868/915/950           | -113              | 12.5               | Yes  | 25 mA @ 10 dBm            | 3                         | 12.8 MHz | Yes   | 4-wire SPI | \$2.05                      | 32/TQFN  |

### rfPIC™ Transmitters + PIC® MCUs

| Product      | I/O Pins | Frequency Range (MHz) | Program Bytes | Program Words | EEPROM | RAM (bytes) | Digital Timer | Watch Dog Timer | Max. Speed (MHz) | ICSP™ | Modulation | Data Rate (kbps) | Output Power (dBm) | Operating Voltage | Other Features           | Volume Pricing <sup>†</sup> | Packages        |
|--------------|----------|-----------------------|---------------|---------------|--------|-------------|---------------|-----------------|------------------|-------|------------|------------------|--------------------|-------------------|--------------------------|-----------------------------|-----------------|
| rfPIC12F675F | 6        | 380-450               | 1792          | 1024 x 12     | 128    | 64          | 1             | 1               | 20               | Yes   | ASK/FSK    | 40               | 10                 | 2.0-5.5           | 4x10-bit A/D, Comparator | \$2.11                      | 20/SSOP 208 mil |
| rfPIC12F675H | 6        | 850-930               | 1792          | 1024 x 12     | 128    | 64          | 1             | 1               | 20               | Yes   | ASK/FSK    | 40               | 10                 | 2.0-5.5           | 4x10-bit A/D, Comparator | \$2.11                      | 20/SSOP 208 mil |
| rfPIC12F675K | 6        | 290-350               | 1792          | 1024 x 12     | 128    | 64          | 1             | 1               | 20               | Yes   | ASK/FSK    | 40               | 10                 | 2.0-5.5           | 4x10-bit A/D, Comparator | \$2.11                      | 20/SSOP 208 mil |

### RF Receivers












































| Product   | Frequency Range (MHz) | Modulation   | Data Rate (kbps) | Sensitivity (dBm) | IF Frequency Range (MHz) | Operating Voltage | RSSI | Selectable LNA Gain | Volume Pricing <sup>†</sup> | Packages |
|-----------|-----------------------|--------------|------------------|-------------------|--------------------------|-------------------|------|---------------------|-----------------------------|----------|
| rfRXD0420 | 300-450               | ASK, FSK, FM | 80               | -111              | 0.455-21.4               | 2.5-5.5           | Yes  | Yes                 | \$1.71                      | 32/LOFP  |
| rfRXD0920 | 800-930               | ASK, FSK, FM | 80               | -109              | 0.455-21.4               | 2.5-5.5           | Yes  | Yes                 | \$2.62                      | 32/LOFP  |

† - Pricing subject to change; please contact your Microchip representative for most current pricing.

