

# MC79L00A Series

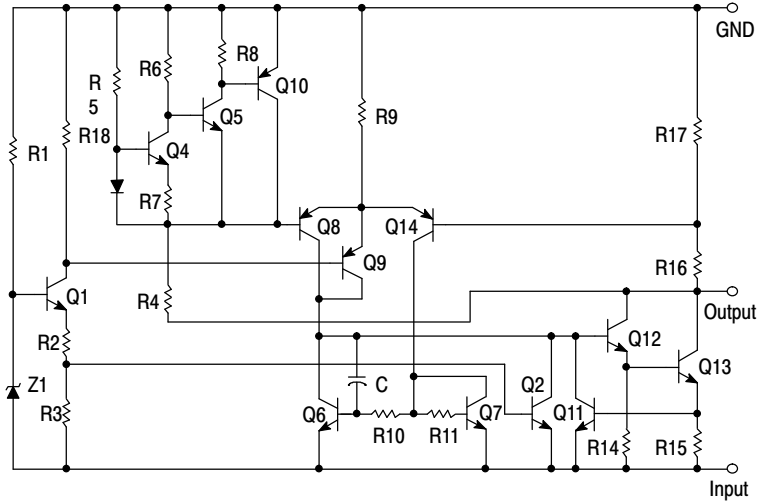
## 100 mA Negative Voltage Regulators

The MC79L00A Series negative voltage regulators are inexpensive, easy-to-use devices suitable for numerous applications requiring up to 100 mA. Like the higher powered MC7900 Series negative regulators, this series features thermal shutdown and current limiting, making them remarkably rugged. In most applications, no external components are required for operation.

The MC79L00A devices are useful for on-card regulation or any other application where a regulated negative voltage at a modest current level is needed. These regulators offer substantial advantage over the common resistor/Zener diode approach.

### Features

- No External Components Required
- Internal Short Circuit Current Limiting
- Internal Thermal Overload Protection
- Low Cost
- Complementary Positive Regulators Offered (MC78L00 Series)
- Pb-Free Packages are Available



\* Automotive temperature range selections are available with special test conditions and additional tests in 5, 12 and 15 V devices. Contact your local ON Semiconductor sales office for information.

Figure 1. Representative Schematic Diagram

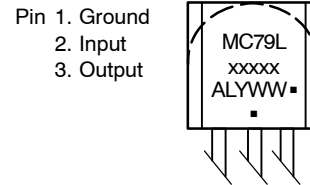
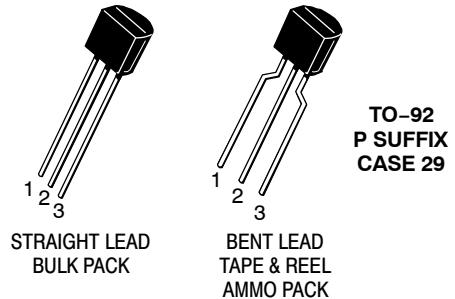
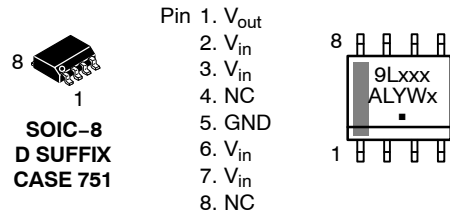


ON Semiconductor®

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### THREE-TERMINAL LOW CURRENT NEGATIVE FIXED VOLTAGE REGULATORS

#### MARKING DIAGRAMS



- xxx = Specific Device Code
- A = Assembly Location
- L = Wafer Lot
- Y = Year
- W, WW = Work Week
- y = B or C
- = Pb-Free Package

(Note: Microdot may be in either location)

#### ORDERING INFORMATION

See detailed ordering and shipping information in the package dimensions section on page 7 of this data sheet.

## MC79L00A Series

### MAXIMUM RATINGS ( $T_A = +25^\circ\text{C}$ , unless otherwise noted.)

| Rating   | Symbol   | Value  | Unit   |
|--|--|--|--|
| Input Voltage<br>(-5 V)<br>(-12, -15, -18 V)<br>(-24 V)  | $V_I$  | -30<br>-35<br>-40  | Vdc  |
| Power Dissipation<br>Case 29 (TO-92 Type)<br>$T_A = 25^\circ\text{C}$<br>Thermal Resistance, Junction-to-Ambient<br>Thermal Resistance, Junction-to-Case<br><br>Case 751 (SOIC-8 Type) (Note 1)<br>$T_A = 25^\circ\text{C}$<br>Thermal Resistance, Junction-to-Ambient<br>Thermal Resistance, Junction-to-Case | PD<br>$R_{\theta JA}$<br>$R_{\theta JC}$<br><br>PD<br>$R_{\theta JA}$<br>$R_{\theta JC}$ | Internally Limited<br>160<br>83<br><br>Internally Limited<br>180<br>45 | W<br>$^\circ\text{C/W}$<br>$^\circ\text{C/W}$<br><br>W<br>$^\circ\text{C/W}$<br>$^\circ\text{C/W}$ |
| Storage Temperature Range  | $T_{stg}$  | -65 to +150  | $^\circ\text{C}$   |
| Junction Temperature   | $T_J$  | +150   | $^\circ\text{C}$   |

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

1. SOIC-8 Junction-to-Ambient Thermal Resistance is for minimum recommended pad size. Refer to Figure 9 for Thermal Resistance variation versus pad size.

\*This device series contains ESD protection and exceeds the following tests:

Human Body Model 2000 V per MIL\_STD\_883, Method 3015

Machine Model Method 200 V.

