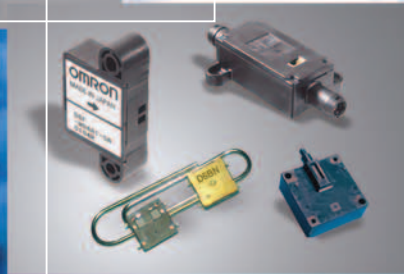
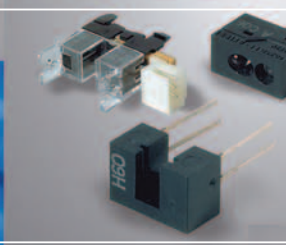


# Electronic Components

## Master Selection Guide



Relays  
Switches  
Photomicrosensors  
Micro Sensors  
Connectors

# Omron Electronic Components LLC

## Stability and Experience

With over 70 years experience, Omron continues to apply the latest technologies providing you with innovative efficient control component solutions. Our wide range of relays, switches, sensors, and connectors allows our customers to streamline vendor lists and reduce the cost of procurement.

## Quality First

### Our commitment, your benefit

Omron makes a conscious choice to relentlessly pursue quality. Our quality engineers are part of the design and manufacturing from the start. We design and evaluate at the component level, test and adjust during manufacturing, and examine every physical, mechanical, and electrical aspect of each final product before it leaves the factory.

## Customer Support

Omron's sales engineers, inside sales representatives, and customer service staff have experience with all types of electronic applications. No matter what the application or volume, we will find just the right component for your project.

## RoHS Compliant Products

Most of Omron's electronic components are already compliant, and we are striving for 100% compliance by mid 2006.

## Broad Product Offering

### Relays, The #1 Supplier In The World:

- MOS FET
- Low Signal
- RF/HF
- Power PCB
- Automotive
- General-Purpose
- Solid State

### Switches:

- Snap Action
- Tactile
- DIP
- Dome Array
- Thumbwheel
- Rocker

### Photomicrosensors:

- Slotted
- Reflective

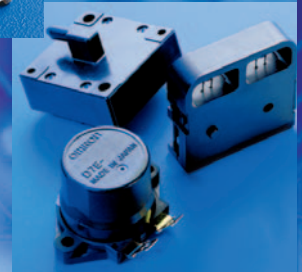
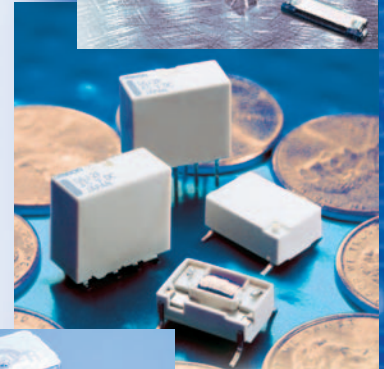
### Micro Sensors:

- Pressure
- Tilt
- Flow
- Shock/Vibration
- Clog Filter

### Connectors

- FPC
- FFC

Additional information can be found at [www.components.omron.com](http://www.components.omron.com), or by calling us at: 847.882.2288 Monday through Friday 7:30 AM until 6:00 PM CST. Our inside sales staff will be ready to provide you with detailed product information, technical design support, or the location of your local Omron sales office or authorized distributor.



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Email: [components@omron.com](mailto:components@omron.com)

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**OMRON**  
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**OMRON**  
ELECTRONIC COMPONENTS

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\* Sealed Snap Action switches are available on pages 26 & 27.

# Omron History & Profile

## History:

Omron was founded May 10, 1933 in Kyoto, Japan, by founder Kazuma Tateisi. The first product developed and released by Omron was a timer for X-ray equipment. Since then, Omron has expanded globally and produced a steady stream of breakthroughs in electronic components that have contributed to the improvement of productivity in many different industries. Omron's consistent striving to accurately anticipate the potential needs of society and develop businesses to satisfy those needs has made the Omron Group what it is today. Dr. Tateisi's passion and progressive attitude are instilled to this day in all Omron employees, and the challenge-oriented spirit remains the main source of Omron's identity. By consistently preserving the spirit and philosophy of Omron's founder, we are determined to continue meeting the challenges of creating a better tomorrow.

## Achievements:

- December 1943 – Development of Japan's first precision switch; established Omron (then Tateisi Electric) as a 'technological pioneer' in Japan.
- 1948 – Establishment of Omron Tateisi Electronics Co. coincided with the successful development and production of a new current limiter integrating Omron's precision switch and protective relay technologies.
- 1955-1965 – Launched the full-scale production of control components and the introduction of a steady stream of new products including advanced precision switches & compact protective relays.
- 1960 – Development of the innovative solid-state proximity switch and solid-state relay.
- 1963 – Introduction of the world's first automatic meal-ticket vending machine.
- 1969 and 1971 – Development of the first off-line and on-line automatic cash dispensers which established Omron as one of the pioneers of the banking revolution in Japan.
- 1967 – Completion of the world's first automated train station system achieved by drawing on the company's advanced card system technology.
- January 1990 – the company was renamed to Omron Corporation and marked a commitment to continue expansion of business lines and global-scale production.
- April 1999 – Omron establishes a strategic system of five specialized, independent business units.
- 2002 – Establishment of Omron China to accelerate market expansion in to China and Asia-Pacific.

## Profile:

Omron Corporation is a \$5.5 billion global leading supplier of electronics and control system components and services.

## Omron Business Fields:



**Electronic Components Business**




**Automotive Electronics Business**



**Social System Business**



**Industrial Automation Business**



**Healthcare Business**

# Omron's Core Competencies, Technologies & Markets Served



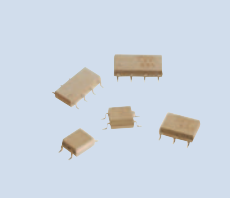

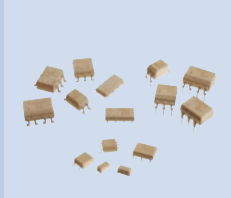
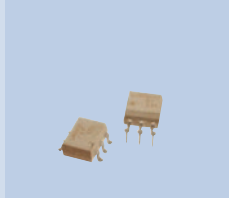
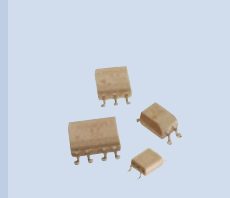
## Design Synthesis:

Our products' designs are based on a combination of our core competencies and core technologies to effectively meet customer and market needs. By efficiently and creatively manipulating these competencies, we are able to develop and manufacture a broad offering of cost effective, high quality, and environmentally friendly products. As the global market's demand for new and innovative products continues to grow, Omron pledges to expand its research and development of new core technologies.






## Commitment to the Environment:

Omron is committed to creating products that are designed with consideration for the environment throughout their entire lifespan (what we call "Eco-Products"). These considerations address energy and resource conservation, extended product life, reuse and recycling, as well as avoidance of hazardous chemical substances. Our goal is to make a proactive contribution to reducing the harm caused by our societal system to the environment through the development of more environmentally sound products.

# Relays - MOS FET






					
	G3VM-200	G3VM-350	G3VM-400	G3VM High Voltage & Dielectric	G3VM Current Limiting
<i>General Attributes</i>					
<b>Dimensions mm (in)</b>	Please refer to specific data sheets for all dimensional information	Please refer to specific data sheets for all dimensional information	Please refer to specific data sheets for all dimensional information	Please refer to specific data sheets for all dimensional information	Please refer to specific data sheets for all dimensional information
<b>Features</b>	<ul style="list-style-type: none"> <li>• 1 &amp; 2 channel configurations</li> <li>• Ideal for Instrumentation, Broadband Systems, Measurement Devices, Data Loggers, Consumer Electronics, Medical Equipment</li> </ul>	<ul style="list-style-type: none"> <li>• Broad product offering</li> <li>• Form A &amp; Form B configurations</li> <li>• Ideal for Instrumentation, Broadband Systems, Measurement Devices, Data loggers, Consumer Electronics, Security Systems, Electronic Automatic Exchange Systems, Industrial Automation Equipment, Medical Equipment</li> </ul>	<ul style="list-style-type: none"> <li>• Broad product offering</li> <li>• 10kV surge withstand models available</li> <li>• Ideal for Instrumentation, Broadband Systems, Measurement Devices, Data Loggers, Consumer Electronics, Security Systems, Electronic Automatic Exchange Systems, Industrial Automation Equipment, Medical Equipment</li> </ul>	<ul style="list-style-type: none"> <li>• Capable of switching loads up to 600V (AC and DC)</li> <li>• 10kV surge withstand</li> <li>• Ideal for Instrumentation, Electronic Automatic Exchange Systems, Industrial Automation Devices, Security Systems, Medical Equipment</li> </ul>	<ul style="list-style-type: none"> <li>• Current limiting of 150 to 300mA</li> <li>• Ideal for Electronic Automatic Exchange Systems, Multi-function Telephones, Cordless Telephones, Measurement Devices, Instrumentation</li> </ul>
<b>Load voltage</b>	0-200V (AC or DC)	0-350V (AC or DC)	0-400V (AC or DC)	0-600V (AC or DC)	0-350V (AC or DC)
<b>Maximum Ratings and Electrical Characteristics</b>					
<b>Continuous load current</b>	0-50mA & 0-200mA	0-90mA, 0-100mA, 0-110mA, 0-120mA, 0-150mA	0-120mA	0-100mA	0-120mA
<b>ON resistance (typical)</b>	5Ω & 30Ω	15Ω, 27Ω, 30Ω, 25Ω, 40Ω	17Ω & 18Ω	25Ω	22Ω
<b>Output capacitance</b>	–	–	–	–	–
<b>Available switching configurations</b>	1 Form A, 2 Form A	1 Form A, 1 Form B, 1 Form A + 1 Form B, 2 Form A, 2 Form B	1 Form A, 2 Form A	1 Form A	1 Form A, 2 Form A
<b>Leakage current</b>	10nA (max.) & 1.0μA (max.)	1.0μA (max.)	1.0μA (max.)	1.0μA (max.)	1.0μA (max.)
<b>turn-ON time (typical)</b>	40ms & 600ms	0.1ms, 0.25ms, 0.3ms, 0.5ms, 1.0ms	0.3ms & 0.5ms	0.2ms	0.3ms & 0.5ms
<b>turn-OFF time (typical)</b>	100ms	0.1ms, 0.15ms, 0.5ms, 1.0ms, 3.0ms	0.1ms & 0.5ms	0.2ms	0.3ms & 0.5ms
<b>Dielectric strength (AC for 1 minute between input and output)</b>	1,500Vrms (min.)	1,500Vrms (min.) 2,500Vrms (min.)	1,500Vrms (min.) 2,500Vrms (min.) 5,000Vrms (min.)	5,000Vrms (min.)	1,500Vrms (min.) 2,500Vrms (min.)
<b>Available packaging &amp; terminal choices</b>	SOP 4 PIN, 6 PIN, 8 PIN	PCB, SMT, SOP 4 PIN, 6 PIN, 8 PIN	PCB, SMT, SOP 4 PIN, 6 PIN, 8 PIN	PCB & SMT 6 PIN	PCB, SMT & SOP 4 PIN, 6 PIN, 8 PIN
<b>Accessories</b>	Tape & reel	Tape & reel	Tape & reel	Tape & reel	Tape & reel
<b>Approved standards</b>	UL 1577	UL 1577	UL 1577	UL 1577	UL 1577

# Relays - MOS FET






					
<i>General Attributes</i>	<b>G3VM GR</b>	<b>G3VM LR</b>	<b>G3VM-60</b>	<b>G3VM-80</b>	<b>G3VM-22</b>
<b>Dimensions mm (in)</b>	Please refer to specific data sheets for all dimensional information	Please refer to specific data sheets for all dimensional information	Please refer to specific data sheets for all dimensional information	Please refer to specific data sheets for all dimensional information	Please refer to specific data sheets for all dimensional information
<b>Features</b>	<ul style="list-style-type: none"> <li>• C x R characteristics as low as 5pF*Ω</li> <li>• Low leakage current</li> <li>• Very high operating speed</li> <li>• Ideal for IC and Memory Test Equipment, SoC Testers, Measurement Devices, Instrumentation, Medical Equipment, Broadband Systems, Data Loggers, Security Systems</li> </ul>	<ul style="list-style-type: none"> <li>• Smallest MOS FET relay on the market</li> <li>• C x R characteristics as low as 5pF*Ω</li> <li>• Low leakage current</li> <li>• Very high operating speed</li> <li>• Ideal for IC and Memory Test Equipment, SoC Testers, Measurement Devices, Instrumentation, Medical Equipment, Broadband Systems, Data Loggers, Security Systems</li> </ul>	<ul style="list-style-type: none"> <li>• High current switching capability</li> <li>• Low ON-resistance</li> <li>• Low leakage current</li> <li>• Cost effective solutions</li> <li>• Ideal for Measurement Devices, Instrumentation, Security Systems, Medical Equipment, Alarm Controls, Consumer Electronics</li> </ul>	<ul style="list-style-type: none"> <li>• High current switching capability</li> <li>• Low leakage current</li> <li>• Ideal for Broadband Systems, Measurement Devices, Instrumentation, Medical Equipment, Data Loggers, Consumer Electronics</li> </ul>	<ul style="list-style-type: none"> <li>• Single input channel with dual output channels</li> <li>• Low ON-resistance</li> <li>• Ideal for Inline Interface Applications, Data Loggers, ADSL Modems and Routers, Edge Routers, Data Storage Devices</li> </ul>
<b>Load voltage</b>	0-20V (AC or DC) 0-40V (AC or DC)	0-20V (AC or DC) 0-40V (AC or DC)	0-60V (AC or DC)	0-80V (AC or DC)	0-20V (AC or DC)
<b>Maximum Ratings and Electrical Characteristics</b>					
<b>Continuous load current</b>	0-120mA 0-160mA 0-300mA	0-120mA 0-160mA 0-300mA 0-450mA	0-400mA 0-500mA 0-1,000mA 0-2,000mA 0-2,500mA	0-350mA 0-1,250mA	0-150mA
<b>ON resistance (typical)</b>	1Ω, 5Ω, 10Ω	0.8Ω, 1Ω, 5Ω, 10Ω	0.12Ω (max.) 7Ω (max.) 1Ω (typ.)	0.11Ω & 1.0Ω	2Ω
<b>Output capacitance</b>	1.0pF (typ.) 5.0pF (typ.) 10pF (typ.)	0.8pF (typ.) 1.0pF (typ.) 5.0pF (typ.) 10pF (typ.)	—	—	—
<b>Available switching configurations</b>	1 Form A	1 Form A	1 Form A	1 Form A	Dual 1 Form A
<b>Leakage current</b>	1.0nA (max.)	1.0nA (max.)	1.0nA (max.) & 1.0μA (max.)	0.2nA (typ.) & 1.2nA (typ.)	1.0μA (max.)
<b>turn-ON time (typical)</b>	0.3ms	0.3ms	0.8ms 1.0ms 1.4ms	0.3ms 2.0ms	0.5ms
<b>turn-OFF time (typical)</b>	0.3ms	0.3ms	0.1ms 0.2ms 0.6ms	0.3ms 0.7ms	0.5ms
<b>Dielectric strength (AC for 1 minute between input and output)</b>	1,500Vrms (min.)	1,500Vrms (min.)	1,500Vrms (min.) 2,500Vrms (min.)	1,500Vrms (min.)	2,500Vrms (min.)
<b>Available packaging &amp; terminal choices</b>	SOP 4 PIN	SOP 4 PIN	SOP, PCB, SMT 4 PIN, 6 PIN	SOP 4 PIN, 6 PIN	PCB & SMT 8 PIN
<b>Accessories</b>	Tape & reel	Tape & reel	Tape & reel	Tape & reel	Tape & reel
<b>Approved standards</b>	UL 1577	UL 1577	UL 1577	UL 1577	UL 1577