## Terms and Definitions

|                    |   |                              |  |                            |   |
|--------------------|---|------------------------------|--|----------------------------|---|
| <b>1 KB</b>        | 1024 bytes  | <b>EEPROM</b>                | Electrically Erasable Programmable Read Only Memory                | <b>mTouch™</b>             | Proprietary Touch Sensing Technology                    |
| <b>1 Kw</b>        | 1024 words  | <b>EFT</b>                   | Electrical Fast Transient  | <b>PIC24</b>               | 16-bit Core   |
| <b>18F/PIC18</b>   | 16-bit instruction word – 75/83 instructions                        | <b>EMC</b>                   | Electromagnetic Compatibility                                      | <b>PIC32</b>               | 32-bit Core   |
| <b>ADC</b>         | Analog to Digital Converter   | <b>EMI</b>                   | Electromagnetic Interference                                       | <b>PLVD</b>                | Programmable Low Voltage Detect                         |
| <b>AUSART</b>      | Addressable Universal Synchronous Asynchronous Receiver Transceiver | <b>EMR/Enhanced-MidRange</b> | 14-bit instruction word – 49 instructions (denoted as PIC1XF1XXX)  | <b>POR/POOR</b>            | Power ON Reset/Power ON/OFF Reset                       |
| <b>BL/Baseline</b> | 12-bit instruction word – 33 instructions                           | <b>ESD</b>                   | Electrostatic Discharge  | <b>PWM</b>                 | Pulse Width Modulation                                  |
| <b>BOR/PBOR</b>    | Brown Out Reset/Programmable Brown Out Reset                        | <b>EUSART</b>                | Enhanced Universal Synchronous Asynchronous Receiver Transceiver   | <b>RAM</b>                 | Random Access Memory                                    |
| <b>CCP/ECCP</b>    | Capture Compare PWM/Enhanced Capture Compare PWM                    | <b>EWDT/WDT</b>              | Extended Watch Dog Timer/Watch Dog Timer                           | <b>RTCC</b>                | Real-Time Clock Calendar                                |
| <b>CLC</b>         | Configurable Logic Cell   | <b>HV</b>                    | High Voltage   | <b>Source/Sink Current</b> | All Products Support 25 mA per I/O                      |
| <b>Comp</b>        | Capacitive Sensing Implemented via Comparator                       | <b>ICD</b>                   | In-Circuit Debug   | <b>SR Latch</b>            | Set Reset Latch   |
| <b>CRC</b>         | Cyclical Redundancy Check   | <b>ICE</b>                   | In-Circuit Emulation   | <b>SRAM</b>                | Static Random Access Memory                             |
| <b>CSM</b>         | mTouch – Capacitive Sensing Module                                  | <b>ICSP™</b>                 | In-Circuit Serial Programming™                                     | <b>SPI</b>                 | Serial Peripheral Interface                             |
| <b>CSP</b>         | Chip Scale Package  | <b>IDE</b>                   | Integrated Development Environment                                 | <b>T1G</b>                 | Timer 1 Gate  |
| <b>CTMU</b>        | mTouch – Charge Time Measurement Unit                               | <b>LCD</b>                   | Liquid Crystal Display   | <b>USART</b>               | Universal Synchronous Asynchronous Receiver Transceiver |
| <b>CVD</b>         | Charge Voltage Divide (Capacitive Sensing Implemented via ADC)      | <b>LDO</b>                   | Low Drop-Out voltage regulator                                     | <b>USB</b>                 | Universal Serial Bus                                    |
| <b>CWG</b>         | Complimentary Waveform Generator                                    | <b>LF</b>                    | Low Power Flash  | <b>USB (Full Speed)</b>    | 12 Mb/s Data Rate                                       |
| <b>DDS</b>         | Direct Digital Synthesis  | <b>MFC/FC</b>                | Master Inter-Integrated Circuit bus/Inter-Integrated Circuit bus   | <b>USB OTG</b>             | USB On-The-Go   |
| <b>DSM</b>         | Data Signal Modulator   | <b>MIPS</b>                  | Million Instructions Per Second                                    | <b>XLP</b>                 | nanoWatt XLP eXtreme Low Power Technology               |
| <b>dsPIC</b>       | 16-bit Core with DSP  | <b>MR/Mid-Range</b>          | 14-bit instruction word – 35 instructions                          |                            |   |
| <b>ECAN</b>        | Enhanced Controller Area Network                                    | <b>MSSP/SSP</b>              | Master/Synchronous Serial Port (I <sup>2</sup> C & SPI Peripheral) |                            |   |