### ELECTRICAL CHARACTERISTICS ( $V_I = -10\text{ V}$ , $I_O = 40\text{ mA}$ , $C_I = 0.33\text{ }\mu\text{F}$ , $C_O = 0.1\text{ }\mu\text{F}$ , $-40^\circ\text{C} < T_J < +125^\circ\text{C}$ (for MC79LXXAB), $0^\circ\text{C} < T_J < +125^\circ\text{C}$ (for MC79LXXAC)).

| Characteristics   | Symbol              | MC79L05AC, AB  |      |                | Unit          |
|---|---------------------|----------------|------|----------------|---------------|
|   |                     | Min            | Typ  | Max            |               |
| Output Voltage ( $T_J = +25^\circ\text{C}$ )  | $V_O$               | -4.8           | -5.0 | -5.2           | Vdc           |
| Input Regulation ( $T_J = +25^\circ\text{C}$ )<br>-7.0 Vdc $\geq V_I \geq -20\text{ Vdc}$<br>-8.0 Vdc $\geq V_I \geq -20\text{ Vdc}$  | $\text{Reg}_{line}$ | -              | -    | 150<br>100     | mV            |
| Load Regulation<br>$T_J = +25^\circ\text{C}$ , $1.0\text{ mA} \leq I_O \leq 100\text{ mA}$<br>$1.0\text{ mA} \leq I_O \leq 40\text{ mA}$                                      | $\text{Reg}_{load}$ | -              | -    | 60<br>30       | mV            |
| Output Voltage<br>-7.0 Vdc $\geq V_I \geq -20\text{ Vdc}$ , $1.0\text{ mA} \leq I_O \leq 40\text{ mA}$<br>$V_I = -10\text{ Vdc}$ , $1.0\text{ mA} \leq I_O \leq 70\text{ mA}$ | $V_O$               | -4.75<br>-4.75 | -    | -5.25<br>-5.25 | Vdc           |
| Input Bias Current<br>( $T_J = +25^\circ\text{C}$ )<br>( $T_J = +125^\circ\text{C}$ )   | $I_{IB}$            | -              | -    | 6.0<br>5.5     | mA            |
| Input Bias Current Change<br>-8.0 Vdc $\geq V_I \geq -20\text{ Vdc}$<br>$1.0\text{ mA} \leq I_O \leq 40\text{ mA}$  | $I_{IB}$            | -              | -    | 1.5<br>0.1     | mA            |
| Output Noise Voltage ( $T_A = +25^\circ\text{C}$ , $10\text{ Hz} \leq f \leq 100\text{ kHz}$ )  | $V_n$               | -              | 40   | -              | $\mu\text{V}$ |
| Ripple Rejection ( $-8.0 \geq V_I \geq -18\text{ Vdc}$ , $f = 120\text{ Hz}$ , $T_J = +25^\circ\text{C}$ )  | RR                  | 41             | 49   | -              | dB            |
| Dropout Voltage ( $I_O = 40\text{ mA}$ , $T_J = +25^\circ\text{C}$ )  | $ V_I - V_O $       | -              | 1.7  | -              | Vdc           |

## MC79L00A Series

**ELECTRICAL CHARACTERISTICS** ( $V_I = -19\text{ V}$ ,  $I_O = 40\text{ mA}$ ,  $C_I = 0.33\text{ }\mu\text{F}$ ,  $C_O = 0.1\text{ }\mu\text{F}$ ,  $-40^\circ\text{C} < T_J + 125^\circ\text{C}$  (for MC79LXXAB),  $0^\circ\text{C} < T_J < +125^\circ\text{C}$  (for MC79LXXAC)).

| Characteristics  | Symbol              | MC79L12AC, AB  |     |                | Unit          |
|--|---------------------|----------------|-----|----------------|---------------|
|  |                     | Min            | Typ | Max            |               |
| Output Voltage ( $T_J = +25^\circ\text{C}$ )   | $V_O$               | -11.5          | -12 | -12.5          | Vdc           |
| Input Regulation ( $T_J = +25^\circ\text{C}$ )<br>-14.5 Vdc $\geq V_I \geq -27\text{ Vdc}$<br>-16 Vdc $\geq V_I \geq -27\text{ Vdc}$   | Reg <sub>line</sub> | -              | -   | 250<br>200     | mV            |
| Load Regulation<br>$T_J = +25^\circ\text{C}$ , $1.0\text{ mA} \leq I_O \leq 100\text{ mA}$<br>$1.0\text{ mA} \leq I_O \leq 40\text{ mA}$                                       | Reg <sub>load</sub> | -              | -   | 100<br>50      | mV            |
| Output Voltage<br>-14.5 Vdc $\geq V_I \geq -27\text{ Vdc}$ , $1.0\text{ mA} \leq I_O \leq 40\text{ mA}$<br>$V_I = -19\text{ Vdc}$ , $1.0\text{ mA} \leq I_O \leq 70\text{ mA}$ | $V_O$               | -11.4<br>-11.4 | -   | -12.6<br>-12.6 | Vdc           |
| Input Bias Current<br>( $T_J = +25^\circ\text{C}$ )<br>( $T_J = +125^\circ\text{C}$ )  | $I_{IB}$            | -              | -   | 6.5<br>6.0     | mA            |
| Input Bias Current Change<br>-16 Vdc $\geq V_I \geq -27\text{ Vdc}$<br>$1.0\text{ mA} \leq I_O \leq 40\text{ mA}$  | $I_{IB}$            | -              | -   | 1.5<br>0.2     | mA            |
| Output Noise Voltage ( $T_A = +25^\circ\text{C}$ , $10\text{ Hz} \leq f \leq 100\text{ kHz}$ )   | $V_n$               | -              | 80  | -              | $\mu\text{V}$ |
| Ripple Rejection ( $-15 \leq V_I \leq -25\text{ Vdc}$ , $f = 120\text{ Hz}$ , $T_J = +25^\circ\text{C}$ )  | RR                  | 37             | 42  | -              | dB            |
| Dropout Voltage ( $I_O = 40\text{ mA}$ , $T_J = +25^\circ\text{C}$ )   | $ V_I - V_O $       | -              | 1.7 | -              | Vdc           |