# Relays - Low Signal

					
<b>General Attributes</b>	<b>G6J-Y</b>	<b>G6K</b>	<b>G6H</b>	<b>G6S</b>	<b>G6A</b>
<b>Dimensions mm (in)</b>	10.0 H x 10.6 L x 5.7 W (0.39 x 0.42 x 0.22)	5.30 H x 10.20 L x 6.70 W (0.21 x 0.40 x 0.26)	5.08 H x 13.97 L x 8.89 W (0.20 x 0.55 x 0.35)	9.40 H x 15 L x 7.50 W (0.37 x 0.59 x 0.30)	8.40 H x 20.20 L x 10.10 W (0.33 x 0.80 x 0.40)
<b>Switching</b>	1A max.	1A max.	1A max.	2A max.	2A max.
<b>Features</b>	<ul style="list-style-type: none"> <li>• Slimline, 2 Form C, 1 Amp relay</li> <li>• SMT &amp; PCB versions</li> <li>• 2.5kV surge withstand</li> <li>• Available in SMT &amp; PCB</li> <li>• Latching &amp; non-latching versions</li> <li>• Ideal for Telecom, Test &amp; Measurement, Medical, Security, Computer Peripheral, Office Automation</li> </ul>	<ul style="list-style-type: none"> <li>• Small real estate, 2 Form C, 1 Amp relay</li> <li>• 100mW power consumption</li> <li>• 2.5kV surge withstand</li> <li>• SMT &amp; PCB versions</li> <li>• Latching &amp; non-latching models</li> <li>• Ideal for Telecom, Test &amp; Measurement, Medical, Security, Office Automation, Computer Peripheral</li> </ul>	<ul style="list-style-type: none"> <li>• Low profile (5mm), 2 Form C, 1 Amp relay</li> <li>• Available in SMT &amp; PCB</li> <li>• 1.5kV surge withstand</li> <li>• 140mW power consumption</li> <li>• Ideal for Telecom, Test &amp; Measurement, Medical, Security, Office Automation, Computer Peripheral</li> </ul>	<ul style="list-style-type: none"> <li>• Industry standard, 2 Form C, 2 Amp relay</li> <li>• 2.5 kV surge withstand</li> <li>• SMT gullwing, SMT inside-L, PCB models</li> <li>• Latching &amp; non-latching versions</li> <li>• European version available (supplementary insulation at 250V at pollution degree 2 per EN60950/EN41003)</li> <li>• Ideal for Telecom, Thermostats, Medical, Test &amp; Measurement, Security</li> </ul>	<ul style="list-style-type: none"> <li>• Industry standard, 2 Form C, 2 Amp relay</li> <li>• 200mW, 400mW versions</li> <li>• 2 Pole &amp; 4 Pole models</li> <li>• Latching &amp; non-latching versions</li> <li>• 1.5kV surge withstand</li> <li>• Ideal for Telecom, Test &amp; Measurement, Security</li> </ul>
<b>Contact Information</b>					
<b>Contact form</b>	2 Form C	2 Form C	2 Form C	2 Form C	2 Form C, 4 Form C
<b>Contact type</b>	Bifurcated crossbar	Bifurcated crossbar	Bifurcated crossbar	Bifurcated crossbar	Bifurcated crossbar
<b>Contact material</b>	Ag with Au alloy clad	Ag with Au clad	Ag with Au clad	Ag with Au clad; AgPd with Au clad	Ag with Au clad; AgPd with Au clad
<b>Rated load (under resistive load)</b>	0.3A @ 125VAC, 1A @ 30VDC	0.3A @ 125VAC, 1A @ 30VDC	0.5A @ 125VAC, 1A @ 30VDC	0.5 @ 125VAC, 2A @ 30VDC	0.3A to 0.5A @ 125VAC, 1A to 2A @ 30VDC
<b>Max. operating voltage</b>	125VAC, 110VDC	125VAC, 60VDC	125VAC, 110VDC	250VAC, 220VDC	250VAC, 220VDC
<b>Max. switching capacity under resistive load</b>	37.5VA, 30W (NO)	37.5VA, 30W	62.5VA, 33W	62.5VA, 60W	125VA, 60W
<b>Min. electrical service life (operations at rated load)</b>	100,000	100,000	100,000	100,000	500,000
<b>Min. permissible load (for reference only)</b>	10µA @ 10mVDC	10µA @ 10mVDC	10µA @ 10mVDC	10µA @ 10mVDC	10µA @ 10mVDC
<b>Coil Information</b>					
<b>Coil voltage</b>	3, 4.5, 5, 12, 24VDC	3, 4.5, 5, 6, 9, 12, 24VDC	3, 5, 6, 9, 12, 24, 48VDC	3, 4.5, 5, 6, 9, 12, 24VDC	3, 5, 6, 9, 12, 24, 48VDC
<b>Power consumption</b>	140mW (230mW for DC24)	100mW (standard and latching)	140mW (standard)	140mW (standard) 140mW, 200mW (latching)	200mW (DPDT standard) 180mW (DPDT latching) 360mW (4PDT standard)
<b>Characteristics</b>					
<b>Dielectric strength between coil &amp; contacts (50/60 Hz for 1 minute)</b>	1,500VAC	1,500VAC	1,000VAC	2,000VAC	1,000VAC
<b>Surge withstand</b>	2.5kV (2 x 10µs)	2.5kV (2 x 10µs)	1.5kV (10 x 160µs)	2.5kV (2 x 10µs)	1.5kV (10 x 160µs)
<b>Terminal choices</b>	SMT Gullwing, PCB	SMT Gullwing, SMT Inside-L, PCB	PCB (G6H), SMT Gullwing (G6H-2F)	SMT Gullwing, SMT Inside-L, PCB	PCB
<b>Packaging</b>	Tape & reel available	Tape & reel available	Tape & reel available	Tape & reel available	–
<b>Approved standards</b>	Bellcore 2.5kV / Telcordia GR-1089-CORE 2.5kV between coil and contacts	Bellcore 2.5kV / Telcordia GR-1089-CORE 2.5kV between coil and contacts	UL, CSA, (FCC Part 68)	Bellcore 2.5 kV / Telcordia GR-1089-CORE 2.5 kV (between coil and contacts)	UL, CSA, (FCC Part 68)

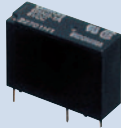
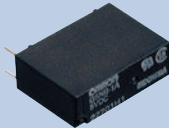
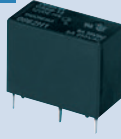

# Relays - Low Signal

					
<b>General Attributes</b>	<b>G5A</b>	<b>G5V-1</b>	<b>G6L</b>	<b>G5V-2</b>	<b>G6E</b>
<b>Dimensions mm (in)</b>	8.38 H x 16 L x 9.9 W (0.33 x 0.63 x 0.39)	10.0 H x 12.50 L x 7.50 W (0.39 x 0.49 x 0.30)	4.5 H x 10.6 L x 7.0 W (0.18 x 0.42 x 0.28)	11.43 H x 20.32 L x 9.91 W (0.45 x 0.80 x 0.39)	8.38 H x 16 L x 9.9 W (0.33 x 0.63 x 0.39)
<b>Switching</b>	1A max.	1A max.	1A max.	2A max.	3A max.
<b>Features</b>	<ul style="list-style-type: none"> <li>• General use, 2 Form C, 1 Amp relay</li> <li>• Semi-sealed or fully-sealed construction</li> <li>• Ideal for Telecom, Security, Computer Peripheral, Office Automation</li> </ul>	<ul style="list-style-type: none"> <li>• General use, 1 Form C, 1 Amp relay</li> <li>• 150mW power consumption</li> <li>• 1.5kV surge withstand</li> <li>• Ideal for Telecom, Security, Computer Peripheral</li> </ul>	<ul style="list-style-type: none"> <li>• Very low profile, 1 Form A, 1 Amp relay</li> <li>• 1.5kV surge withstand</li> <li>• SMT &amp; PCB versions</li> <li>• Ideal for Security &amp; General Use</li> </ul>	<ul style="list-style-type: none"> <li>• 2 Form C, 1-2 Amp relay</li> <li>• Ideal for general use</li> <li>• Industry standard footprint</li> <li>• 150mW, 360mW &amp; 500mW coil power versions</li> <li>• 1.5 kV surge withstand</li> </ul>	<ul style="list-style-type: none"> <li>• General use, 1 Form C, 3 Amp relay</li> <li>• 2.5 kV surge withstand</li> <li>• 200mW, 400mW models</li> <li>• Latching and non-latching versions</li> </ul>
<b>Contact Information</b>					
<b>Contact form</b>	2 Form C	1 Form C	1 Form A	2 Form C	1 Form C
<b>Contact type</b>	Bifurcated crossbar	Single crossbar	Single crossbar	Bifurcated crossbar	Bifurcated crossbar
<b>Contact material</b>	Ag with Au clad	Ag with Au clad	Ag with Au clad	Ag with Au clad	Ag with Au clad
<b>Rated load (under resistive load)</b>	0.5A @ 24VAC, 1A @ 24VDC	0.5A @ 125VAC, 1A @ 24VDC	0.3A @ 125VAC, 1A @ 24VDC	0.5A @ 125VAC, 2A @ 30VDC	0.4A @ 125VAC, 2A @ 30VDC
<b>Max. operating voltage</b>	125VAC, 125VDC	125VAC, 60VDC	125VAC, 60VDC	125VAC, 125VDC	250VAC, 220VDC
<b>Max. switching capacity under resistive load</b>	37.5VA, 33W	62.5VA, 30W	37.5VA, 24W	62.5VA, 60W	50VA, 60W
<b>Min. electrical service life (operations at rated load)</b>	100,000	100,000	100,000	300,000	100,000
<b>Min. permissible load (for reference only)</b>	1mA @ 5VDC	1mA @ 5VDC	1mA @ 5VDC	10µA @ 10mVDC	10µA @ 10mVDC
<b>Coil Information</b>					
<b>Coil voltage</b>	5, 6, 9, 12, 24, 48VDC	5, 6, 9, 12, 24VDC	3, 4.5, 5, 12, 24VDC	3, 5, 6, 9, 12, 24, 48VDC	3, 5, 6, 9, 12, 24, 48VDC
<b>Power consumption</b>	200mW (standard & latching)	150mW	180mW (standard)	500mW (standard) 360mW (high-sensitivity) 150mW (ultra-sensitive)	200mW (standard) 400mW (standard)
<b>Characteristics</b>					
<b>Dielectric strength between coil &amp; contacts (50/60 Hz for 1 minute)</b>	1,000VAC	1,000VAC	1,000VAC	1,000VAC	1,500VAC
<b>Surge withstand</b>	–	1.5kV (10 x 160µs)	–	1.5kV (10 x 160µs)	2.5kV (2 x 10µs)
<b>Terminal choices</b>	PCB	PCB	PCB, SMT Gullwing	PCB	PCB
<b>Packaging</b>	–	–	Tape & reel available	–	–
<b>Approved standards</b>	UL, CSA	UL, CSA	UL/CSA (FCC Part 68)	UL, CSA	UL/CSA (FCC Part 68) Bellcore 2.5kV / Telcordia GR-1089-CORE 2.5kV between coil and contacts





# Relays - Low Signal RF/HF

					
<b>General Attributes</b>	<b>G6W</b>	<b>G6Y</b>	<b>G6Z</b>	<b>G6K-RF</b>	<b>G9YA</b>
<b>Dimensions mm (in)</b>	8.9 H x 20 L x 9.4 W (0.35 x 0.79 x 0.37)	9.20 H x 20.70 L x 11.70 W (0.36 x 0.81 x 0.46)	8.9 H x 20 L x 8.6 W (0.35 x 0.79 x 0.34)	5.4 H x 10.3 L x 6.9 W (0.21 x 0.41 x 0.27)	39.0 H x 34.0 L x 13.2 W (1.54 x 1.34 x 0.52)
<b>Switching</b>	0.5A max.	1A max.	0.5A max.	1A max.	100mA max.
<b>Features</b>	<ul style="list-style-type: none"> <li>• 5GHz+ HF relay</li> <li>• 1 Form C</li> <li>• Tri-plate micro strip line technology</li> <li>• Latching &amp; non-latching models</li> <li>• SMT and PCB versions</li> <li>• Ideal for Base Station LNA &amp; TMA switching, Test &amp; Measurement, Broadcast, FWA</li> </ul>	<ul style="list-style-type: none"> <li>• 900MHz+ HF relay</li> <li>• 1 Form C</li> <li>• Micro strip line technology</li> <li>• Ideal for CATV, Digital TV tuners, Test &amp; Measurement</li> </ul>	<ul style="list-style-type: none"> <li>• 2.6GHz+ HF relay</li> <li>• 1 Form C</li> <li>• Micro strip line technology</li> <li>• 75 Ω &amp; 50 Ω impedance models</li> <li>• Latching &amp; non-latching models</li> <li>• Reverse terminal configurations</li> <li>• Y &amp; E terminal configurations</li> <li>• SMT and PCB versions</li> <li>• Ideal for Base Station LNA &amp; TMA switching, CATV, Digital TV tuners, Test &amp; Measurement, Broadcast, FWA</li> </ul>	<ul style="list-style-type: none"> <li>• 1GHz+ HF relay</li> <li>• 2 Form C</li> <li>• 100mW coil power</li> <li>• Smallest 2 Form C on the market</li> <li>• Ideal for Test &amp; Measurement, CATV, Digital TV tuners</li> </ul>	<ul style="list-style-type: none"> <li>• 26.5GHz bandwidth</li> <li>• Coaxial HF relay</li> <li>• 60dB isolation (26.5GHz)</li> <li>• Contact carry power of 120W at 3GHz</li> <li>• Available in failsafe &amp; TTL-driven models</li> <li>• Also available in non-latching and dual latching configurations</li> <li>• Ideal for Mobile Communications Infrastructure Equipment, Broadcast Equipment, Test and Measurement Equipment, Wireless LAN</li> </ul>
<b>HF Characteristics</b>					
<b>Isolation</b>	65dB (2GHz) 60dB (2.5GHz) 40dB (5.0GHz)	65dB (900MHz)	60 - 65dB (900MHz) 30 - 45dB (2.6GHz)	20 - 30dB (1GHz)	60dB (26.5GHz) 65dB (12.4GHz)
<b>Insertion loss</b>	0.2dB (2GHz) 0.2dB (2.5GHz) 0.4dB (5.0GHz)	0.5dB (900MHz)	0.1 - 0.2dB (900MHz) 0.3 - 0.5dB (2.6GHz)	0.2dB (1GHz)	0.8dB (26.5GHz) 0.4dB (12.4GHz) 0.3dB (8GHz)
<b>VSWR</b>	1.2 (2GHz) 1.2 (2.5GHz) 1.5 (5.0GHz)	1.5 (900MHz)	1.1 - 1.2 (900MHz) 1.3 - 1.5 (2.6GHz)	0.2dB (1GHz)	1.7 (26.5GHz) 1.35 (12.4GHz) 1.25 (8GHz)
<b>Contact Information</b>					
<b>Contact form</b>	1 Form C	1 Form C	1 Form C	2 Form C	1 Form C
<b>Contact type(s)</b>	Twin crossbar	Twin crossbar	Twin crossbar	Bifurcated crossbar	Twin crossbar
<b>Contact material</b>	Au clad Cu alloy	Au clad Cu alloy	Au clad Cu alloy	Au alloy on Ag base	Au clad Cu alloy
<b>Rated load (under resistive load)</b>	10mA @ 30VAC 10mA @ 30VDC 2.5GHz, 10W	10mA @ 30VAC; 10mA @ 30VAC; 900 MHz, 1W	10mA @ 30VAC; 10mA @ 30VDC; 900MHz, 10W	0.3A @ 125VAC; 1A @ 30VDC	100mA @ 30VDC
<b>Max. operating voltage</b>	30VDC, 30VAC	30VDC, 30VAC	30VDC, 30VAC	60VDC, 125VAC	30VDC
<b>Max. switching capacity under resistive load</b>	10VA, 10W	10VA, 10W	10VA, 10W	37.5VA, 30W	120W (3GHz)
<b>Min. electrical service life (operations at rated load)</b>	300,000	300,000	300,000	300,000	5,000,000
<b>Coil Information</b>					
<b>Coil voltage</b>	3, 4.5, 9, 12, 24VDC	3, 4.5, 5, 6, 9, 12, 24VDC	3, 4.5, 5, 9, 12, 24VDC	3, 4.5, 5, 6, 9, 12, 24VDC	4.5, 5, 12, 15, 24, 28VDC
<b>Power consumption</b>	200mW (standard) 200mW (single latching) 360mW (dual latching)	200mW	200mW (standard) 200mW (single latching) 360mW (dual latching)	100mW	500mW (dual latching) 700mW (failsafe)
<b>Characteristics</b>					
<b>Dielectric strength between coil &amp; contacts (50/60 Hz for 1 minute)</b>	1,000VAC	1,000VAC	1,000VAC	750VAC	500VAC
<b>Terminal choices</b>	PCB, SMT Gullwing	PCB	PCB, SMT Gullwing	SMT Gullwing	SMA Terminals, Solder Terminals, Pin Terminals
<b>Packaging / Options</b>	—	—	Tape & reel available	—	Connector Cables