## Product Packages

| Small Outline   |  | Dual Flat No Lead DFN   | Quad Flat No Lead QFN   | Plastic Shrink Small Outline SSOP  | Plastic Small Outline SOIC  |
|---|--|---|---|--|---|
|  Bumped Die (WLCSP)    |  3-lead DDPACK (EB)   |  8-lead DFN (MC)<br>2 x 3 x 0.9 mm   |  16-lead QFN (MG)<br>3 x 3 x 0.9 mm      |  8-lead MSOP (MS)     |  8-lead SOIC (SN)    |
|  Die/Wafer (WLCSP)     |  5-lead DDPACK (ET)   |  8-lead TDFN (MN)<br>2 x 3 x 0.75 mm |  20-lead QFN (ML)<br>4 x 4 x 0.9 mm      |  10-lead MSOP (UN)    |  8-lead SOIC (SM)    |
|  3-lead SC70 (LB)      |  3-lead SC-89         |  8-lead UDFN (MU)<br>2 x 3 x 0.5 mm  |  20-lead QFN (MQ)<br>5 x 5 x 0.9 mm      |  16-lead QSOP (QR)    |  14-lead SOIC (SL)   |
|  5-lead SC70 (LT)      |  3-lead TO-92 (TO/ZB) |  8-lead DFN (MF)<br>3 x 3 x 0.9 mm   |  28-lead UQFN (MV)<br>4 x 4 x 0.5 mm     |  20-lead SSOP (SS)    |  16-lead SOIC (SL)   |
|  3-lead SOT-23 (TT/CB) |  5-lead TO-220 (AT)   |  8-lead DFN (MD)<br>4 x 4 x 0.9 mm   |  28-lead QFN (MM & ML)<br>6 x 6 x 0.9 mm |  28-lead SSOP (SS)    |  18-lead SOIC (SO)   |
|  5-lead SOT-23 (OT)    |  |  8-lead DFN (MF)<br>6 x 5 x 0.9 mm   |  40-lead UQFN (MV)<br>5 x 5 x 0.5 mm     | <b>Plastic Thin Shrink Small Outline TSSOP</b>   |  20-lead SOIC (SO)  |
|  6-lead SOT-23 (OT/CH) |  |   |  44-lead QFN (ML)<br>8 x 8 x 0.9 mm    |  8-lead TSSOP (ST)  |  28-lead SOIC (SO) |
|  3-SOT-223 (DB)        |  |   |  64-lead QFN (MR)<br>9 x 9 x 0.9 mm     |  14-lead TSSOP (ST) |   |
|  4-lead SOT-143 (RC) |  |   |   |  20-lead TSSOP (ST) |   |

Packages are shown approximate size.

Additional packages are available – contact your local Microchip sales office for additional information.

For detailed dimensions, view our Package Drawing and Dimensions Specification at: [www.microchip.com/packaging](http://www.microchip.com/packaging)

## Product Packages

### Plastic Thin Quad Flatpack TQFP



44-lead TQFP (PT)  
10 x 10 x 1 mm



64-lead TQFP (PT)  
10 x 10 x 1 mm



64-lead TQFP (PF)  
14 x 14 x 1 mm



80-lead TQFP (PT)  
12 x 12 x 1 mm



80-lead TQFP (PF)  
14 x 14 x 1 mm



100-lead TQFP (PT)  
12 x 12 x 1 mm



100-lead TQFP (PF)  
14 x 14 x 1 mm

### Plastic Quad Flatpack QFP



32-lead LQFP (LQ)  
7 x 7 x 1.4 mm



44-lead MQFP (PQ)  
10 x 10 x 2 mm

### Ball Grid Array BGA



100-ball BGA (BG)  
10 x 10 x 1.1 mm

### Plastic Dual In-Line PDIP



8-lead PDIP (P)



14-lead PDIP (P)



18-lead PDIP (P)



20-lead PDIP (P)



24-lead PDIP (P)



28-lead SPDIP (SP)



40-lead PDIP (P)

### Additional SST Package Options

#### NOR Flash Memory



8-lead WSON (A6/QAE)  
5 x 6 mm



32-lead PDIP (P2/PHE)  
600 mil



32-lead PLCC (PE/NHE)  
.452" x .552"



40-lead TSOP (W8/EIE)  
10 x 20 mm



48-lead WFBGA (3T/MAQE)  
4 x 6 x .73 mm



48-lead TFBGA (8T/B3KE)  
6 x 8 x 1.2 mm



48-lead TSOP (W9/EKE)  
12 x 20 x 1.2 mm

#### RF Devices



6-lead XSON (QX/QX6E)  
1.5 x 1.5 x .5 mm



8-lead XSON (Q7/QX8E)  
2 x 2 x .5 mm



6-lead UQFN (QU/QU6E)  
3 x 1.6 x .5 mm



16-lead LFLGA (MF/MLCF)  
4 x 4 x 1.4 mm

#### 8051-based Microcontrollers



44-lead PLCC (T2/NJE)  
.652" x .652"

Packages are shown approximate size.

Additional packages are available – contact your local Microchip sales office for additional information.

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[www.microchip.com](http://www.microchip.com)

Microchip Technology Inc.  
2355 W. Chandler Blvd.  
Chandler, AZ 85224-6199