**ELECTRICAL CHARACTERISTICS** ( $V_I = -23\text{ V}$ ,  $I_O = 40\text{ mA}$ ,  $C_I = 0.33\text{ }\mu\text{F}$ ,  $C_O = 0.1\text{ }\mu\text{F}$ ,  $-40^\circ\text{C} < T_J + 125^\circ\text{C}$  (for MC79LXXAB),  $0^\circ\text{C} < T_J < +125^\circ\text{C}$  (for MC79LXXAC)).

| Characteristics  | Symbol              | MC79L15AC, AB    |     |                  | Unit          |
|--|---------------------|------------------|-----|------------------|---------------|
|  |                     | Min              | Typ | Max              |               |
| Output Voltage ( $T_J = +25^\circ\text{C}$ )   | $V_O$               | -14.4            | -15 | -15.6            | Vdc           |
| Input Regulation ( $T_J = +25^\circ\text{C}$ )<br>-17.5 Vdc $\geq V_I \geq -30\text{ Vdc}$<br>-20 Vdc $\geq V_I \geq -30\text{ Vdc}$                                 | Reg <sub>line</sub> | -                | -   | 300<br>250       | mV            |
| Load Regulation<br>$T_J = +25^\circ\text{C}$ , $1.0\text{ mA} \leq I_O \leq 100\text{ mA}$<br>$1.0\text{ mA} \leq I_O \leq 40\text{ mA}$                             | Reg <sub>load</sub> | -                | -   | 150<br>75        | mV            |
| Output Voltage<br>-17.5 Vdc $\geq V_I \geq -Vdc$ , $1.0\text{ mA} \leq I_O \leq 40\text{ mA}$<br>$V_I = -23\text{ Vdc}$ , $1.0\text{ mA} \leq I_O \leq 70\text{ mA}$ | $V_O$               | -14.25<br>-14.25 | -   | -15.75<br>-15.75 | Vdc           |
| Input Bias Current<br>( $T_J = +25^\circ\text{C}$ )<br>( $T_J = +125^\circ\text{C}$ )  | $I_{IB}$            | -                | -   | 6.5<br>6.0       | mA            |
| Input Bias Current Change<br>-20 Vdc $\geq V_I \geq -30\text{ Vdc}$<br>$1.0\text{ mA} \leq I_O \leq 40\text{ mA}$  | $\Delta I_{IB}$     | -                | -   | 1.5<br>0.1       | mA            |
| Output Noise Voltage ( $T_A = +25^\circ\text{C}$ , $10\text{ Hz} \leq f \leq 100\text{ kHz}$ )   | $V_N$               | -                | 90  | -                | $\mu\text{V}$ |
| Ripple Rejection ( $-18.5 \leq V_I \leq -28.5\text{ Vdc}$ , $f = 120\text{ Hz}$ )  | RR                  | 34               | 39  | -                | dB            |
| Dropout Voltage $I_O = 40\text{ mA}$ , $T_J = +25^\circ\text{C}$   | $ V_I - V_O $       | -                | 1.7 | -                | Vdc           |

## MC79L00A Series

**ELECTRICAL CHARACTERISTICS** ( $V_I = -27\text{ V}$ ,  $I_O = 40\text{ mA}$ ,  $C_I = 0.33\text{ }\mu\text{F}$ ,  $C_O = 0.1\text{ }\mu\text{F}$ ,  $-40^\circ\text{C} < T_J + 125^\circ\text{C}$  (for MC79LXXAB),  $0^\circ\text{C} < T_J < +125^\circ\text{C}$  (for MC79LXXAC), unless otherwise noted).

| Characteristics   | Symbol                     | MC79L18AC           |             |                      | Unit          |
|---|----------------------------|---------------------|-------------|----------------------|---------------|
|   |                            | Min                 | Typ         | Max                  |               |
| Output Voltage ( $T_J = +25^\circ\text{C}$ )  | $V_O$                      | -17.3               | -18         | -18.7                | Vdc           |
| Input Regulation ( $T_J = +25^\circ\text{C}$ )<br>-20.7 Vdc $\geq V_I \geq -33\text{ Vdc}$<br>-21.4 Vdc $\geq V_I \geq -33\text{ Vdc}$<br>-22 Vdc $\geq V_I \geq -33\text{ Vdc}$<br>-21 Vdc $\geq V_I \geq -33\text{ Vdc}$  | $\text{Reg}_{\text{line}}$ | -                   | -           | 325<br>-<br>-<br>275 | mV            |
| Load Regulation<br>$T_J = +25^\circ\text{C}$ , $1.0\text{ mA} \leq I_O \leq 100\text{ mA}$<br>$1.0\text{ mA} \leq I_O \leq 40\text{ mA}$  | $\text{Reg}_{\text{load}}$ | -                   | -           | 170<br>85            | mV            |
| Output Voltage<br>-20.7 Vdc $\geq V_I \geq -33\text{ Vdc}$ , $1.0\text{ mA} \leq I_O \leq 40\text{ mA}$<br>-21.4 Vdc $\geq V_I \geq -33\text{ Vdc}$ , $1.0\text{ mA} \leq I_O \leq 40\text{ mA}$<br>$V_I = -27\text{ Vdc}$ , $1.0\text{ mA} \leq I_O \leq 70\text{ mA}$ | $V_O$                      | -17.1<br>-<br>-17.1 | -<br>-<br>- | -18.9<br>-<br>-18.9  | Vdc           |
| Input Bias Current<br>( $T_J = +25^\circ\text{C}$ )<br>( $T_J = +125^\circ\text{C}$ )   | $I_{\text{IB}}$            | -<br>-              | -<br>-      | 6.5<br>6.0           | mA            |
| Input Bias Current Change<br>-21 Vdc $\geq V_I \geq -33\text{ Vdc}$<br>-27 Vdc $\geq V_I \geq -33\text{ Vdc}$<br>$1.0\text{ mA} \leq I_O \leq 40\text{ mA}$   | $I_{\text{IB}}$            | -<br>-<br>-         | -<br>-<br>- | 1.5<br>-<br>0.1      | mA            |
| Output Noise Voltage ( $T_A = +25^\circ\text{C}$ , $10\text{ Hz} \leq f \leq 100\text{ kHz}$ )  | $V_n$                      | -                   | 150         | -                    | $\mu\text{V}$ |
| Ripple Rejection ( $-23 \leq V_I \leq -33\text{ Vdc}$ , $f = 120\text{ Hz}$ , $T_J = +25^\circ\text{C}$ )   | RR                         | 33                  | 48          | -                    | dB            |
| Dropout Voltage $I_O = 40\text{ mA}$ , $T_J = +25^\circ\text{C}$  | $ V_I - V_O $              | -                   | 1.7         | -                    | Vdc           |