# Relays - Power PCB

	<b>NEW!</b> 	<b>NEW!</b> 	<b>NEW!</b> 	
<b>General Attributes</b>	<b>G5NB</b>	<b>G5NB-E</b>	<b>G5SB</b>	<b>G6D-ASI</b>
<b>Dimensions mm (in)</b>	15.3 H x 20.5 L x 7.2 W (0.60 x 0.81 x 0.28)	15.3 H x 20.5 L x 7.2 W (0.60 x 0.81 x 0.28) max.	15.8 H x 20.3 L x 10.3 W (0.62 x 0.80 x 0.41)	12.5 H x 17.5 L x 6.5 W (0.49 x 0.69 x 0.26)
<b>Switching</b>	3A/5A	3A/5A	5A(NO)/3A(NC)	5A
<b>Features</b>	<ul style="list-style-type: none"> <li>• High capacity 5A version available</li> <li>• Meets EN tracking resistance CTI&gt;250</li> <li>• HA version for home appliances</li> </ul>	<ul style="list-style-type: none"> <li>• Small compact form for 10 kV impulse and 5A switching capability</li> <li>• Meets EN tracking resistance CTI&gt;250</li> </ul>	<ul style="list-style-type: none"> <li>• High insulation between coil &amp; contact</li> <li>• Impulse withstand of 8kV</li> <li>• Fully Sealed</li> <li>• Incorporates 5A NO contact</li> </ul>	<ul style="list-style-type: none"> <li>• Subminiature, slim lightweight design</li> <li>• Low power consumption</li> <li>• Fully Sealed</li> </ul>
<b>Contact Information</b>				
<b>Contact form</b>	1 Form A	1 Form A	1 Form A	1 Form A
<b>Contact type(s)</b>	Single button	Single button	Single button	Single button
<b>Contact material(s)</b>	AgNi	AgSnIn	AgNi/AgSnIn	AgNi/AgSnIn
<b>Electrical service life (@ 1800 ops./hr.)</b>	(resistive load) 200,000 (resistive): 3A @ 125VAC/30VDC	200,000 (resistive): 3A @ 30VDC 100,000: 5A @ 250VAC	For resistive loads: 200,000: 3 A (NO)/3 A (NC) at 125 VAC; 50,000: 5 A (NO)/3 A (NC) at 125 VAC; 50,000: 5 A (NO) at 250 VAC; 10,000: 3 A (NC) at 250 VAC; 10,000: 5 A (NO)/3 A (NC) at 30 VDC	300,000: 2A @ 30VDC/250VAC 70,000: 5A @ 30VDC/250VAC
<b>Max. switching capacity (and resistive load)</b>	375VA, 90W	1,250VA, 90W	1,250VA, 150W(NO) 750VA, 30W(NC)	1,250VA, 150W
<b>Minimum permissible load (for reference only)</b>	10mA @ 5VDC	10mA @ 5VDC	10mA @ 5VDC	10mA @ 5VDC
<b>Coil Information</b>				
<b>Coil voltage</b>	5, 12, 18, 24VDC	5, 12, 18, 24VDC	5, 9, 12, 24VDC	5, 12, 24, 48, 110/120VDC
<b>Power consumption</b>	200mW	200mW	400mW	200mW
<b>Insulation class</b>	Class A	Class B	Class B	Class B
<b>Characteristics</b>				
<b>Operating temperature</b>	-40 to +70°C	-40 to +85°C	-40 to +70°C	-25 to +70°C
<b>Impulse withstand voltage (1.2 x 50µ sec. unless noted)</b>	10kV	10kV	8kV	6kV
<b>Dielectric strength (50/60 Hz for 1 minute)</b>	4,000VAC (coil-contact) 750VAC (open contacts)	4,000VAC (coil-contact) 750VAC (open contacts)	4,000VAC (coil-contact) 1,000VAC (open contacts)	3,000VAC (coil-contact) 750VAC (open contacts)
<b>Terminal choices</b>	PCB	PCB	PCB	PCB
<b>Protection level</b>	Semi-sealed	Semi-sealed	Semi-sealed	Semi-sealed
<b>Accessories</b>	N/A	N/A	N/A	Socket for back connecting, sockets with PCB terminals
<b>Approved standards</b>	UL, CSA, VDE	UL, CSA, VDE	UL, CSA, VDE	UL, CSA, TUV, SEV


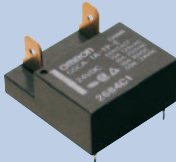

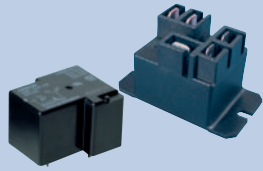
# Relays - Power PCB

	<b>NEW!</b> 	<b>NEW!</b> 		
<b>General Attributes</b>	<b>G6DS</b>	<b>G6M</b>	<b>G2RG</b>	<b>G6B</b>
<b>Dimensions mm (in)</b>	12.4 H x 20 L x 5.0 W (0.60 x 0.81 x 0.28)	17.7 H x 20.3 L x 5.08 W (0.70 x 0.80 x 0.20)	25.5 H x 29 L x 13 W (1.00 x 1.14 x 0.51)	9.91 H x 20.07 L x 9.91 W (0.39 x 0.79 x 0.39)
<b>Switching</b>	5A	5A	8A	8A/5A
<b>Features</b>	<ul style="list-style-type: none"> <li>• Slim 5mm for max. density mounting</li> <li>• High sensitive coil option reduces power consumption</li> <li>• Meets EN reinforced insulation requirement for control equipment</li> <li>• Fully sealed</li> <li>• Resistant to mechanical shock</li> </ul>	<ul style="list-style-type: none"> <li>• Slim 5mm width, &amp; reduced PCB area (103mm<sup>2</sup>) ideal for high-density mounting</li> <li>• Highly efficient magnetic circuit for high sensitivity</li> <li>• UL Class I, Division II approved for hazardous locations</li> </ul>	<ul style="list-style-type: none"> <li>• 1.5mm contact gap x 2 poles=3mm total gap meeting UPS standards</li> <li>• Dimensions &amp; mounting holes are same as G2R relay series</li> <li>• Sealed construction, standard</li> <li>• Meets EN tracking resistance CTI &gt; 250</li> <li>• UL508/CSA 22.2</li> </ul>	<ul style="list-style-type: none"> <li>• Subminiature and low power</li> <li>• Sealed construction standard</li> <li>• Single &amp; dual coil latching available</li> </ul>
<b>Contact Information</b>				
<b>Contact form</b>	1 Form A	1 Form A	2 Form A	1 Form A, 2 Form A, 2 Form B 1 Form A + 1 Form B
<b>Contact type(s)</b>	Single button	Single button	Single button	Single button
<b>Contact material(s)</b>	AgNi	Ag-Alloy	AgSnO <sub>2</sub>	AgSnO <sub>2</sub>
<b>Electrical service life (@ 1800 ops./hr.) (resistive load)</b>	100,000: 5A @ 30VDC/250VAC 80,000 (high sensitivity): 5A @ 30VDC/250VAC	100,000: 3A @ 30VDC/250VAC 6,000: 5A @ 250VAC/24VDC	10,000: 8A @ 250VAC	100,000: 5A @ 30 VDC/250VAC 8A @ 30 VDC/250VAC (high-capacity)
<b>Max. switching capacity (resistive load)</b>	1,250VA, 150W	750VA, 90W	2,000 VA	1,250VA, 150W 2,000VA, 240W (high-capacity type)
<b>Minimum permissible load (for reference only)</b>	5mA @ 24VDC	10mA @ 5VDC	10mA @ 5VDC	10mA @ 5VDC
<b>Coil Information</b>				
<b>Coil voltage</b>	5, 12, 24VDC	5, 12, 24VDC	12, 24VDC	5, 6, 12, 24VDC
<b>Power consumption</b>	180mW 120mW (high-sensitivity)	120mW	800mW	200mW (1 pole) 300mW (2 pole)
<b>Insulation class</b>	Class B	Class B	Class B	Class A
<b>Characteristics</b>				
<b>Operating temperature</b>	-40 to +85°C	-40 to +85°C	-40 to +70°C	-25 to +70°C
<b>Impulse withstand voltage (1.2 x 50μ sec. unless noted)</b>	6kV	5.08kV	10kV	—
<b>Dielectric strength (50/60 Hz for 1 minute)</b>	3,000VAC (coil-contacts) 750VAC (open contacts)	3,000VAC, (coil-contact) 750VAC, (open contacts)	5,000VAC, (coil-contact) 3,000VAC, (contacts pole-pole) 1,000VAC (open contacts)	4,000VAC (coil-contact) 2,000VAC (contacts pole-pole) 1,000VAC (open contacts)
<b>Terminal choices</b>	PCB	PCB	PCB	PCB
<b>Protection level</b>	Fully Sealed	Fully sealed	Fully sealed	Fully sealed
<b>Accessories</b>	Socket for back connecting, sockets with PCB terminals	N/A	N/A	Sockets & clips for back connecting sockets with PCB terminals
<b>Approved standards</b>	UL, CSA, VDE	UL, CSA, VDE, EN, IEC 61131-2, IEC 61010	UL, CSA, VDE (0700/0110)	UL, CSA, (FCC Part 68) SEV, TUV, IEC

# Relays - Power PCB


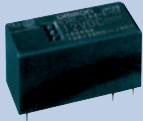
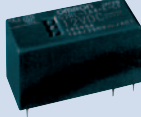

		<b>NEW!</b> 	<b>NEW!</b> 	
<b>General Attributes</b>	<b>G6RN</b>	<b>G5LE/-E</b>	<b>G5LB/-25</b>	<b>G5Q</b>
<b>Dimensions mm (in)</b>	15 H x 28.5 L x 10 W (0.59 x 1.12 x 0.39)	19 H x 22.5 L x 16.5 W (0.75 x 0.89 x 0.65)	15.2 H x 19.6 L x 15.6 W (0.60 x 0.77 x 0.61)	15.8 H x 20.3 L x 10.3 W (0.62 x 0.80 x 0.41)
<b>Switching</b>	8A	10A (16A for Semi-sealed "E" type)	10A	10A (NO contacts)
<b>Features</b>	<ul style="list-style-type: none"> <li>• 8 mm coil/contact creepage</li> <li>• Low profile</li> <li>• Sealed construction standard</li> <li>• Ideal for switching contactors, solenoids &amp; motors</li> </ul>	<ul style="list-style-type: none"> <li>• Small "sugar cube" size used as common platform</li> <li>• Sealed construction optional</li> <li>• High capacity contacts:-E</li> <li>• Increased (0.8) contact gap:-G8</li> <li>• Special application versions available</li> </ul>	<ul style="list-style-type: none"> <li>• Sealed construction optional</li> <li>• 10A switching in low profile "sugar cube" package</li> <li>• Optional -25 type meets stringent EU requirements, including tracking resistance CTI &gt; 250 &amp; extended life</li> <li>• 4.5kV impulse withstand</li> <li>• Low power consumption</li> </ul>	<ul style="list-style-type: none"> <li>• Compact PCB relay with high insulation</li> <li>• Withstands impulse of 8kV coil-contacts</li> <li>• Meets EN tracking resistance CTI &gt;250</li> <li>• Class F coil insulation standard</li> <li>• Low power consumption</li> </ul>
<b>Contact Information</b>				
<b>Contact form</b>	1 Form A, 1 Form C	1 Form A, 1 Form C	1 Form A, 1 Form C	1 Form A, 1 Form C
<b>Contact type(s)</b>	Single button	Single button	Single button	Single button
<b>Contact material(s)</b>	AgNi +gold plating	AgSnO <sub>2</sub> /AgSnIn (either with gold plating option)	AgSnO <sub>2</sub>	AgNi
<b>Electrical service life (@ 1800 ops./hr.) (resistive load)</b>	100,000: 8A @ 250VAC 5A @ 30VDC	100,000: 13A @ 120VAC (@ 85°C/87°C) 5A @ 250 VAC (AgSnO <sub>2</sub> ) 6 FLA, 6 LRA @ 120VAC @ 85°C TV-5 @120VAC 50,000: 10A @ 250VAC 50,000 16A @ 250VAC 1/8 HP @ 120 VAC (@ 85°C) 30,000: 12A @ 120VAC	100,000: 10A @ 120VAC/250VAC 8A @ 30VDC	200,000: 3A (NO)/3 A (NC) @ 125VAC 100,000: 3A (NO)/3 A (NC) @ 250VAC 5A (NO)/3 A (NC) @ 30VDC 50,000: 10A (NO) @125VAC (900 ops.per hour)
<b>Max. switching capacity (resistive load)</b>	2,000VA,150W	1,200VA,240W	1,200VA, 240W 2,500VA, 240W (-25 type)	1,250VA,150W (NO) 375 VA, 90W (NC)
<b>Minimum permissible load (for reference only)</b>	10mA @ 5 VDC	100mA @ 5VDC,	100mA @ 5VDC	10mA @ 5VDC
<b>Coil Information</b>				
<b>Coil voltage</b>	5, 6, 12, 24, 48VDC	5, 6, 9, 12, 24, 48VDC	3, 5, 6, 9, 12, 24, 36, 48VDC	5, 12, 24VDC
<b>Power consumption</b>	220mW, 250mW (DC24/48)	400mW /360mW available	360mW (standard) 400mW ("40" style) 600mW ("60" style)	400mW Form C 200mW Form A
<b>Insulation class</b>	Class B	Class B, F (UL/CSA ONLY)	Class B, F (-25 type)	Class F
<b>Characteristics</b>				
<b>Operating temperature</b>	-40 to +85°C	-40 to +85°C	-40 to +85°C	-40 to +105°C
<b>Impulse withstand voltage (1.2 x 50µ sec. unless noted)</b>	—	4.5kV	4.5kV	8kV
<b>Dielectric strength (50/60 Hz for 1 minute)</b>	4,000VAC (coil-contact) 1,000 (open contacts)	2,000VAC (coil-contact) 750VAC (open contacts)	2,000VAC (coil-contact) 750VAC (open contacts)	4,000VAC (coil-contact) 1,000VAC (open contacts)
<b>Terminal choices</b>	PCB	PCB	PCB	PCB
<b>Protection level</b>	Sealed	Standard: Semi-sealed/vented, Option: sealed	Standard: Semi-sealed/vented, Option: sealed	Standard: Semi-sealed/vented, Option: sealed
<b>Accessories</b>	N/A	N/A	N/A	N/A
<b>Approved standards</b>	UL, CSA, VDE	UL, CSA, TUV, VDE	UL, CSA, VDE	UL, CSA, VDE

# Relays - Power PCB

			<b>NEW TYPES</b> 	
<b>General Attributes</b>	<b>G6C</b>	<b>G5CA</b>	<b>G5PA-1</b>	<b>G8PT</b>
<b>Dimensions mm (in)</b>	9.91 H x 20.07 L x 14.99 W (0.39 x 0.79 x 0.59)	11 H x 16 L x 22 W (10A) (0.43 x 0.63 x 0.87) 11 H x 22 L x 25 W (15A)	25 H x 24 L x W 10 (0.985 x 0.95 x 0.40)	Multiple, refer to catalog. Basic: 20.1(H)x 32.1(L) x 27.7(W)
<b>Switching</b>	10A	10A (15A high capacity)	5A (10A option)	30A (SPST) 10A-30A (SPDT)
<b>Features</b>	<ul style="list-style-type: none"> <li>• Low power consumption for high power switching</li> <li>• Low profile 10A power relay</li> <li>• Single &amp; dual coil latching types available</li> <li>• Sealed construction available</li> <li>• Meets EN tracking resistance CTI &gt; 250</li> </ul>	<ul style="list-style-type: none"> <li>• Fully sealed or flux-sealed</li> <li>• High capacity versions</li> <li>• High sensitivity types</li> <li>• PCB or PCB+QC versions</li> </ul>	<ul style="list-style-type: none"> <li>• Ideal for TVs, tuner, &amp; audio power supply switching, both front panel and remote controlled. Also auxiliary switched power outlets on tuners and TVs.</li> <li>• A variety of versions in a single standard package meet most UL/FCC power isolation requirements</li> <li>• Rated to 100A inrush @ 250 VAC for minimum 40,000 operations</li> </ul>	<ul style="list-style-type: none"> <li>• Industry standard form with 30A switching</li> <li>• UL Class F insulation standard</li> <li>• Wide range of coil ratings</li> <li>• Various sealing forms: open frame, vented/flux sealed, fully sealed</li> <li>• UL508/UL873 Column A spacings</li> <li>• Meets EN Tracking resistance CTI &gt; 175</li> <li>• High dielectric at open contacts</li> </ul>
<b>Contact Information</b>				
<b>Contact form</b>	1 Form A + 1 Form B, 1 Form A	1 Form A	1 Form A	1 Form A, 1 Form C
<b>Contact type(s)</b>	Single button	Single button	Single button	Single button
<b>Contact material(s)</b>	Ag-Alloy	AgSnIn	AgSnO <sub>2</sub>	AgSnIn (other alloys available)
<b>Electrical service life (@ 1800 ops./hr.) (resistive load)</b>	100,000: 10A @ 30VDC/250VAC	100,000: 10A @ 30VDC 15A @ 110VAC (high capacity) 10A @ 250VAC (fully sealed, std) 300,000: 10A @ 250VAC (semi-sealed)	30,000: 5A @ 277 VAC 5A @ 30VDC / 277VAC (high capacity type) 25,000: TV-5 TV-8 (optional) 6,000: 5A @ 30VDC 100,000: 10A @ 250 VAC (high-capacity type)	100,000: 30A @ 277VAC (NO) 50,000: 30A @ 277VAC (NC) Consult catalog for other ratings
<b>Max. switching capacity (resistive load)</b>	2,500VA, 300W 2,000VA, 240W (latching)	2,500VA, 300W	N/A	1 Form A: 7,500VA, 560W 1 Form C: 5000/2500VA, 560W/280W*
<b>Minimum permissible load (for reference only)</b>	10mA @ 5VDC	100mA @ 5VDC	10mA @ 5 VDC	500mA @ 5VDC
<b>Coil Information</b>				
<b>Coil voltage</b>	3, 5, 6, 12, 24VDC	5, 12, 24VDC	5, 6, 9, 12, 24 VDC (4.5 VDC non-standard)	5, 9, 12, 24, 48, 110VDC Other coil voltages available
<b>Power consumption</b>	200mW (monostable & single coil latching) 280mW (dual coil latching)	200mW (standard & high capacity) 150mW (high sensitivity)	250mW 530mW (high capacity, extended electrical life) 150mW (under development)	900mW
<b>Insulation class</b>	Class A	Class B	Class B	Class F
<b>Characteristics</b>				
<b>Operating temperature</b>	-40 to +70°C	-25 to +70°C	-40 to +70°C	-55°C to +105°C
<b>Impulse withstand voltage (1.2 x 50µ sec. unless noted)</b>	4.5kV	4.5kV	10kV 12kV	6kV
<b>Dielectric strength (50/60 Hz for 1 minute)</b>	2,000VAC (coil -contact) 2,000VAC (contacts pole-pole) 1,000VAC (open contacts)	2,500VAC (coil-contact) 1,000VAC (open contacts)	4,000VAC (coil-contacts) 1,000VAC (open contacts)	2,500VAC, (coil-contact) 1,500VAC, (open contacts)
<b>Terminal choices</b>	PCB, self clinching	PCB Optional: PCB+quick-connect contact terminals	PCB	PCB (optional self-clinching) PCB coil /quick connect contact Flange mount all quick connect
<b>Protection level</b>	Semi-sealed Fully sealed option	Semi-sealed Fully sealed option	Semi-sealed	Open frame, Vented/semi-sealed, Fully sealed
<b>Accessories</b>	Socket for QC contact terms., PCB terms., socket clip	N/A	N/A	N/A
<b>Approved standards</b>	UL, CSA, VDE, SEV	UL, CSA, SEV, SEMKO, IEC/TUV	UL, CSA, SEMKO TUV, VDE	UL, CSA, VDE