**ELECTRICAL CHARACTERISTICS** ( $V_I = -33\text{ V}$ ,  $I_O = 40\text{ mA}$ ,  $C_I = 0.33\text{ }\mu\text{F}$ ,  $C_O = 0.1\text{ }\mu\text{F}$ ,  $-40^\circ\text{C} < T_J + 125^\circ\text{C}$  (for MC79LXXAB),  $0^\circ\text{C} < T_J < +125^\circ\text{C}$  (for MC79LXXAC), unless otherwise noted).

| Characteristics   | Symbol                     | MC79L24AC           |             |                     | Unit          |
|---|----------------------------|---------------------|-------------|---------------------|---------------|
|   |                            | Min                 | Typ         | Max                 |               |
| Output Voltage ( $T_J = +25^\circ\text{C}$ )  | $V_O$                      | -23                 | -24         | -25                 | Vdc           |
| Input Regulation ( $T_J = +25^\circ\text{C}$ )<br>-27 Vdc $\geq V_I \geq -38\text{ Vdc}$<br>-27.5 Vdc $\geq V_I \geq -38\text{ Vdc}$<br>-28 Vdc $\geq V_I \geq -38\text{ Vdc}$  | $\text{Reg}_{\text{line}}$ | -                   | -           | 350<br>-<br>300     | mV            |
| Load Regulation<br>$T_J = +25^\circ\text{C}$ , $1.0\text{ mA} \leq I_O \leq 100\text{ mA}$<br>$1.0\text{ mA} \leq I_O \leq 40\text{ mA}$  | $\text{Reg}_{\text{load}}$ | -                   | -           | 200<br>100          | mV            |
| Output Voltage<br>-27 Vdc $\geq V_I \geq -38\text{ Vdc}$ , $1.0\text{ mA} \leq I_O \leq 40\text{ mA}$<br>-28 Vdc $\geq V_I \geq -38\text{ Vdc}$ , $1.0\text{ mA} \leq I_O \leq 40\text{ mA}$<br>$V_I = -33\text{ Vdc}$ , $1.0\text{ mA} \leq I_O \leq 70\text{ mA}$ | $V_O$                      | -22.8<br>-<br>-22.8 | -<br>-<br>- | -25.2<br>-<br>-25.2 | Vdc           |
| Input Bias Current<br>( $T_J = +25^\circ\text{C}$ )<br>( $T_J = +125^\circ\text{C}$ )   | $I_{\text{IB}}$            | -<br>-              | -<br>-      | 6.5<br>6.0          | mA            |
| Input Bias Current Change<br>-28 Vdc $\geq V_I \geq -38\text{ Vdc}$<br>$1.0\text{ mA} \leq I_O \leq 40\text{ mA}$   | $\Delta I_{\text{IB}}$     | -<br>-              | -<br>-      | 1.5<br>0.1          | mA            |
| Output Noise Voltage ( $T_A = +25^\circ\text{C}$ , $10\text{ Hz} \leq f \leq 100\text{ kHz}$ )  | $V_n$                      | -                   | 200         | -                   | $\mu\text{V}$ |
| Ripple Rejection ( $-29 \leq V_I \leq -35\text{ Vdc}$ , $f = 120\text{ Hz}$ , $T_J = +25^\circ\text{C}$ )   | RR                         | 31                  | 47          | -                   | dB            |
| Dropout Voltage $I_O = 40\text{ mA}$ , $T_J = +25^\circ\text{C}$  | $ V_I - V_O $              | -                   | 1.7         | -                   | Vdc           |

# MC79L00A Series

## APPLICATIONS INFORMATION

### Design Considerations

The MC79L00A Series of fixed voltage regulators are designed with Thermal Overload Protections that shuts down the circuit when subjected to an excessive power overload condition, Internal Short Circuit Protection that limits the maximum current the circuit will pass.

In many low current applications, compensation capacitors are not required. However, it is recommended that the regulator input be bypassed with a capacitor if the regulator is connected to the power supply filter with long wire length, or if the output load capacitance is large. An input bypass capacitor should be selected to provide good

high-frequency characteristics to insure stable operation under all load conditions. A 0.33  $\mu\text{F}$  or larger tantalum, mylar, or other capacitor having low internal impedance at high frequencies should be chosen. The bypass capacitor should be mounted with the shortest possible leads directly across the regulator's input terminals. Normally good construction techniques should be used to minimize ground loops and lead resistance drops since the regulator has no external sense lead. Bypassing the output is also recommended.

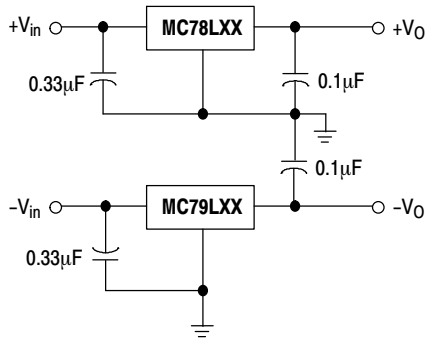
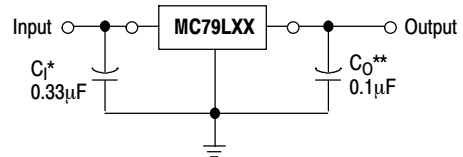


Figure 2. Positive and Negative Regulator



A common ground is required between the input and the output voltages. The input voltage must remain typically 2.0 V above the output voltage even during the low point on the ripple voltage.