\* N.O. Contact / N.C. Contact

# Relays - Power PCB

			<b>NEW!</b> 	<b>NEW!</b> 
<b>General Attributes</b>	<b>G2R</b>	<b>G2RL</b>	<b>G5RL</b>	<b>G2RL-TP</b>
<b>Dimensions mm (in)</b>	25.5 H x 29 L x 13 W (1 x 1.14 x 0.51)	15.5 H x 29 L x 12.7 W (0.61 x 1.14 x 0.50)	15.7 H x 28.8 L x 12.5 W (0.61 x 1.14 x 0.49)	15.7H x 40.4 L x 12.5 W (0.61 x 1.60 x 0.49)
<b>Switching</b>	16A max.	16A max.	16A max. (NO), 5A max. (NC)	16A max.
<b>Features</b>	<ul style="list-style-type: none"> <li>• High dielectric withstand</li> <li>• 8mm coil/contact spacing</li> <li>• 1 &amp; 2 pole models</li> <li>• 3mm contact gap version available (see G2RG)</li> <li>• Meets EN tracking resistance CTI &gt; 250</li> </ul>	<ul style="list-style-type: none"> <li>• Low profile for power rating</li> <li>• High isolation</li> <li>• Class F insulation option</li> <li>• Low power consumption</li> <li>• Quick connect terminal option</li> <li>• Meets EN tracking resistance CTI &gt; 250</li> </ul>	<ul style="list-style-type: none"> <li>• High dielectric due to large internal creepage distances.</li> <li>• AC coil in industry standard package</li> </ul>	<ul style="list-style-type: none"> <li>• Increased temperature &amp; insulation ratings in low profile package.</li> <li>• Simplifies PCB design by allowing removal of high power PCB tracings.</li> <li>• Contact/load terminals in both 5mm for RAST5 connection &amp; 7.5mm existing standard</li> <li>• Single mounting/soldering process for both types of terminals reduces PCB assembly costs.</li> </ul>
<b>Contact Information</b>				
<b>Contact form</b>	1 Form A, 1 Form C, 2 Form A, 2 Form C	1 Form A, 1 Form C, 2 Form A, 2 Form C	1 Form C	1 Form A
<b>Contact type(s)</b>	Single button, bifurcated button	Single button (bifurcated available)	Single button	Single button
<b>Contact material(s)</b>	Ag alloy	AgSnO <sub>2</sub> (1 pole); AgNi (2 pole)	AgSnIn	Ag alloy
<b>Electrical service life (@ 1800 ops./hr.) (resistive load)</b>	100,000: (high-capacity type) 16A @ 30VDC/250VAC Consult catalog for other ratings	100,000: 16A @ 250VAC 6,000: 25A @ 240VAC Consult catalog for other ratings	50,000: 16A @ 24VDC/277VAC (NO) 25,000: TV-5 (NO)	50,000: 16A @ 24VDC/277VAC 20A @ 24 VAC (@ 85°C) 25,000: TV-5
<b>Max. switching capacity (resistive Load)</b>	4,000VA, 480W (high-capacity 1 pole) Consult catalog for other ratings	4,000VA, 384W (high-capacity 1 pole) Consult catalog for other ratings	4,000VA, 384W (NO) 1,250VA, 120W (NC)	4,000VA,
<b>Minimum permissible load (@1800 ops./hr.)</b>	1 pole: 100mA @ 5VDC; 2 pole: 10mA @ 5VDC	40mA, 24VDC	40mA @ 24VDC	—
<b>Coil Information</b>				
<b>Coil voltage</b>	12, 18, 24, 48, 50, 100, 110/120, 110, 120, 200/220, 220, 230, 240VAC 5, 6, 9, 12, 18, 24, 48, 60, 100, 110VDC	5, 12, 24, 48VDC	24, 100, 115/120, 200, 230/240 VAC 5, 12, 24, 48VDC	12, 24VDC Consult catalog for other coil voltages
<b>Power consumption</b>	0.9VA, 530mW (standard) 360mW (high sensitivity) 850mW (latching set), 600mW (latching reset)	400mW (430mW for 48VDC)	0.75VA 400mW (430mW @ 48VDC)	400mW (430mW for 48VDC)
<b>Insulation class</b>	Class B available	Class F	—	Class F
<b>Characteristics</b>				
<b>Operating temperature</b>	-40 to +70°C (+85°C option)	-40 to +85°C	-40 to +70°C (AC coil) -40 to +85°C (DC coil)	-40 to +105°C
<b>Impulse withstand voltage (1.2 x 50µ sec. unless noted)</b>	10kV	10kV	10kV	10kV
<b>Dielectric strength (50/60 Hz for 1 minute)</b>	5,000VAC (coil-contact) 1,000 VAC (open contacts)	5,000VAC (coil-contact) 1,000 VAC (open contacts)	6,000VAC (coil-contact) 1,000VAC (open contacts)	5,000 VAC, (coil-contact) 1,000 VAC, (open contacts)
<b>Terminal choices</b>	PCB, plug in quick-connect (flange mount)	PCB, optional quick-connect contact terminals (-TP type)	PCB	PCB (coil terminals) Quick-connect (contact terminals)
<b>Protection level</b>	Semi-sealed Fully sealed option	Semi-sealed Fully sealed option	Semi-sealed	Semi-sealed
<b>Accessories</b>	N/A	N/A	N/A	N/A
<b>Approved standards</b>	UL, CSA, SEV SEMKO, VDE, TUV	UL, CSA, VDE	UL, CSA, VDE	UL, CSA, EN 60335



# Relays - DC Power

The switching and driving sections are isolated, gas injected and hermetically sealed. This advanced construction requires no arc space, saves space, & helps ensure safety.



## General Attributes

### G9EA





### G9EB

### G9EC

Model	G9EA-1(-B)	G9EA-1(-B)-CA	G9EB (-1B)	G9EC-1(-B)
<b>Classification</b>	Switching/current conduction	High-current conduction	Switching/current conduction	Switching/current conduction
<b>Features</b>	Standard compact model carries/switches 400VDC, 60A loads	Carries 100A Low contact resistance when carrying current	Smallest in series 250VDC, 25A loads	Largest capacity in series Carries/switches 400V, 200A loads
<b>Contact Information</b>				
<b>Contact Form</b>	SPST-NO	SPST-NO	SPST-NO	SPST-NO
<b>Contact structure</b>	Double-break, single	Double-break, single	Double-break, single	Double-break, single
<b>Contact resistance</b>	30mΩ max. (0.6mΩ typical)	10mΩ max. (0.3mΩ typical)	30mΩ max.	30mΩ max. (0.2mΩ typical)
<b>Switching voltage drop</b>	0.1V max. (for a carry current of 60A)	0.1V max. (for a carry current of 100A)	0.1V max (for a carry current of 25A)	0.1V max. (for a carry current of 200A)
<b>*Electrical endurance</b>	120VDC, 100A, 3,000 operations min. 400VDC, 60A, 3,000 operations min. 400VDC, 30A, 30,000 operations min.	400VDC, 30A, 1,000 operations min. 120VDC, 30A, 2,500 operations min.	250VDC, 25A, 30,000 operations min.	400VDC, 200A, 3,000 operations min.
<b>Max. switching current</b>	100A	30A	25A	200A
<b>Rated carry current</b>	60A	100A	25A	200A
<b>Short-time carry current</b>	100A (10 min.)	150A (10 min.)	50A (5 min.), 40A (10min.)	300A (15min.)
<b>*Max. interruption current</b>	600A @ 300VDC (5 times)	—	100A @ 250VDC (5 times)	1,000A @ 400VDC (10 times)
<b>*Overload interruption</b>	180A @ 400VDC (100 times min.)	100A @ 120VDC (150 times min.)	50A @ 250VDC (50 times min.)	700A @ 400VDC (40 times min.)
<b>Reverse polarity interruption</b>	-60A @ 200VDC (1,000 times min.)	—	—	-200A @ 200VDC (1,000 times min.)
<b>Coil Information</b>				
<b>Rated voltage</b>	12, 24, 48, 60 & 100VDC	12, 24, 48, 60 & 100VDC	12, 24, 48, 60 & 100VDC	12, 24, 48, 60 & 100VDC
<b>Power consumption</b>	Approx. 5 to 5.4W	Approx. 5 to 5.4W	Approx. 2W	Approx. 11W
<b>Mechanical endurance</b>	200,000 operations min.	200,000 operations min.	100,000 operations min.	200,000 operations min.
<b>Insulation resistance</b>				
<b>Between Coil &amp; Contacts</b>	1,000MΩ min.	1,000MΩ min.	1,000MΩ min.	1,000MΩ min.
<b>Between contacts of the same polarity</b>	1,000MΩ min.	1,000MΩ min.	1,000MΩ min.	1,000MΩ min.
<b>Dielectric strength</b>				
<b>Between coil &amp; contacts</b>	2,500VAC for 1min.	2,500VAC for 1min.	2,500VAC for 1min.	2,500VAC for 1min.
<b>Between contacts of the same polarity</b>	2,500VAC for 1min.	2,500VAC for 1min.	2,500VAC for 1min.	2,500VAC for 1min.
<b>Impulse withstand voltage</b>	4,500V	4,500V	4,500V	4,500V
<b>Ambient operating temperature</b>	-40 to +70°C (with no icing or condensation)	-40 to +70°C (with no icing or condensation)	-40 to +70°C (with no icing or condensation)	-40 to +50°C (with no icing or condensation)
<b>Terminals</b>				
<b>Screw terminals</b>	Yes	Yes	Yes	Yes
<b>Lead wire output</b>	Yes	Yes	Yes	Yes

\*When using a varistor as protective circuit against reverse surge in the relay coil

# Relays - General Purpose

				
<b>General Attributes</b>	<b>MY4H</b>	<b>MK</b>	<b>MY</b>	<b>LY</b>
<b>Dimensions mm (in)</b>	35 H x 28.5 L x 22 W (1.38 x 1.12 x 0.87)	52.58 H x 34.54 L x 34.54 W (2.07 x 1.36 x 1.36)	36 H x 28 L x 21.5 W (1.42 x 1.10 x 0.85)	35.56 H x 27.94 L x 21.59 W (1.40 x 1.10 x 0.85)
<b>Switching</b>	3A	10 A max.	10A (2 pole); 5A (4 pole)	15A
<b>Features</b>	<ul style="list-style-type: none"> <li>• Full hermetic seal for hazardous applications</li> <li>• UL Class1, Division II approved</li> <li>• Signal level switching option using bifurcated contacts</li> </ul>	<ul style="list-style-type: none"> <li>• Octal base plug-in</li> <li>• Exceptional reliability</li> <li>• Push-to-test button standard</li> <li>• CENELEC conformity</li> </ul>	<ul style="list-style-type: none"> <li>• Exceptional reliability</li> <li>• Push-to-test button standard</li> <li>• Arc barrier built into 4 pole</li> <li>• Built in diode (DC) or C/R Circuit</li> <li>• Name plate and mechanical indicator, standard</li> </ul>	<ul style="list-style-type: none"> <li>• Compact power relay</li> <li>• LED, Push-to-test button, bifurcated contacts and other features available</li> <li>• Space efficient power switching</li> <li>• Extended life to 500,000/200,000 operations</li> </ul>
<b>Contact Information</b>				
<b>Contact form</b>	4 Form C	2 Form C, 3 Form C	2 Form C, 4 Form C	1 Form C, 2 Form C, 3 Form C, 4 Form C
<b>Contact type(s)</b>	Single button, bifurcated button	Single button	Single button, bifurcated button	Single button, bifurcated
<b>Contact material(s)</b>	AgSnIn	Ag (fine silver)	AgNi	Ag-Alloy
<b>Electrical service life (@ 1800 ops./hr.) (resistive load)</b>	100,000 min. 3A@24VDC/110VAC (50,000 min. bifurcated)	100,000 min. 10A @ 28VDC/250VAC	2P 500,000: 5A @ 30VDC/250VAC 4P 200,000: 3A @ 30VDC/250VAC 100,000: 3A@30VDC/250VAC (bifurcated)	200,000 min: 15A @ 24VDC/110VAC 10A @ 24VDC/110VAC 500,000 min: (2 pole) 10A @ 110VAC
<b>Max. switching capacity (resistive load)</b>	330VA, 72W	2,500VA, 280W	2,500VA, 300W 1,250VA, 150W (4-pole)	1,700VA, 360W (1 pole) 1,100VA, 240W (2, 3, 4 pole) 550VA, 120W (bifurcated)
<b>Minimum permissible load (@1800 ops./hr.)</b>	100µA @ 1VDC for MY4H 100µA @ 100mVDC for MY4ZH (Bifurcated contacts)	100mA @ 1VDC	2 pole: 1mA @ 5VDC 4 pole: 1mA @ 5VDC 10µA @ 1 VDC (bifurcated contacts)	100mA @ 5VDC 10mA @ 5VDC (bifurcated contacts)
<b>Coil Information</b>				
<b>Coil voltage</b>	24, 110/120VAC 12, 24VDC	12, 24, 110/120, 220/240VAC; 12, 24, 48, 100VDC	6, 12, 24, 48, 110/120, 220/240 VAC; 6,12, 24, 48, 100/110VDC	12, 24, 110/120, 220/240VAC, 12, 24, 48, 100VDC
<b>Power consumption</b>	900 mW; 0.9 - 1.1VA	2.7VA, 1.5W	AC Coil: 0.9 to 1.2VA DC Coil: 0.9W	1.1VA, 0.9W (1 pole); 1.1VA, 0.9W (DPDT); 1.6VA, 1.4W (3PDT); 1.95VA, 1.5W (4PDT)
<b>Insulation class</b>	—	N/A	Class A	Class A
<b>Characteristics</b>				
<b>Operating temperature</b>	-25°C to +60°C	-10°C to +40°C	-55°C to +70°C	-25°C to +70°C
<b>Impulse withstand voltage (1.2 x 50µ sec. unless noted)</b>	—	—	—	—
<b>Dielectric strength (50/60 Hz for 1 minute)</b>	1,000VAC (coil-contact) 1,000VAC (contacts pole pole) 700VAC (open contacts)	2,500VAC (coil-contact) 1,000VAC (open contacts)	2,000VAC (coil-contact) 1,000VAC (open contacts)	2,000VAC (coil-contact) 1,000VAC (open contacts)
<b>Terminal choices</b>	Plug-in	Plug-in	PCB, plug-in	Track mounted socket PCB with .187/.250 QC
<b>Protection level</b>	Hermetic seal	Unsealed	Unsealed	Unsealed, semi-sealed
<b>Accessories</b>	PYF14A-E Socket PYC-A1 Clip	Sockets & clips for track mount sockets with screw terminals, & back connecting sockets with solder & PCB terminals	Sockets & clips for track mount sockets with screw terminals, & back connecting sockets with solder & PCB terminals. Note: PYF-S series screwless clamp terminal socket available Mounting rails= PFP	Sockets & clips for track mount sockets with screw terminals, & back connecting sockets with solder & PCB terminals
<b>Approved standards</b>	UL, CSA	UL, CSA, TUV, VDE, SEMKO	UL, CSA, SEV, CE, VDE, IMA	UL, CSA, SEV, VDE, CE (UL, CSA only with varistors)