\*  $C_I$  is required if regulator is located an appreciable distance from the power supply filter

\*\*  $C_O$  improves stability and transient response.

Figure 3. Standard Application

# MC79L00A Series

## TYPICAL CHARACTERISTICS

( $T_A = +25^\circ\text{C}$ , unless otherwise noted.)

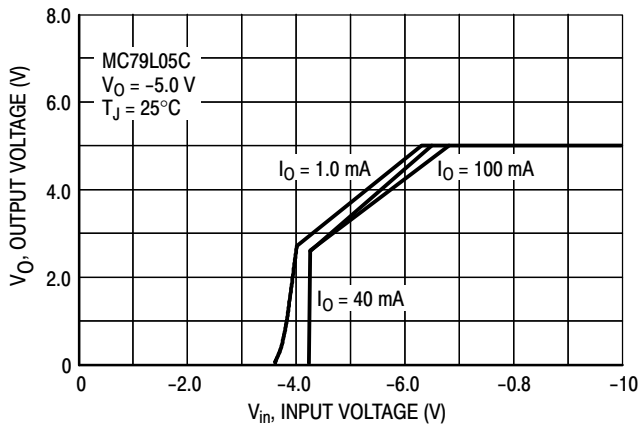


Figure 4. Dropout Characteristics

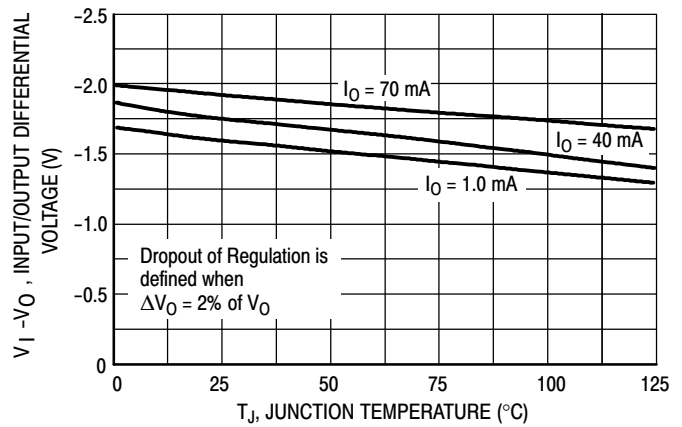


Figure 5. Dropout Voltage versus Junction Temperature

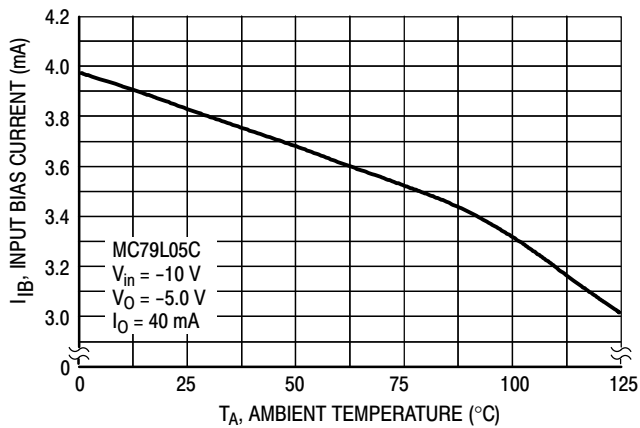


Figure 6. Input Bias Current versus Ambient Temperature

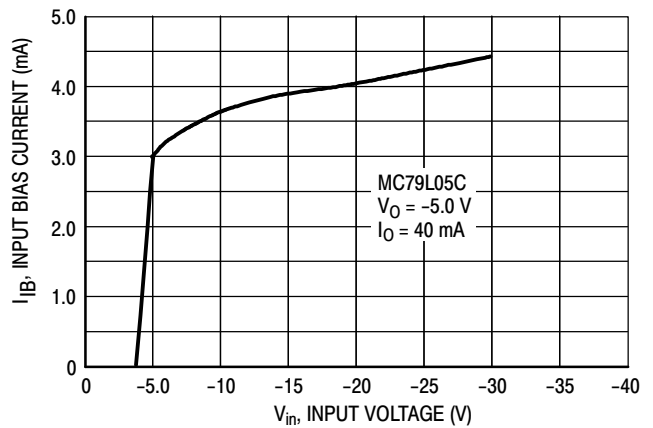


Figure 7. Input Bias Current versus Input Voltage

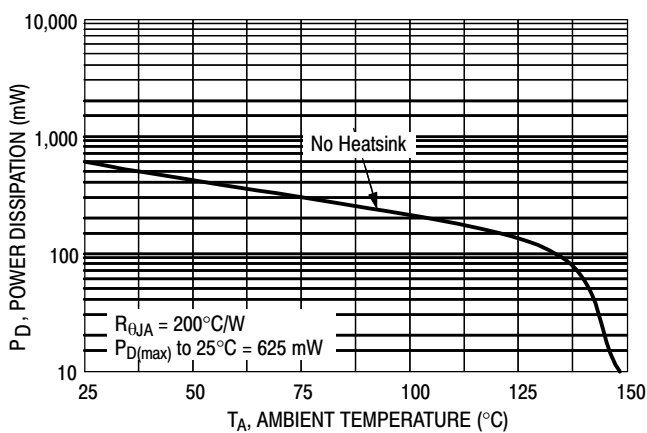


Figure 8. Maximum Average Power Dissipation versus Ambient Temperature (TO-92)

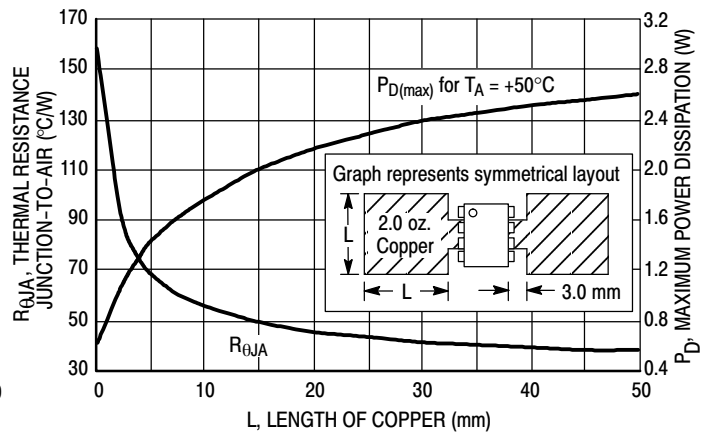


Figure 9. SOP-8 Thermal Resistance and Maximum Power Dissipation versus P.C.B. Copper Length

## MC79L00A Series

### ORDERING INFORMATION

| Device        | Nominal Voltage | Operating Temperature Range | Package           | Shipping†          |                  |                    |
|---------------|-----------------|-----------------------------|-------------------|--------------------|------------------|--------------------|
| MC79L05ABD    | -5.0 V          | TJ = -40° to +125°C         | SOIC-8            | 98 Units / Rail    |                  |                    |
| MC79L05ABDG   |                 |                             | SOIC-8 (Pb-Free)  | 98 Units / Rail    |                  |                    |
| MC79L05ABDR2  |                 |                             | SOIC-8            | 2500 / Tape & Reel |                  |                    |
| MC79L05ABDR2G |                 |                             | SOIC-8 (Pb-Free)  | 2500 / Tape & Reel |                  |                    |
| MC79L05ABP    |                 |                             | TO-92             | 2000 Units / Bag   |                  |                    |
| MC79L05ABPG   |                 |                             | TO-92 (Pb-Free)   | 2000 Units / Bag   |                  |                    |
| MC79L05ABPRA  |                 |                             | TO-92             | 2000 / Tape & Reel |                  |                    |
| MC79L05ABPRAG |                 |                             | TO-92 (Pb-Free)   | 2000 / Tape & Reel |                  |                    |
| MC79L05ACD    |                 |                             | TJ = 0° to +125°C | TJ = 0° to +125°C  | SOIC-8           | 98 Units / Rail    |
| MC79L05ACDG   |                 |                             |                   |                    | SOIC-8 (Pb-Free) | 98 Units / Rail    |
| MC79L05ACDR2  |                 |                             |                   |                    | SOIC-8           | 2500 / Tape & Reel |
| MC79L05ACDR2G |                 |                             |                   |                    | SOIC-8 (Pb-Free) | 2500 / Tape & Reel |
| MC79L05ACP    |                 |                             |                   |                    | TO-92            | 2000 Units / Bag   |
| MC79L05ACPG   |                 |                             |                   |                    | TO-92 (Pb-Free)  | 2000 Units / Bag   |
| MC79L05ACPRA  | TO-92           | 2000 / Tape & Reel          |                   |                    |                  |                    |
| MC79L05ACPRAG | TO-92 (Pb-Free) | 2000 / Tape & Reel          |                   |                    |                  |                    |
| MC79L05ACPRM  | TO-92           | 2000 / Tape & Ammo Box      |                   |                    |                  |                    |
| MC79L05ACPRMG | TO-92 (Pb-Free) | 2000 / Tape & Ammo Box      |                   |                    |                  |                    |
| MC79L05ACPRP  | TO-92           | 2000 / Tape & Ammo Box      |                   |                    |                  |                    |
| MC79L05ACPRPG | TO-92 (Pb-Free) | 2000 / Tape & Ammo Box      |                   |                    |                  |                    |
| MC79L12ABD    | -12 V           | TJ = -40° to +125°C         |                   |                    | SOIC-8           | 98 Units / Rail    |
| MC79L12ABDG   |                 |                             |                   |                    | SOIC-8 (Pb-Free) | 98 Units / Rail    |
| MC79L12ABDR2  |                 |                             | SOIC-8            | 2500 / Tape & Reel |                  |                    |
| MC79L12ABDR2G |                 |                             | SOIC-8 (Pb-Free)  | 2500 / Tape & Reel |                  |                    |
| MC79L12ABP    |                 |                             | TO-92             | 2000 Units / Bag   |                  |                    |
| MC79L12ABPG   |                 |                             | TO-92 (Pb-Free)   | 2000 Units / Bag   |                  |                    |
| MC79L12ABPRA  |                 |                             | TO-92             | 2000 / Tape & Reel |                  |                    |
| MC79L12ABPRAG |                 |                             | TO-92 (Pb-Free)   | 2000 / Tape & Reel |                  |                    |