# Relays - General Purpose

**NEW!**







General Attributes	G2RV	G2R-S (S)	G7J	G7L
<b>Dimensions mm (in)</b>	91.0 H x 94.0 L x 6.1 W (3.58 x 3.7 x 0.24) Relay & terminal block	35.5 H x 29 L x 13 W (1.40 x 1.14 x .51)	64 H x 53.5 L x 34.5 W (2.52 x 2.11 x 1.36)	49.02 H x 68.58 L x 34.54 W (1.93 x 2.70 x 1.36)
<b>Switching</b>	6A max.	1 pole: 10A max. 2 pole: 5A max.	25A max.	30A max.
<b>Features</b>	<ul style="list-style-type: none"> <li>• Slimmest control relay available</li> <li>• Capable of switching both electrical control loads (6A) and signal level loads (1mA)</li> <li>• Relay available separately</li> <li>• Sealed for unprotected environments</li> </ul>	<ul style="list-style-type: none"> <li>• Nameplate and mechanical flag indicator standard</li> <li>• LED diode, and lockable test button option available</li> <li>• Socket mount 10A relay (1-pole)</li> </ul>	<ul style="list-style-type: none"> <li>• Variety of contact forms</li> <li>• Ideal for 3 phase motor control</li> <li>• 4 pole mini contactor</li> <li>• DIN rail mountable</li> <li>• Minimal chattering</li> <li>• UL94V-0</li> </ul>	<ul style="list-style-type: none"> <li>• Reliable high power relay</li> <li>• 3 mm contact gap</li> <li>• Conforms to IEC 950/UL 1950</li> <li>• Class B insulation standard</li> <li>• Most cost effective solution in its class.</li> <li>• Ideal for pump, motor loads</li> </ul>
<b>Contact Information</b>				
<b>Contact form</b>	1 Form C	1 Form C 2 Form C	4 Form A, 3 Form A/1 Form B, 2 Form A/2 Form B	1 Form A-(Double Make) 2 Form A-(Double Make)
<b>Contact type(s)</b>	Crossbar	Single button, bifurcated crossbar	Single button	Single button
<b>Contact material(s)</b>	Ag Alloy	Ag Alloy	Ag Alloy	Ag Alloy
<b>Electrical service life (@ 1800 ops./hr.) (resistive load)</b>	6,000: 6A @ 30 VDC /250VAC	100,000 min. (at rated loads) (see data sheet for more information)	100,000 min. (at rated loads) (see data sheet for more information)	100,000 min. (at rated loads) (see data sheet for more information)
<b>Maximum switching capacity</b>	1,500VA, 18W (resistive load)	2,500VA, 300W (1-pole resistive load)	5,500VA, 750W (NO contacts) 1,760VA, 240W (NC contacts)	4,400VA
<b>Minimum permissible load (@1800 ops./hr.)</b>	5mA @ 5VDC	100mA @ 5VDC , 10mA @ 5VDC (2 pole)	100mA @ 24VDC	100mA @ 5VDC
<b>Coil Information</b>				
<b>Coil voltage</b>	12, 24, 48VDC 24, 48, 110, 230VAC	6, 12, 24, 48VDC; 24, 110 120, 230, 240VAC	6, 12, 24, 48, 100/110VDC; 6, 12, 24, 50, 100/120, 200/240VAC	12, 24, 48, 100VDC; 12, 24, 100/120, 200/240VAC
<b>Power consumption</b>	300mW	0.9VA, 0.53W	1.8 to 2.6VA, 2.0W	1.7 to 2.5VA, 1.9W
<b>Insulation class</b>	Class A	Class A	Class A, Class B (available)	Class B
<b>Characteristics</b>				
<b>Operating temperature</b>	-40°C to +60°C	-40 to +70°C	-25°C to +60°C	-20°C to +85°C
<b>Impulse withstand voltage (1.2 x 50µ sec. unless noted)</b>	6kV	8kV	10kV (coil-contacts)	10kV (coil-contacts)
<b>Dielectric strength (50/60 Hz for 1 minute)</b>	4,000VAC (coil-contacts) 1,000VAC (open contacts)	1 pole: 5,000VAC (coil-contacts) 1,000VAC (open contacts) 2 pole: 5,000VAC (coil-contacts) 3,000VAC (different polarity) 1,000VAC (open contacts)	4,000VAC (coil-contacts) 4,000VAC (different polarity) 2,000VAC (open contacts)	4,000VAC (coil-contacts) 2,000VAC (different polarity) 2,000VAC (open contacts)
<b>Terminal choices</b>	Relay: Quick-connect Socket: screw terminals, push-in wire connections (sold separately)	Plug-in	Quick-connect, screw, PCB	Quick-connect, screw, PCB
<b>Protection level</b>	Semi-sealed	Unsealed	Unsealed Semi-sealed	Unsealed Semi-sealed
<b>Accessories</b>	Socket: G2RV-SL (UL 508) SSR Option: G3MB / G3MC	Sockets for track mount, sockets with screw terminals, & back connecting sockets with solder & PCB terminals. Note: P2RF-S series screwless clamp terminal socket available. SSR option: G3R.	R99-04V for G5D W-bracket	R99-07G5D E bracket; P7LF-D adapter; P7LF-06 front connecting socket
<b>Approved standards</b>	UL, CSA	UL, CSA, VDE, IEC, LR, CE	UL, CSA, TUV, CE, IEC	UL, CSA, TUV, CE, VDE available





# Relays - General Purpose

	<b>NEW!</b> 		
<b>General Attributes</b>	<b>G7Z</b>	<b>MGN</b>	<b>MJN</b>
<b>Dimensions mm (in)</b>	84 H x 62 L x 45 W (3.31 x 2.44 x 1.77)	Short Base: 55.88 H x 63.50 L x 63.50 W (2.20 x 2.50 x 2.50) Long Base: 60.45 H x 84.33 L x 63.50 W (2.38 x 3.32 x 2.50)	48.38 H x 35.56 L x 38.73 W (1.91 x 1.40 x 1.53)
<b>Switching</b>	40A max. (160A max. in parallel)	30A max.	10A, 20A, 30A (UL ratings) <small>(see: Electrical service life)</small>
<b>Features</b>	<ul style="list-style-type: none"> <li>Each pole able to switch and carry 40A in parallel</li> <li>Capable of switching up to 160A</li> <li>Reduced power consumption &amp; size</li> <li>Low noise</li> <li>Safety function included as standard</li> <li>Optional auxiliary contact block enables concurrent signal (1mA) switching</li> </ul>	<ul style="list-style-type: none"> <li>30 Amp heavy duty power relay</li> <li>Class F coil insulation system for 155°C (total temperature)</li> <li>Coil molded in DuPont Rynite® for environmental protection</li> <li>Rugged construction rivets terminals to base</li> <li>Magnetic blow-out option</li> </ul>	<ul style="list-style-type: none"> <li>Rugged power driver offers superior 3/16" through-air &amp; 3/8" over-surface spacing</li> <li>Interlocked frame &amp; contact block prevent contact misalignment during plug-in</li> <li>Indicator lamp, push-to-operate options</li> <li>10A-30A in same package</li> <li>Continuous duty at 125% coil voltage</li> </ul>
<b>Contact Information</b>			
<b>Contact form</b>	4A, 3A/1B, 2A/2B	1 Form A, 1Form B, 1Form C, 2 Form A, 2 Form C (long base)	1 Form C, 2 Form C, 3 Form C (monostable); 1 Form C, 2 Form C (latching/unlatching)
<b>Contact type(s)</b>	Bifurcated Crossbar	Single button	Single button
<b>Contact material(s)</b>	AgSnIn	5/16" diameter AgCdO <sub>2</sub>	3/16" diameter AgCdO <sub>2</sub>
<b>Electrical service life (@ 1800 ops./hr.) (resistive load)</b>	100,000: 5A @ 110VDC (at 1,200 ops/hr) 80,000: 40A @ 440VAC	100,000 min. 30A @ 28VDC/240VAC	100,000 min. 10A @ 28VDC/240VAC 20A @ 28VDC/277VAC 30A @ 28VDC
<b>Max. Switching Capacity (resistive load)</b>	17,600VA, 550W 440VA, 110W (auxiliary contact block)	N/A	N/A
<b>Minimum permissible load (@1800 ops./hr.)</b>	2A @ 24VDC <1mA @ 5VDC (auxiliary contact block)	N/A	N/A
<b>Coil Information</b>			
<b>Coil voltage</b>	12, 24VDC	6, 12, 24, 120, 240, 480VAC; 6, 12, 24, 48, 110VDC	6, 12, 24, 120VAC 5, 6, 12, 24, 48, 110VDC
<b>Power consumption</b>	3.7W	9.5VA nominal; 2W nominal	AC 1.7VA (1, 2PDT) 2.0VA (3PDT DC 1.2W)
<b>Insulation class</b>	Class B	Class F	Class A
<b>Characteristics</b>			
<b>Operating temperature</b>	-25°C to +60°C	At 30Amps: -45°C to +80°C (AC coil) -45°C to +115°C (DC coil)	-45°C to +60°C (1 & 2 pole AC coil), + 70°C (DC coil) -45°C to +45°C (3 pole AC coil) -45°C to +70°C (3 pole DC coil)
<b>Impulse withstand voltage (1.2 x 50µ sec. unless noted)</b>	10kV (coil to contacts or different polarity) 4.5kV (open contacts)	N/A	N/A
<b>Dielectric strength (50/60 Hz for 1 minute)</b>	4,000VAC (coil-contacts) 4,000VAC (different polarity) 2,000VAC (open contacts)	2,200Vrms, 60Hz between contacts; 2,200Vrms, 60Hz between other elements	750VAC, rms 60Hz across open contacts; 2,500VAC, rms 60Hz all other mutually insulated elements
<b>Terminal choices</b>	Screw	Screw	Quick-connect plug-in
<b>Protection level</b>	Unsealed, fully sealed	None	Semi-sealed
<b>Accessories</b>	Auxiliary Contact Block (2 poles of 4 poles) Signal level switching capability (2 poles of 4 poles)	Aluminum dust cover - sealed knock-out holes for standard conduit fittings. Relay mounts on pre-drilled base. Snap action cover release 127 W x 76.20 H x 101.60 D (5 x 3 x 4)	PTF11PC Socket; PTF11QDC Socket; PTF21PC Socket; PTFPCB Socket; PYMJN-PCB Retaining Clips; PYMJN-S Retaining Clips
<b>Approved standards</b>	UL, CSA, TUV, VDE	UL	UL, CSA





# Relays - Solid State

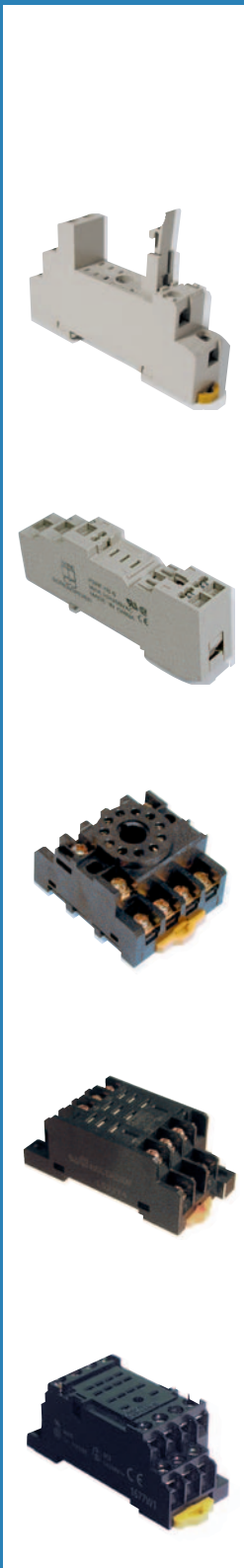
	SIP 	SIP 	DIP 	DIP 
General Attributes	G3MB	G3MC	G3R I/O	G3DZ
<b>Dimensions mm (in)</b>	20.5 H x 24.5 L x 5.5 W (0.81 x 0.96 x 0.22)	13.5 H x 24.5 L x 4.5 W (0.53 x 0.96 x 0.18)	Input & Output modules: 28 H x 29 L x 13 W (1.10 x 1.14 x 0.51)	12.5 max. H x 18.5 L x 6.5 W (0.49 x 0.73 x 0.26) max.
<b>Switching current (resistive)</b>	2A @ 240VAC	2A @ 240VAC	Input module: 100mA; Output module: 2A	0.6A @ 240VAC
<b>Features</b>	<ul style="list-style-type: none"> <li>• Space saving SIP design</li> <li>• Industry standard footprint</li> <li>• Monoblock construction results in ultimate reliability</li> </ul>	<ul style="list-style-type: none"> <li>• Reduced height thin profile SIP</li> <li>• Ideal for close PCB mounting</li> <li>• Monoblock construction results in ultimate reliability</li> <li>• Industry standard footprint</li> </ul>	<ul style="list-style-type: none"> <li>• 4 kV insulation</li> <li>• Operation indicator standard</li> <li>• Interchangeable with G2R electromechanical relay</li> <li>• Ideal for DIN rail mount I/O operations</li> </ul>	<ul style="list-style-type: none"> <li>• AC/DC &amp; AC half-wave switching with one model</li> <li>• 10µA max. leakage current</li> <li>• Matches G6D form factor</li> </ul>
<b>Operating temperature</b>	-30°C to +80°C	-30°C to +80°C	-30°C to +80°C	-30°C to +85°C
<b>Operating input</b>	5, 12, 24VDC	5, 12, 24VDC	Input module: 5VDC; 6.6-32VDC; 60-264VAC; Output module: 4-32VDC	5, 12, 24VDC
<b>Output voltage</b>	75-264VAC	75-264VAC	Input module: 4-32VDC; Output module: 75-264VAC, 4-200VDC	5, 12, 24VDC
<b>Leakage Current (max.)</b>	1.5mA (at 200VAC)	1.5mA (at 200VAC)	Input Module: 5µA Output Module: 1.5mA (AC) 1mA (DC)	10µA (at 125VDC)
<b>Isolation</b>	Phototriac	Phototriac	Photocoupler, Phototriac	Phototriac
<b>Dielectric strength (50/60Hz for 1 min.)</b>	2,500VAC	2,500VAC	4,000VAC	2,500VAC
<b>Zero crossing</b>	Optional	Yes	Input module: No; Output module: Yes	No
<b>Snubber circuit</b>	Optional	Yes	Input module: No; Output module	Yes (Built-in Varistor)
<b>Life (MTTF)</b>	100,000 hours	100,000 hours	100,000 hours	100,000 hours
<b>Mounting</b>	PCB	PCB	Socket	PCB or Socket
<b>Terminal</b>	PCB	PCB	Plug-in	PCB
<b>Approvals</b>	UL, CSA, TUV	UL, CSA, VDE	UL, CSA, TUV	UL, CSA
<b>Equivalent Omron EMR footprint</b>	G2RV similar for terminal block	G2RV similar for terminal block	G2R	G6D, G6DS
<b>Optional heat sink</b>	N/A	N/A	N/A	N/A
<b>Socket</b>	N/A	N/A	P2RF-05E	P6D-04P