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

# MC79L00A Series

## ORDERING INFORMATION

| Device        | Nominal Voltage   | Operating Temperature Range | Package                | Shipping†              |                    |
|---------------|-------------------|-----------------------------|------------------------|------------------------|--------------------|
| MC79L12ACD    | -12 V             | TJ = 0° to +125°C           | SOIC-8                 | 98 Units / Rail        |                    |
| MC79L12ACDG   |                   |                             | SOIC-8 (Pb-Free)       | 98 Units / Rail        |                    |
| MC79L12ACDR2  |                   |                             | SOIC-8                 | 2500 / Tape & Reel     |                    |
| MC79L12ACDR2G |                   |                             | SOIC-8 (Pb-Free)       | 2500 / Tape & Reel     |                    |
| MC79L12ACP    |                   |                             | TO-92                  | 2000 Units / Bag       |                    |
| MC79L12ACPG   |                   |                             | TO-92 (Pb-Free)        | 2000 Units / Bag       |                    |
| MC79L12ACPRA  |                   |                             | TO-92                  | 2000 / Tape & Reel     |                    |
| MC79L12ACPRAG |                   |                             | TO-92 (Pb-Free)        | 2000 / Tape & Reel     |                    |
| MC79L12ACPRP  |                   |                             | TO-92                  | 2000 / Tape & Ammo Box |                    |
| MC79L12ACPRPG |                   |                             | TO-92 (Pb-Free)        | 2000 / Tape & Ammo Box |                    |
| MC79L15ABD    |                   |                             | -15 V                  | TJ = -40° to +125°C    | SOIC-8             |
| MC79L15ABDG   | SOIC-8 (Pb-Free)  | 98 Units / Rail             |                        |                        |                    |
| MC79L15ABDR2  | SOIC-8            | 2500 / Tape & Reel          |                        |                        |                    |
| MC79L15ABDR2G | SOIC-8 (Pb-Free)  | 2500 / Tape & Reel          |                        |                        |                    |
| MC79L15ABP    | TO-92             | 2000 Units / Bag            |                        |                        |                    |
| MC79L15ABPG   | TO-92 (Pb-Free)   | 2000 Units / Bag            |                        |                        |                    |
| MC79L15ABPRP  | TO-92             | 2000 / Tape & Ammo Box      |                        |                        |                    |
| MC79L15ABPRPG | TO-92 (Pb-Free)   | 2000 / Tape & Ammo Box      |                        |                        |                    |
| MC79L15ACD    | TJ = 0° to +125°C | SOIC-8                      |                        |                        | 98 Units / Rail    |
| MC79L15ACDG   |                   | SOIC-8 (Pb-Free)            |                        |                        | 98 Units / Rail    |
| MC79L15ACDR2  |                   | SOIC-8                      |                        |                        | 2500 / Tape & Reel |
| MC79L15ACDR2G |                   | SOIC-8 (Pb-Free)            | 2500 / Tape & Reel     |                        |                    |
| MC79L15ACP    |                   | TO-92                       | 2000 Units / Bag       |                        |                    |
| MC79L15ACPG   |                   | TO-92 (Pb-Free)             | 2000 Units / Bag       |                        |                    |
| MC79L15ACPRA  |                   | TO-92                       | 2000 / Tape & Reel     |                        |                    |
| MC79L15ACPRAG |                   | TO-92 (Pb-Free)             | 2000 / Tape & Reel     |                        |                    |
| MC79L15ACPRE  |                   | TO-92                       | 2000 / Tape & Reel     |                        |                    |
| MC79L15ACPREG |                   | TO-92 (Pb-Free)             | 2000 / Tape & Reel     |                        |                    |
| MC79L15ACPRP  |                   | TO-92                       | 2000 / Tape & Ammo Box |                        |                    |
| MC79L15ACPRPG |                   | TO-92 (Pb-Free)             | 2000 / Tape & Ammo Box |                        |                    |

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.



## MC79L00A Series

### ORDERING INFORMATION

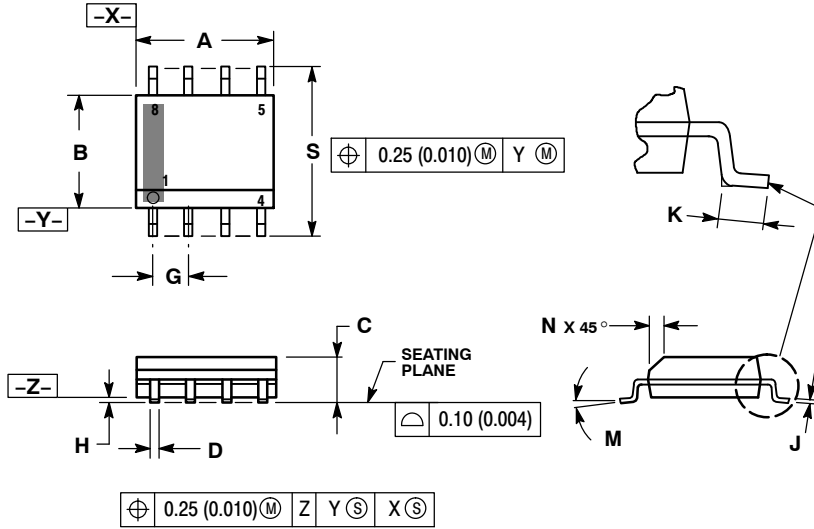
| Device        | Nominal Voltage | Operating Temperature Range | Package         | Shipping†              |
|---------------|-----------------|-----------------------------|-----------------|------------------------|
| MC79L18ABPRP  | -18 V           | TJ = -40° to +125°C         | TO-92           | 2000 / Tape & Ammo Box |
| MC79L18ABPRPG |                 |                             | TO-92 (Pb-Free) | 2000 / Tape & Ammo Box |
| MC79L18ACP    |                 | TJ = 0° to +125°C           | TO-92           | 2000 Units / Bag       |
| MC79L18ACPG   |                 |                             | TO-92 (Pb-Free) | 2000 Units / Bag       |
| MC79L24ABP    | -24 V           | TJ = -40° to +125°C         | TO-92           | 2000 Units / Bag       |
| MC79L24ABPG   |                 |                             | TO-92 (Pb-Free) | 2000 Units / Bag       |
| MC79L24ACP    |                 | TJ = 0° to +125°C           | TO-92           | 2000 Units / Bag       |
| MC79L24ACPG   |                 |                             | TO-92 (Pb-Free) | 2000 Units / Bag       |
| MC79L24ACPRM  |                 |                             | TO-92           | 2000 / Tape & Ammo Box |
| MC79L24ACPRMG |                 |                             | TO-92 (Pb-Free) | 2000 / Tape & Ammo Box |
| MC79L24ACPRP  |                 |                             | TO-92           | 2000 / Tape & Ammo Box |
| MC79L24ACPRPG |                 |                             | TO-92 (Pb-Free) | 2000 / Tape & Ammo Box |