# Relays - Solid State

	SIP 	SIP 	SIP 	SIP 
General Attributes	G3S/G3SD	G3CN	G3M	G3TB
<b>Dimensions mm (in)</b>	16.5 H x 20 L x 10 W (0.65 x 0.79 x 0.39)	26H x 33H x 14 W (1.04 x 1.30 x .55) max.	20 H x 40 L x 9 W (0.79 x 1.58 x 0.35)	Input module: 20.5 H x 43.5 L x 10 W (0.81 x 1.70 x 0.39) Output module: 30.5 H x 43.5 L x 10 W (1.20 x 1.70 x 0.39)
<b>Switching current (resistive) (max.)</b>	1A @ 240VAC (1.2A, G3S-PD & heatsink) (1.1A, G3SD-PD & heatsink)	2A, 3A, @ 53VDC, 26VAC	2, 3A, 5A @ 250VAC	Input module: 25mA @ 4 to 32VDC Output module: 3mA max. @ 5 to 48VDC 3mA max. @ 100 to 240 VAC 1.5 max. @ 48 to 200 VDC
<b>Features</b>	<ul style="list-style-type: none"> <li>AC and DC models available</li> <li>Socketable</li> <li>Heatsink, available</li> <li>Interchanges with G6B SPST electrical mechanical relay</li> </ul>	<ul style="list-style-type: none"> <li>Flat &amp; vertical packages</li> <li>Ideal for FA &amp; OA equipment</li> </ul>	<ul style="list-style-type: none"> <li>Multi-input SSR</li> <li>Space-saving SIP design</li> <li>Ideal for high density Power PCB applications</li> <li>High current switching capability</li> </ul>	<ul style="list-style-type: none"> <li>Color-coded input &amp; output modules</li> <li>Industry standard footprint</li> <li>4kV dielectric strength</li> <li>LED indicator</li> </ul>
<b>Operating temperature</b>	-30°C to +80°C	-30°C to +80°C	-30°C to +80°C	-30°C to +85°C
<b>Operating input</b>	5, 12, 24VDC	5, 12, 24; 3~28VDC	5, 12, 24VDC	Input module: 80-264VAC, 3-32VDC; Output module: 3-32VDC
<b>Output voltage</b>	5, 12, 24VDC	75~264VAC 3~53VDC	75-264VAC	Input module: 4-32VDC; Output module: 75-264VAC, 4-200VDC
<b>Leakage Current (max.)</b>	2mA (G3S) 0.1mA @ 26VDC (G3S)	2.5/5mA	2mA @ 100VAC/5mA @ 200VAC (2Amp versions) 1.5mA @ 200VAC (3 & 5 Amp versions)	Input module: 100µA max. Output module: 5mA @ 200VAC (AC) 1mA max. (DC)
<b>Isolation</b>	Phototriac (G3S) Photocoupler (G3SD)	Phototriac Photocoupler	Phototriac	Photocoupler
<b>Dielectric strength (50/60Hz for 1 min.)</b>	2,500VAC	2,500VAC	2,000VAC (2A versions) 2,500VAC (3A and 5A versions)	4,000VAC
<b>Zero crossing</b>	No	Optional	Optional	Input module: No; Output module: Yes
<b>Snubber circuit</b>	Yes (Built-in Varistor)	No	Yes	Input module: No; Output module: Yes
<b>Life (MTTF)</b>	100,000 hours	100,000 hours	100,000 hours	100,000 hours
<b>Mounting</b>	PCB or Socket	PCB	PCB	PCB
<b>Terminal</b>	PCB	PCB	PCB	PCB
<b>Approvals</b>	UL, CSA	UL (114), CSA (22.2)	UL, CSA, TUV	UL, CSA
<b>Equivalent Omron EMR footprint</b>	G6B	N/A	N/A	N/A
<b>Optional heat sink</b>	Y92B-S08N	N/A	N/A	N/A
<b>Socket</b>	P6B-04P (PCB)	N/A	N/A	N/A

# Relays - Solid State

	SIP 	Quick Connect 	Quick Connect 	
General Attributes	G3TC	G3NE	G3NA	G3PA/B
<b>Dimensions mm (in)</b>	31.8 H x 43.2 L x 15.2 W (1.25 x 1.7 x 0.6)	11.5 H x 47 L x 37.5 W (0.45 x 1.90 x 1.50)	27 H x 58 L x 43 W (1.06 x 2.28 x 1.69)	Consult Omron
<b>Switching current (resistive) (max.)</b>	Input Module: 12mA, 15mA, or 18mA (depending on model) Output Module: 3A (1A on DC output models rated < 200VDC)	20A max. @ 240VAC (264VAC max.)	Versions range from 10A to 90A max. (when using heat sink)	up to 45A
<b>Features</b>	<ul style="list-style-type: none"> <li>• Color-coded modules</li> <li>• Industry standard footprint</li> <li>• Built-in anchor screw</li> <li>• Optical isolation – Dielectric 4kV</li> <li>• Zero cross on AC output modules</li> </ul>	<ul style="list-style-type: none"> <li>• High capacity</li> <li>• Panel Mount</li> <li>• Quick-connect terminals</li> </ul>	<ul style="list-style-type: none"> <li>• Ideal for industrial controls &amp; commercial cooking</li> <li>• "Hockey Puck" standard</li> <li>• Operation indicator standard</li> </ul>	<ul style="list-style-type: none"> <li>• Built-in heat sink increases life and reliability</li> <li>• Voltage turn-on at zero crossing reduces initial inrush load currents</li> <li>• LED indicator when control power applied</li> </ul>
<b>Operating temperature</b>	-30°C to +80°C	-30°C to +80°C	-30°C to +80°C	-30°C to +80°C
<b>Operating input</b>	Input Module: 90-140VDC/AC, 180-280 VDC/AC, 10-32VDC/AC Output Module: 5, 15, 24VDC	5, 12, 24VDC	4-32VDC; 75-264VAC	12-24VDC
<b>Output voltage</b>	Input Module: 4.5-6VDC, 12-18VDC, 20-30VDC Output Module: 75-140 VAC, 75-280VAC, 5-60 VDC, 5-200VDC	75-264VAC	19 - 264VAC 180 - 528VAC 4 - 220VDC (10A model) 400 - 600VAC (10, 25, 50A models)	75 - 264VAC 180 - 528VAC
<b>Leakage Current (max.)</b>	Input Module: 100µA AC Output Modules: 5mA @ 240VAC 2.5mA @ 120VAC DC Output Modules: 1mA	2mA (at 100VAC) 5mA (at 200VAC)	5mA @ 100VAC 10mA @ 200VAC 20mA @ 400VAC	10mA @ 200VAC 20mA @ 400VAC
<b>Isolation</b>	AC Input, DC Input, DC Output: Photocoupler AC Output: Phototriac	Phototriac	Phototriac, Photocoupler	Phototriac
<b>Dielectric strength (50/60Hz for 1 min.)</b>	4,000VAC	2,000VAC	2,500VAC 4000VAC (75 and 90A models)	G3PA: 4,000VAC G3PB: 2,500VAC
<b>Zero crossing</b>	Yes (AC output modules only)	Optional	Yes	Yes
<b>Snubber circuit</b>	Yes (AC output modules only)	Yes (built in varistor)	Yes	Yes
<b>Life (MTTF)</b>	100,000 hours	100,000 hours	100,000 hours	100,000 hours
<b>Mounting</b>	PCB with anchor screw	Plug-in	Panel	Panel, DIN
<b>Terminal</b>	PCB	Quick connect	Screw	Screw
<b>Approvals</b>	UL, CSA, TUV, CE	UL, CSA, TUV	UL, CSA, TUV	UL, CSA, TUV, VDE
<b>Equivalent Omron EMR footprint</b>	N/A	N/A	N/A	N/A
<b>Optional heat sink</b>	N/A	Y92B-N50, -N100	Y92B-A □ □, -B□ □, -P	N/A
<b>Socket</b>	N/A	Mounting plate	Mounting plate	PPF-xxx



Relay Type	Track Mount Sockets	Back Connecting Sockets	
		Solder terminals	PCB terminals
G2R-1-S	P2RF-05 P2RF-05-E P2RF-05-S	P2R-05A	P2R-05P
G2R-2-S	P2RF-08 P2RF-08-E P2RF-08-S	P2R-08A	P2R-08P
G2RV	G2RL-SL500, -SL700	–	–
G6B	–	–	P6B-04P (1-pole), P6B-26P (2-pole)
G6D	–	–	P6D-04P
G6BK	–	–	P6B-06P
G6BU	–	–	P6B-04P
G6C-1, G6C-2	–	–	P6C-06P
G6CK	–	–	P6C-08P
G6CU	–	–	P6C-06P
LY1, LY2	PTF08A-E	PT08	PT08-0
LY3	PTF11A	PT11	PT11-0
LY4	PTF14A-E	PT14	PT14-0
MK2	PFO83A-E	PL08	PLE08-0
MK3	PF113A-E	PL11	PLE11-0
MY2	PYF08A-E PYF08A-N PYF08-S	PY08	PY08-02
MY3	PYF11A	PY11	PY11-02
MY4	PYF14A-E PYF14A-N PYF14S	PY14	PY14-02
MY2K	PYF14A-E	PY14	PY14-02
MY4(Z)H	PYF14A-E	–	–

NOTES: 1. -E and -N models are finger-protect construction. Round terminals cannot be used. Use Y-shaped terminals.  
2. -S types are screwless terminal styles.

Relay Type	Mounting	Adaptor	Front Connecting Socket
			Track Mount/Panel Mount
G7J-(ALL)	R99-04-FOR-G5F W bracket	–	–
G7L-1A-T	R99-07G5D E bracket	P7LF-D	P7LF-06
G7L-1A-TJ			P7LF-06
G7L-1A-B			–
G7L-1A-BJ			–
G7L-2A-T			P7LF-06
G7L-2A-TJ			P7LF-06
G7L-2A-B			–
G7L-2A-BJ			–

Terminal Cover	Socket Bridge	Mounting Track	Length
P&LE-C	PYDM	PFP-100N	1 meter
		PFP-50N	.5 meter



# Designed to "Drop-In" Your Application.

Omron Electronic Components has a great variety of standard options. We can deliver a snap action switch that will drop right into your application. Saving you time, component counts, & cost while improving your products overall quality.

These options include:

### Actuators:

- Long & short panel mount plungers
- Long & short spring plungers
- Hinge levers in various lengths & orientation
- Roller levers in various lengths & orientations
- Simulated roller
- Leaf

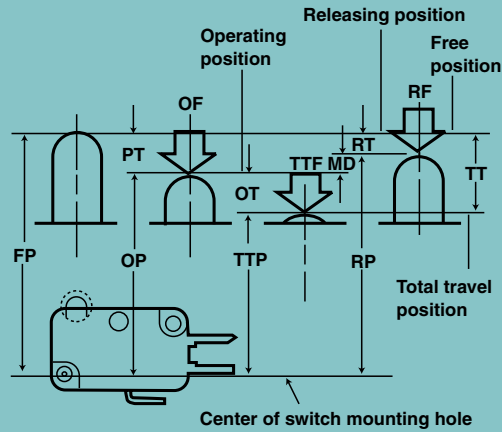
### Termination styles:

- PCB
- Solder
- Quick Connect
- Screw
- Wire Leads
- Connector

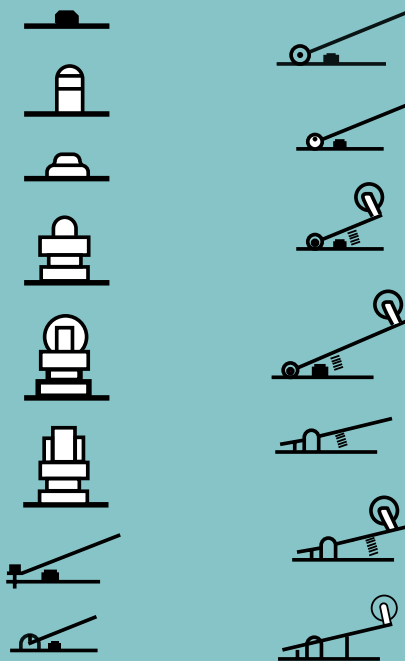
### Additional Features:

- Sealed / Unsealed versions available.
- Class N (200C) types available. (D3V-T)

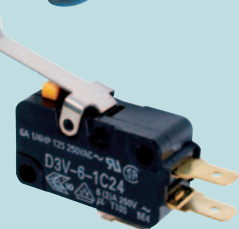
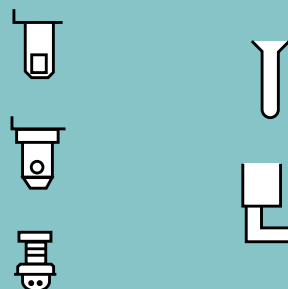
**Contact Omron Components and have it your way. Configure a switch that meets your application needs.**







## Plunger & Lever Options



## Terminal Options







# Switches - Snap Action





				
	Z	A	X	DZ
<b>Dimensions mm (in)</b>	24.2 H x 17.45 D x 49.2 W (0.95 x 0.69 x 1.93)	24.2 H x 17.45 D x 49.2 W (0.95 x 0.69 x 1.93)	24.2 H x 17.45 D x 49.2 W (0.95 x 0.69 x 1.93)	22.7 H x 17.45 D x 49.2 W (0.89 x 0.69 x 1.93)
<b>Features</b>	<ul style="list-style-type: none"> <li>• General Purpose Snap Action Switch</li> <li>• High precision 15 A switch available in a variety of styles</li> </ul>	<ul style="list-style-type: none"> <li>• General Purpose Snap Action Switch</li> <li>• High capacity switch handles loads with large inrush currents</li> </ul>	<ul style="list-style-type: none"> <li>• DC switch</li> <li>• Magnetic blowout to extinguish arc</li> </ul>	<ul style="list-style-type: none"> <li>• DPDT basic switch</li> <li>• Incorporates two completely independent built-in switches</li> <li>• Can switch two independent circuits operating on different voltages</li> </ul>
<b>Contact Rating(s)</b>				
<b>Resistive load</b>	0.1A @ 125VAC 15A @ 250VAC*	20A @ 250VAC	10A @ 125VDC 3 A @ 250VDC	10A @ 250VAC
<b>Contact form</b>	SPDT	SPDT	SPDT	DPDT
<b>Operating force (OF)*</b>	250g to 350g	400g to 625g	510g	570g
<b>Mechanical service life</b>	Refer to "SPECIFICATIONS" section of data sheet for detailed service life information	1,000,000 ops. min. (at rated OT load)	1,000,000 operations min.	1,000,000 operations min.
<b>Electrical service life</b>	Refer to "SPECIFICATIONS" section of data sheet for detailed service life information	500,000 ops. min. (at rated OT load)	100,000 operations min.	500,000 operations min.
<b>Mounting pitch mm (in)</b>	25.4 (1.0)	25.4 (1.0)	25.4 (1.0)	25.4 (1.0)
<b>Actuator types</b>	Pin plunger, slim spring plunger, short spring plunger, panel mount plunger, panel mount roller plunger, panel mount cross roller plunger, hinge lever, low force hinge lever, short hinge roller lever, hinge roller lever, unidirectional short hinge roller lever, spring plunger, flexible rod	Pin plunger, short spring plunger, panel mount plunger, panel mount roller plunger, panel mount cross roller, short hinge lever, hinge lever, short hinge roller lever, hinge roller lever	Pin plunger, short spring plunger, slim spring plunger, panel mount plunger, panel mount cross-roller plunger, panel mount roller plunger, leaf spring, hinge lever, hinge roller lever, short hinge lever, short hinge roller lever	Pin plunger, hinge lever, short hinge roller lever, hinge roller lever
<b>Terminal choices</b>	Solder, Screw	Solder, Screw, or Quick connect (#250)	Solder, Screw	Solder, Screw
<b>Approved standards</b>	UL, CSA, SEV	UL, CSA, SEV	UL, CSA	UL, CSA

\*Values are for pin plunger type only

# Switches - Snap Action

				
	<b>TZ</b>	<b>D3V</b>	<b>V</b>	<b>VX</b>
<b>Dimensions mm (in)</b>	32 H x 17.45 D x 49.2 W (1.26 x 0.69 x 1.93)	15.9 H x 10.3 D x 27.8 W (0.63 x 0.41 x 1.09)	15.9 H x 10.3 D x 27.8 W (0.63 x 0.41 x 1.09)	18.8 H x 10.3 D x 27.8 W (0.74 x 0.41 x 1.09)
<b>Features</b>	<ul style="list-style-type: none"> <li>Stable operation at 400°C ambient temperature</li> <li>High contact reliability</li> <li>Smooth operation</li> </ul>	<ul style="list-style-type: none"> <li>Miniature Snap Action Switch</li> <li>Environmentally friendly: free of beryllium copper &amp; lead</li> <li>Maximum operating temperature of 105°C (standard versions)</li> <li>Internally or externally fitted levers</li> <li>200°C versions available (D3V-T)</li> </ul>	<ul style="list-style-type: none"> <li>Miniature Snap Action Switch</li> <li>Industry standard design with 15 A (V-15G) or 10 A (V-10G) rating</li> <li>Cadmium-free contacts</li> <li>Internal lever options</li> </ul>	<ul style="list-style-type: none"> <li>Miniature Snap Action</li> <li>Low operating force</li> <li>High contact reliability</li> <li>0.1 A to 5 A</li> </ul>
<b>Contact Rating(s)</b>				
<b>Resistive load</b>	1A @ 250VAC	21/16/11/6A @ 125/250VAC 0.1A @ 125VAC	15A @ 250VAC (V-15G) 10A @ 250VAC (V-10G)	5A @ 250VAC 0.1A @ 125VAC
<b>Contact form</b>	SPST	SPDT, SPST-NC, SPST-NO	SPDT, SPST-NC, SPST-NO	SPDT, SPST-NO, SPST-NC
<b>Operating force (OF)*</b>	500g	50g, 100g, or 200g	100g, 200g, or 400g (V-15G) 100g or 200g (V-10G)	25g, 50g
<b>Mechanical service life</b>	100,000 operations min.	10,000,000 operations min.	50,000,000 operations min.	50,000,000 (5A) 10,000,000 (0.A)
<b>Electrical service life</b>	50,000 operations min.	100,000 operations min. (D3V-16) 200,000 operations min. (D3V-11) 500,000 operations min. (D3V-6 / D3V-01)	100,000 operations min. (V-15G) 300,000 operations min. (V-10G)	500,000 (5A ) 1,000,000 (0.1A )
<b>Mounting pitch mm (in)</b>	25.4 (1.0)	–	10.3 x 22.2 (0.41 x 0.87)	22.2
<b>Actuator types</b>	Pin plunger, hinge lever, short hinge roller lever, hinge roller lever	Pin plunger, short hinge lever, hinge lever, long hinge lever, simulated roller lever, short hinge roller lever, hinge roller lever	Pin plunger, short hinge lever, hinge lever, long hinge lever, simulated roller lever, short hinge roller lever, hinge roller lever	Pin plunger, short hinge lever, hinge lever, long hinge lever, simulated roller lever, short hinge roller lever, hinge roller lever
<b>Terminal choices</b>	Bolt	Solder/Quick connect (#187) Quick connect (#187) Quick connect (#250)	Solder/Quick connect (#187) Quick connect (#187), Quick connect (#250), Short solder, Screw	Solder, Quick-connect (#187)
<b>Approved standards</b>	–	UL, CSA, VDE, SEMKO	UL, CSA, SEV, VDE, SEMKO, DENMARK	UL, CSA, VDE
*Values are for pin plunger type only				

# Switches - Snap Action

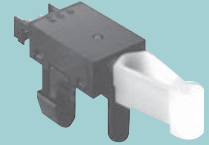
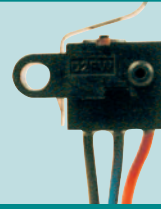
		<b>NEW!</b> 	<b>NEW!</b> 	
	<b>SS-P/SS</b>	<b>SSG</b>	<b>D3M</b>	<b>D2F</b>
<b>Dimensions mm (in)</b>	10.2 H x 6.4 D x 19.8 W (0.40 x 0.25 x 0.78)	10.2 H x 6.4 D x 19.8 W (0.40 x 0.25 x 0.78)	10 H x 7 D x 31.6 W (0.39 x 0.28 x 1.24)	6.5 H x 5.8 D x 12.8 W (0.26 x 0.23 x 0.50)
<b>Features</b>	<ul style="list-style-type: none"> <li>Subminiature Snap Action Switch</li> <li>SS-01: Switches microcurrent/microvoltage load with crossbar contacts</li> <li>SS-3: Single-leaf moveable spring</li> <li>SS-5: Split double spring mechanism for a long life of up to 30 million operations</li> <li>SS-10: Split double spring mechanism for a long life of up to 10 million operations</li> <li>Internal lever options</li> </ul>	<ul style="list-style-type: none"> <li>Subminiature Snap Action Switch</li> <li>SS-01: Switches microcurrent/microvoltage load with crossbar contacts</li> <li>SS-5: Split double spring mechanism for a long life of up to 30 million operations</li> <li>Wide operating temp. range of -25 to + 125°C</li> <li>Internal lever options</li> <li>Global switch conforming to EN, UL &amp; CSA</li> </ul>	<ul style="list-style-type: none"> <li>External actuators</li> <li>Easy wiring through connector terminals</li> </ul>	<ul style="list-style-type: none"> <li>Subminiature Snap Action Switch</li> <li>Switches microvoltage/ micro-current loads</li> <li>Long lifespan assured by high-precision dual spring reverse-action mechanism</li> </ul>
<b>Contact Rating(s)</b>				
<b>Resistive load</b>	0.1A @ 125VAC (SS-01) 3A @ 125VAC (SS-3) 5A @ 125VAC (SS-5) 10.1A @ 125/250VAC (SS-10)	3A @ 250VAC 0.1A @ 250VAC	0.1A @ 30VDC	0.1A @ 30VDC (D2F-01) 3A @ 125VAC (D2F) 1A @ 125VAC (D2F-F)
<b>Contact form</b>	SPDT (SPST-NC, SPST-NO per request)	SPDT, SPST-NO, SPST-NC	SPST-NC, SPST-NO	SPDT
<b>Operating force (OF)*</b>	25g, 50g, or 150g (SS-01) 150g (SS-3) 50g or 150g (SS-5) 150g (SS-10)	25g, 51g, 153g	153g	75g (D2F-01) 150g (D2F) 75g (D2F-F)
<b>Mechanical service life</b>	30,000,000 ops. min. (SS-01, SS-5)* 1,000,000 ops. min. (SS-01P, SS-3) 10,000,000 ops. min. (SS-10)*	10,000,000 operations min.	500,000 operations min.	1,000,000 operations min.
<b>Electrical service life</b>	200,000 operations min. (SS-01, SS-5)** 70,000 operations min. (SS-3) 50,000 operations min. (SS-10)**	200,000 operations min.	200,000 operations min.	30,000 operations min. (OT: full stroke)
<b>Mounting pitch mm (in)</b>	9.5 (0.37)	9.5	9.5	6.5 (0.26)
<b>Actuator types</b>	Pin plunger, hinge lever, simulated roller lever, formed hinge lever, hinge roller lever	Pin plunger, hinge lever, simulated roller lever, hinge roller lever	Pin plunger, hinge lever, hinge roller lever, simulated roller lever	Pin plunger, hinge lever, simulated roller lever, roller lever
<b>Terminal choices</b>	SS-01, SS-3, SS-5: PCB (straight, parallel left, parallel right), Solder, Quick connect SS-10: PCB (straight), Solder, Quick connect (#110)	Solder, quick-connect (#110), PCB	Dipole XA Connector	PCB (straight, self-supporting, right and left angle), Solder
<b>Approved standards</b>	UL, CSA, EN	UL, CSA, EN	UL, CSA	UL, CSA
<b>* Values are for pin plunger type only</b>	*at rated OT value **at rated load			

# Switches - Sealed Snap Action

		<b>NEW!</b> 		
	<b>D2VW</b>	<b>D2RW</b>	<b>D2SW</b>	<b>D2SW-P</b>
<b>Dimensions mm (in)</b>	15.9 H x 10.3 D x 33 W (0.63 x 0.41 x 1.29)	15.9 H x 10.3 D x 35.9 W (0.63 x 0.41 x 1.41)	10.1 H x 6.4 D x 19.8 W (0.40 x 0.25 x 0.78)	7.7 H x 6.4 D x 19.8 W (0.30 x 0.25 x 0.78)
<b>Features</b>	<ul style="list-style-type: none"> <li>• Miniature Snap Action Switch</li> <li>• Sealed water-tight switch conforms to IP67 &amp; IP68</li> </ul>	<ul style="list-style-type: none"> <li>• Suitable for microloads to 1 million operations minimum</li> <li>• Internal Reed Switch sealed to IP67 ensures stable operation</li> <li>• Extended humidity operating range, up to 95% RH</li> <li>• Available with internally fitted levers</li> </ul>	<ul style="list-style-type: none"> <li>• Subminiature snap action switch</li> <li>• Small sealed switch conforms to IP67 &amp; IP68</li> </ul>	<ul style="list-style-type: none"> <li>• Sealed basic switch (IP67)</li> <li>• Single leaf movable spring construction</li> <li>• Microload versions available</li> </ul>
<b>Contact Rating(s)</b>				
<b>Resistive load</b>	0.1A @ 125VAC or 5A @125/250VAC	0.25A @ 100VDC	0.1A @ 125VAC or 3A @ 125VAC	2A @ 250VAC or 0.1A @ 125VAC
<b>Contact form</b>	SPDT (SPST-NC, SPST-NO per request)	SPST-NO	SPDT (SPST-NC, SPST-NO per request)	SPDT, SPST-NO, SPST-NC
<b>Operating force (OF)*</b>	200g	153g	180g	183g
<b>Mechanical service life</b>	10,000,000 operations min.	1,000,000 operations min.	5,000,000 operations min.	1,000,000 operations min.
<b>Electrical service life</b>	1,000,000 operations min. (0.1A, 125VAC) 100,000 operations min. (3A, 125/250VAC)	1,000,000 operations min.	200,000 operations min. (0.1 or 3A, 125VAC) 100,000 operations min. (2A, 250VAC)	50,000 (2 A) or 200,000 (0.1A) operations min.
<b>Mounting pitch mm (in)</b>	10.3 x 22.2 (0.41 x 0.87)	22.2mm	9.5 (0.37)	9.5mm
<b>Actuator types</b>	Pin plunger, short hinge lever, hinge lever, long hinge lever, simulated roller lever, short hinge roller lever, hinge roller lever	Pin plunger, hinge lever, hinge roller lever, simulated roller lever	Pin plunger, hinge lever, simulated roller lever, hinge roller lever	Pin plunger, hinge lever, hinge roller lever, simulated roller lever
<b>Terminal choices</b>	Solder/Quick connect (#187 tab terminals) lead wires	Molded lead wires	Solder, Quick connect (#110), PCB, lead wires	Solder, Quick connect (#110), PCB (even & uneven pitch), Molded lead wires
<b>Approved standards</b>	UL, CSA (refer to "Ratings" section of data sheet)	–	UL, CSA	UL, CSA
*Values are for pin plunger type only				
<p>**IP68 Ratings are based on specific application environments and conditions, per IEC 529. Test conditions for Grade 8 pertaining to continuous immersion are subject to prior agreement between Omron and the user. Acceptance of the test requirements and the ratings may or may not occur, solely based on the specific conditions of each application. Consult Omron for consideration of specific usage conditions.</p>				

# Switches - Sealed Snap Action

**NEW!**



**D2HW**

**D2JW**

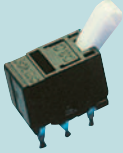



**D2FW-G**

**D2X**

	D2HW	D2JW	D2FW-G	D2X
<b>Dimensions mm (in)</b>	7 H x 5.3 D x 13.3/18.5 W (0.28 x 0.21 x 0.52/0.73)	9.4 H x 5.3 D x 12.7 W (0.37 x 0.21 x 0.50)	13.5 H x 8.0 D x 23.5 W (0.53 x 0.31 x 0.93)	28.1 H x 8.4 D x 5.3 W (1.11 x 0.33 x 0.21)
<b>Features</b>	<ul style="list-style-type: none"> <li>• Subminiature Snap Action Switch</li> <li>• Small sealed switch with long stroke for reliable ON/OFF action</li> <li>• Conforms to IP67</li> </ul>	<ul style="list-style-type: none"> <li>• Small size</li> <li>• Gold crossbar contact and coil-spring for long life</li> <li>• IP67 rating for molded lead wire versions</li> </ul>	<ul style="list-style-type: none"> <li>• Subminiature Snap Action Switch</li> <li>• Small sealed switch with lead wires</li> <li>• Conforms to IP67</li> </ul>	<ul style="list-style-type: none"> <li>• High contact force</li> <li>• Wiping action for greater contact reliability</li> </ul>
<b>Contact Rating(s)</b>				
<b>Resistive load</b>	2A @ 12VDC/ 1A @ 24VDC/ 0.5A @ 42VDC	0.1A @ 30VDC	0.5A @ 30VDC or 50mA @ 30VDC	0.1A @ 30VDC
<b>Contact form</b>	SPDT, SPST-NC, SPST-NO	SPDT	SPDT, SPST-NC, SPST-NO	SPST-NC
<b>Operating force (OF)*</b>	76g	250g	120g	50g
<b>Mechanical service life</b>	1,000,000 operations min.	1,000,000 operations min.	300,000 operations min.	1,000,000 operations min.
<b>Electrical service life</b>	100,000 operations min.	500,000 operations min.	100,000 operations min.	50,000 operations min.
<b>Mounting pitch mm (in)</b>	8 (0.32) posts, 13 (0.51 ) screw	4.8	16 (0.63)	12.2
<b>Actuator types</b>	Pin plunger, hinge lever, long hinge lever, simulated roller lever, leaf lever, simulated leaf lever, long leaf lever	Pin plunger, short hinge lever, hinge lever, simulated roller lever, hinge roller lever	Leaf lever, Long leaf lever	Bi-directional paddle
<b>Terminal choices</b>	PCB (straight, angled), Solder, Lead wire (bottom, right side, left side)	Solder, molded lead wire	Lead wires	Crimp connector
<b>Approved standards</b>	–	UL, CSA, VDE	–	–



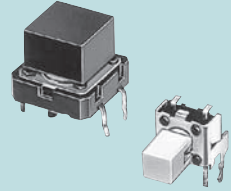
\* Values are for pin plunger type only

# Switches - Snap Action

		<b>NEW!</b> 	<b>NEW!</b> 	
	<b>D3C</b>	<b>D3K</b>	<b>D3D</b>	<b>D2T</b>
<b>Dimensions mm (in)</b>	6 H x 4.2 D x 8 W (0.24 x 0.17 x 0.31)	13.7 H x 5.6 D x 18.9 W (0.54 x 0.22 x 0.74)	30.7 H x 15 D x 36.4 W (1.21 x 0.59 x 1.43)	24.65 H x 11.5 D x 28.8 W (0.97 x 0.45 x 1.13)
<b>Features</b>	<ul style="list-style-type: none"> <li>• Low torque built-in slide mechanism for selecting shorting or non-shorting timing</li> </ul>	<ul style="list-style-type: none"> <li>• Very low operating force</li> <li>• Detects cards &amp; paper sheet</li> </ul>	<ul style="list-style-type: none"> <li>• Miniature door switch</li> <li>• Low-noise</li> <li>• Disconnectable crimp connector</li> <li>• Gold crossbar contacts</li> </ul>	<ul style="list-style-type: none"> <li>• Compact door switch</li> <li>• Incorporates two circuits for power loads &amp; micro loads</li> </ul>
<b>Contact Rating(s)</b>				
<b>Resistive load</b>	0.1A @ 30VDC	10mA @ 12VDC	1A @ 125VAC or 0.5A @ 250VAC	5A @ 250VAC 0.1A @ 25VAC
<b>Contact form</b>	SPDT	SPST-NO	SPDT, SPST-NC, SPST-NO	DPST-NO
<b>Operating force (OF)*</b>	40g, 130g	3g	204g	330g
<b>Mechanical service life</b>	50,000 operations min.	2,000,000 operations min.	300,000 operations min.	100,000 operations min.
<b>Electrical service life</b>	50,000 operations min.	2,000,000 operations min.	100,000 operations min.	100,000 operations min.
<b>Mounting pitch mm (in)</b>	5.7	17.3	Panel-mount	26.4
<b>Actuator types</b>	Rotary lever	Paddle lever	Pin plunger, lever	Pin plunger, hinge lever
<b>Terminal choices</b>	PCB	Connector	Connector	Solder
<b>Approved standards</b>	–	–	UL, CSA	UL, CSA, VDE, SEMKO

\* Values are for pin plunger type only

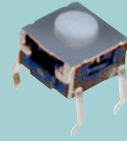
# Switches - Tactile

	 <b>B3F</b>	 <b>B3FS</b>	 <b>B32</b>
<b>Dimensions mm (in)</b>	Varies by type	Varies by type	Various
<b>Features</b>	<ul style="list-style-type: none"> <li>• Tactile 6 mm/12 mm Square Switch</li> <li>• Space saving switch with extended mechanical/electrical service life</li> <li>• Taped radial packaging available*</li> </ul>	<ul style="list-style-type: none"> <li>• Tape &amp; Reel Surface Mount Switches</li> <li>• Tactile switch that incorporates a snap action contact mechanism which ensures sharp switching operations</li> </ul>	<ul style="list-style-type: none"> <li>• Key tops for projected-plunger B3F and B3W tactile switches</li> <li>• Available in a wide range of colors and sizes</li> </ul>
<b>Contact Rating(s)</b> <b>Resistive load</b>	50mA @ 24 VDC	50mA @ 24 VDC	
<b>Contact form</b>	SPST-NO	SPST-NO	
<b>Action</b>	Momentary	Momentary	
<b>Ground terminal</b>	Models available with or without ground terminal	None	
<b>Keycap (optional)</b>	Refer to "ACCESSORIES" section of data sheet for Keycap information	None	
<b>Operating force (OF)*</b>	Refer to "OPERATING CHARACTERISTICS" section of data sheet	100gf (General purpose) 150gf (High force)	
<b>Service life (Mechanical/ Electrical)</b>	B3F-1 □□□□ /3 □□□□ 1,000,000 operations min. (High force: 300,000 operations min.) B3F-4 □□□□ 3,000,000 operations min. (High force: 300,000 operations min.) B3F-5 □□□□ 10,000,000 operations min. B3F-6 □□□□ 1,000,000 operations min. (High force: 300,000 operations min.)	1,000,000 operations min. (General purpose) 300,000 operations min. (High force)	
<b>Actuator type</b>	Plunger	Plunger	
<b>Terminal choices</b>	PCB	Surface mount	
<b>Cleaning</b>	Not possible	Not possible	N/A

IMPORTANT NOTE: None of the Tactile switch models listed within this catalog are water-washable.