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

# MC79L00A Series

## PACKAGE DIMENSIONS

SOIC-8  
CASE 751-07  
ISSUE AJ

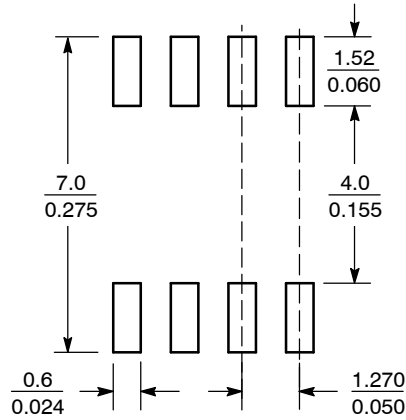


**NOTES:**

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETER.
3. DIMENSION A AND B DO NOT INCLUDE MOLD PROTRUSION.
4. MAXIMUM MOLD PROTRUSION 0.15 (0.006) PER SIDE.
5. DIMENSION D DOES NOT INCLUDE DAMBAR PROTRUSION. ALLOWABLE DAMBAR PROTRUSION SHALL BE 0.127 (0.005) TOTAL IN EXCESS OF THE D DIMENSION AT MAXIMUM MATERIAL CONDITION.
6. 751-01 THRU 751-06 ARE OBSOLETE. NEW STANDARD IS 751-07.

| DIM | MILLIMETERS |      | INCHES    |       |
|-----|-------------|------|-----------|-------|
|     | MIN         | MAX  | MIN       | MAX   |
| A   | 4.80        | 5.00 | 0.189     | 0.197 |
| B   | 3.80        | 4.00 | 0.150     | 0.157 |
| C   | 1.35        | 1.75 | 0.053     | 0.069 |
| D   | 0.33        | 0.51 | 0.013     | 0.020 |
| G   | 1.27 BSC    |      | 0.050 BSC |       |
| H   | 0.10        | 0.25 | 0.004     | 0.010 |
| J   | 0.19        | 0.25 | 0.007     | 0.010 |
| K   | 0.40        | 1.27 | 0.016     | 0.050 |
| M   | 0° - 8°     |      | 0° - 8°   |       |
| N   | 0.25        | 0.50 | 0.010     | 0.020 |
| S   | 5.80        | 6.20 | 0.228     | 0.244 |

### SOLDERING FOOTPRINT\*



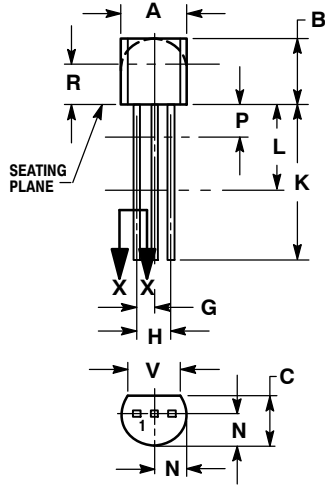
SCALE 6:1  $\left(\frac{\text{mm}}{\text{inches}}\right)$

\*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

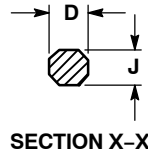
# MC79L00A Series

## PACKAGE DIMENSIONS

TO-92 (TO-226)  
CASE 29-11  
ISSUE AM



STRAIGHT LEAD  
BULK PACK

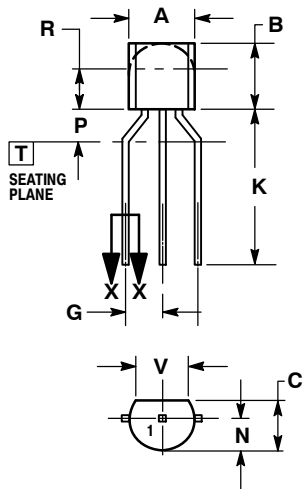


SECTION X-X

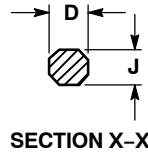
NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
4. LEAD DIMENSION IS UNCONTROLLED IN P AND BEYOND DIMENSION K MINIMUM.

| DIM | INCHES |       | MILLIMETERS |       |
|-----|--------|-------|-------------|-------|
|     | MIN    | MAX   | MIN         | MAX   |
| A   | 0.175  | 0.205 | 4.45        | 5.20  |
| B   | 0.170  | 0.210 | 4.32        | 5.33  |
| C   | 0.125  | 0.165 | 3.18        | 4.19  |
| D   | 0.016  | 0.021 | 0.407       | 0.533 |
| G   | 0.045  | 0.055 | 1.15        | 1.39  |
| H   | 0.095  | 0.105 | 2.42        | 2.66  |
| J   | 0.015  | 0.020 | 0.39        | 0.50  |
| K   | 0.500  | ---   | 12.70       | ---   |
| L   | 0.250  | ---   | 6.35        | ---   |
| N   | 0.080  | 0.105 | 2.04        | 2.66  |
| P   | ---    | 0.100 | ---         | 2.54  |
| R   | 0.115  | ---   | 2.93        | ---   |
| V   | 0.135  | ---   | 3.43        | ---   |



BENT LEAD  
TAPE & REEL  
AMMO PACK



SECTION X-X

NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
4. LEAD DIMENSION IS UNCONTROLLED IN P AND BEYOND DIMENSION K MINIMUM.

| DIM | MILLIMETERS |      |
|-----|-------------|------|
|     | MIN         | MAX  |
| A   | 4.45        | 5.20 |
| B   | 4.32        | 5.33 |
| C   | 3.18        | 4.19 |
| D   | 0.40        | 0.54 |
| G   | 2.40        | 2.80 |
| J   | 0.39        | 0.50 |
| K   | 12.70       | ---  |
| N   | 2.04        | 2.66 |
| P   | 1.50        | 4.00 |
| R   | 2.93        | ---  |
| V   | 3.43        | ---  |

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