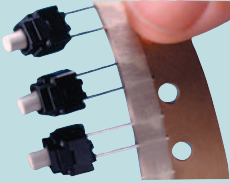





# Switches - Tactile

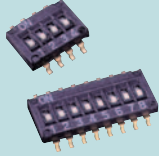
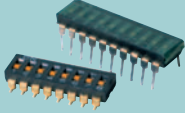
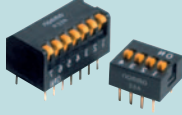
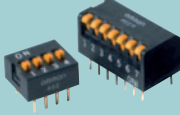
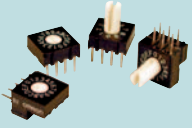


	B3M	B3W	B3S	B3SN
<b>Dimensions mm (in)</b>	7.3 H x 6.0 D x 6.0 W (0.29 x 0.24 x 0.24)	Varies by type	4.3 H x 6.0 D x 6.0 W (0.17 x 0.24 x 0.24)	3.1 H x 6.5 D x 7.0 W (0.12 x 0.26 x 0.28)
<b>Features</b>	<ul style="list-style-type: none"> <li>• High Profile Tactile Switch</li> <li>• Stroke length of 0.85mm</li> <li>• Light touch with a minimum overstroke of 0.25mm</li> </ul>	<ul style="list-style-type: none"> <li>• 6 mm/12 mm Square Tactile Switch</li> <li>• Sealed Construction allows immersion cleaning with Alcohol based solution</li> </ul>	<ul style="list-style-type: none"> <li>• Surface Mount Tactile Switch</li> <li>• Sealed Construction allows immersion cleaning with Alcohol based solution</li> </ul>	<ul style="list-style-type: none"> <li>• Surface Mount Tactile Switch</li> <li>• Low profile sealed construction for dust or humid environments</li> <li>• Available in bulk or tape packaging</li> </ul>
<b>Service life (Mechanical/Electrical)</b>	2,000,000 operations min.	B3W-1 □□□□ Standard force: 1,000,000 operations min. High-force: 300,000 operations min. B3W-4 □□□□ Standard force: 3,000,000 operations min. High force: 1,000,000 operations min.	500,000 operations min. (General purpose) 300,000 operations min. (High force)	50,000 operations min.
<b>Contact Rating(s) Resistive load</b>	50mA @ 12VDC	50mA @ 24VDC	50mA @ 24VDC	1 to 30mA @ 5 to 24VDC
<b>Contact form</b>	SPST-NO	SPST-NO	SPST-NO	SPST-NO
<b>Action</b>	Momentary	Momentary	Momentary	Momentary
<b>Ground terminal</b>	None	Models available with or without ground terminal	Models available with or without ground terminal	Models available with or without ground terminal
<b>Keycap (Optional)</b>	Built in	Refer to "ACCESSORIES" section of data sheet for Keycap information	None	None
<b>Operating force (OF)*</b>	70 ±20gf	Refer to "OPERATING" CHARACTERISTICS" section of datasheet	160gf (General purpose) 230gf (High force)	160 ±50g max.
<b>Actuator type</b>	Plunger	Plunger	Plunger	Plunger
<b>Terminal choices</b>	PCB	PCB	Surface mount	Surface mount
<b>Cleaning</b>	Not possible	Possible	Possible	Possible

# Switches - Tactile

				
	<b>B3WN</b>	<b>B3J</b>	<b>B3D</b>	<b>B3DA</b>
<b>Dimensions mm (in)</b>	13 H x 8.0 D x 8.0 W (0.51 x 0.31 x 0.31)	10.3 H x 18.0 D x 12.0 W (0.41 x 0.71 x 0.47)	4 mm or 5 mm domes	4 mm or 5 mm domes
<b>Features</b>	<ul style="list-style-type: none"> <li>• Radial Tape Sealed Tactile Switch</li> <li>• Compact 8 x 8 mm square size with double sealing construction</li> <li>• Assures water-tight/dust-tight protection</li> </ul>	<ul style="list-style-type: none"> <li>• Hinged Tactile Switch</li> <li>• Available with 1, 2 or no LED's</li> </ul>	<ul style="list-style-type: none"> <li>• Adhesive-backed individual dome</li> <li>• Superior dust-tight performance</li> <li>• No soldering required</li> </ul>	<ul style="list-style-type: none"> <li>• Adhesive-backed individual array</li> <li>• Superior dust-tight performance</li> <li>• No soldering required</li> </ul>
<b>Service life (Mechanical/ Electrical)</b>	100,000 operations min.	3,000,000 operations min.	500,000 (4 mm) / 1,000,000 (5 mm)	500,000 (4 mm) / 1,000,000 (5 mm)
<b>Contact Rating(s) Resistive load</b>	50mA @ 12VDC	1 to 50mA @ 5 to 24VDC	10mA @ 12VDC	–
<b>Contact form</b>	SPST-NO	SPST-NO	N/A	N/A
<b>Action</b>	Momentary	Momentary	Momentary	Momentary
<b>Ground terminal</b>	None	None	None	None
<b>Keycap (Optional)</b>	None	None	None	None
<b>Operating force (OF)*</b>	200 ±70gf	130 ±50gf	170g	160g
<b>Actuator type</b>	Plunger	Hinge lever	Dome	Dome
<b>Terminal choices</b>	PCB	PCB	Surface mount	Surface mount
<b>Cleaning</b>	Possible	Not possible	Not possible	Not possible

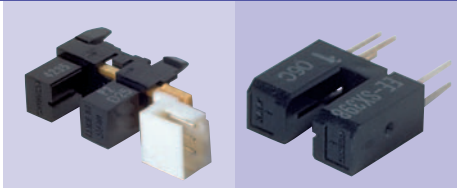
# Switches - DIP

					<b>NEW!</b> 
	<b>A6H</b>	<b>A6T/A6S</b>	<b>A6D/A6DR</b>	<b>A6E/A6ER</b>	<b>A6R/A6RV</b>
<b>Dimensions mm (in)</b>	Varies by type	Varies by type	Varies by type	Varies by type	Varies by type
<b>Features</b>	<ul style="list-style-type: none"> <li>• Half-pitch Surface Mount DIP Switch</li> <li>• Low profile of 1.55mm</li> <li>• Seal tape models available</li> </ul>	<ul style="list-style-type: none"> <li>• Straight PCB/ Surface Mount DIP Switch</li> <li>• Flat actuated types with or without seal tape, &amp; tape seal versions in embossed tape packaging</li> <li>• Raised actuator types also available</li> </ul>	<ul style="list-style-type: none"> <li>• Dustproof construction</li> <li>• Top, raised &amp; side actuators</li> <li>• Smooth switching action</li> </ul>	<ul style="list-style-type: none"> <li>• Available in a variety of model types: A6E: Flat/Raised actuator</li> <li>A6ER: Side actuator</li> </ul>	<ul style="list-style-type: none"> <li>• Economical rotary DIP switch</li> <li>• Top, side &amp; extended shaft models</li> <li>• O-ring sealed construction to prevent ingress of dust and dirt</li> </ul>
<b>Contact Rating(s)</b>					
<b>Resistive load</b>	25mA @ 24VDC	25mA @ 24VDC	30mA @ 30VDC	25mA @ 24VDC	25mA @ 24VDC
<b>Switching positions</b>	–	–	–	–	10-BCD 16-Hexadecimal
<b>Number of poles</b>	4, 8	A6T: 1, 2, 4, 6, 8, 10 A6S: 2, 3, 4, 5, 6, 7, 8, 9, 10 A6S (embossed tape): 4, 6, 8	4, 6, 8, 10	2, 3, 4, 5, 6, 7, 8, 9, 10	–
<b>Operating force (OF)*</b>	30gf	30gf	500gf	30gf	200g-cm max.
<b>Mechanical service life,</b>	1,000 operations min.	1,000 operations min.	5,000 operations min.	1,000 operations min.	5,000 detent operations min.
<b>Electrical service life</b>	1,000 operations min.	1,000 operations min.	2,000 operations min.	1,000 operations min.	5,000 detent operations min.
<b>Actuator types</b>	Top	Top, raised	Top, raised, side	Top, raised, side	Rotary
<b>Terminal choices</b>	Surface mount	PCB terminal; Surface mount	PCB terminal	PCB terminal	PCB terminal
<b>Washable</b>	Yes (seal tape only)	Yes (seal tape only)	Yes	No	No



# Photomicrosensors

## Photo IC - Slotted

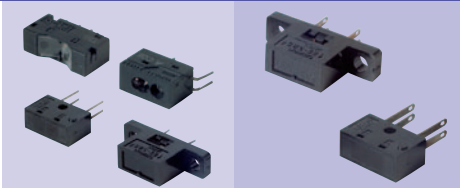


### Non-Amplified Non-Amplified

Sub-category	Slotted Photo IC with connector	Slotted Photo IC
Models	EE-SX4235A-P2	EE-SX398, EE-SX3070, EE-SX3081, EE-SX3088, EE-SX498, EE-SX4070, EE-SX4081, EE-SX4088
Connection type	Connector*	PCB mount
Features	<ul style="list-style-type: none"> <li>• Unique snap-in mounting mechanism eliminates screws &amp; nuts</li> <li>• Compatible with 1.0, 1.2, &amp; 1.6 mm PCBs</li> </ul>	<ul style="list-style-type: none"> <li>• Built-in Schmitt trigger circuit</li> <li>• Directly compatible with TTL and CMOS</li> </ul>
Slot width mm (in)	5 (0.2)	3 to 8 (0.12 to 0.315)
Output logic	Light-ON	Light-ON or Dark-ON
Max. forward current mA	–	50mA
Supply voltage (VDC)	7VDC	4.5 to 16VDC
Operating temperature	-25° to +75°C	-40° to +75°C
Output low voltage (V)	0.35V max.	0.4V max.
Output high voltage (V)	(Vcc x 0.9) Vmin.	15V min.
Response frequency (Hz)	3,000Hz	3,000Hz
Output permissible dissipation (mW)	250mW	250mW
Forward voltage (V)	–	1.2V – typ.
Hysteresis	–	15%
Rising time (low to high)	–	3µS – typ.
Falling time (high to low)	–	20µS – typ.
Current consumption (mA)	30mA max.	10mA max.

\*Applicable Mating Connector  
AMP 175778-3  
AMP 173977-3

## Phototransistor - Reflective



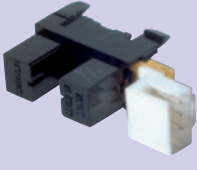
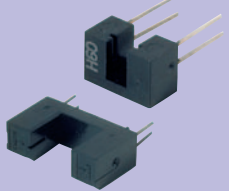

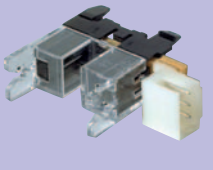
### Non-Amplified Non-Amplified

Sub-category	Reflective PCB mount phototransistor	Reflective solder terminal phototransistor
Model numbers	EE-SY169, EE-SY169A, EE-SY169B, EE-SB5-B, EE-SF5-B	EE-SB5, EE-SF5
Connection type	PCB mount	Solder terminals
Features	<ul style="list-style-type: none"> <li>• Ideal for office automation and computer peripheral equipment</li> <li>• Infrared LED &amp; phototransistor assure long life</li> </ul>	<ul style="list-style-type: none"> <li>• Sensor housing reduces external light's influence</li> <li>• High resolution sensing</li> </ul>
Sensing distance mm (in)	5 (0.2)	5 (0.2)
Max. forward current (mA)	50mA (40 mA: EE-SY169, EE-SY169B)	50mA
Supply voltage (VDC)	5 to 30V	5 to 30V
Light current (mA)	EE-SY169(A)(B): 160µA to 2,000µA; EE-SB5/EE-SF5-B: 200µA to 2,000µA	200µA to 2,000µA
Response frequency (Hz)	15kHz	15kHz
Ambient operating temperature (°C)	0° to +70°C	-25° to +85°C

NOTE: The above specifications do not apply to all models listed.  
For specific model information and additional product variations,  
visit [www.components.omron.com](http://www.components.omron.com) or contact your local Omron representative.

# Photomicrosensors

## Phototransistors - Slotted

				
Sub-category	Non-Amplified	Non-Amplified	Non-Amplified	Non-Amplified
Sub-category	Slotted phototransistor with connector	Miniature PCB mount transmissive	Slotted surface mount phototransistor output	Slotted actuator adaptable phototransistor output
Models	EE-SX1235A-P2	EE-SX198, EE-SX1018, EE-SX1035, EE-SX1041, EE-SX1042, EE-SX1046, EE-SX1055, EE-SX1070, EE-SX1071, EE-SX1081, EE-SX1088, EE-SX1096, EE-SX1103, EE-SX1105, EE-SX1106	EE-SX1107, EE-SX1108, EE-SX1109, EE-SX1131 (dual channel)	EE-SA107-P2
Connection type	Connector*	PCB mount	Surface mount	Connector*
Features	<ul style="list-style-type: none"> <li>Electrical connections using AMP connector</li> <li>Compact and high-resolution</li> </ul>	<ul style="list-style-type: none"> <li>Infrared LED &amp; phototransistor for long life</li> <li>Narrow aperture slit for high resolution sensing</li> <li>Compact size</li> </ul>	<ul style="list-style-type: none"> <li>Ultra-compact</li> <li>High-resolution sensing with phototransistor output</li> <li>Ideal for restricted space applications</li> </ul>	<ul style="list-style-type: none"> <li>High resolution sensing</li> <li>Non-contact, noiseless sensing</li> </ul>
Slot width mm (in)	5 (0.2)	2 to 8 (0.08 to 0.32)	1 to 3 (0.04 to 0.12)	3.6 (0.14)
Max. forward current (mA)	50mA	50mA	25mA	50mA
Max. collector dissipation (mW)	100mW	100mW	75mW	100mW
Operating temperature (°C)	-25° to +95°C	-25° to +85°C	-30° to +85°C	-25° to +85°C
Forward voltage (V)	1.2V typ.	1.2 to 1.3V	1.1V typ.	1.2V typ.
Light current (mA)	0.6mA to 14mA max.	0.03 to 14mA max.	0.05 to 0.50mA	0.5 to 14mA
Collector-emitter saturated voltage (V)	0.4V max.	0.4V max.	0.1V typ.	0.4V max.
Rising time (low to high)	8µS typ.	4µS typ. (10µS typ.: EE-SX1103, EE-SX1105, EE-SX1106)	10µS typ.	8µS typ.
Falling time (high to low)	8µS typ.	4 µS typ. (10µS typ.: EE-SX1103, EE-SX1105, EE-SX1106)	10µS typ.	8µS typ.
	*Applicable Mating Connector AMP 175778-3 AMP 173977-3			*Applicable Mating Connector AMP 175778-3 AMP 173977-3

NOTE: The above specifications do not apply to all models listed.  
For specific model information and additional product variations,  
visit [www.components.omron.com](http://www.components.omron.com) or contact your local Omron representative.

# Micro Sensors - MEMS

## Mass Air Flow 1~5L



D6F																	
<b>Dimensions mm (in)</b>	15H x 20D x 66W (0.60 x 0.79 x 2.60)																
<b>Features</b>	Detects – <ul style="list-style-type: none"> <li>• Breath rate in respiratory equipment</li> <li>• Natural gas flow rate</li> <li>• Gas in fuel cells</li> <li>• Flow in ventilation systems</li> </ul>																
<b>Applicable gases</b>	Air, Natural gas, LP gas, O <sub>2</sub> , and N <sub>2</sub> O *																
<b>Supply voltage</b>	12 to 24VDC																
<b>Operating temp. range</b>	-10° to +60°C																
<b>Ordering information</b>	<table border="1"> <thead> <tr> <th>Case</th> <th>Gas</th> <th>Flow range</th> <th>Part number</th> </tr> </thead> <tbody> <tr> <td>PPS</td> <td>Air</td> <td>0~1L/min</td> <td>D6F-101A-110</td> </tr> <tr> <td>PPS</td> <td>Air</td> <td>0~2L/min</td> <td>D6F-102A-110</td> </tr> <tr> <td>AL</td> <td>LNG</td> <td>0~5L/min</td> <td>D6F-05N2-000</td> </tr> </tbody> </table>	Case	Gas	Flow range	Part number	PPS	Air	0~1L/min	D6F-101A-110	PPS	Air	0~2L/min	D6F-102A-110	AL	LNG	0~5L/min	D6F-05N2-000
Case	Gas	Flow range	Part number														
PPS	Air	0~1L/min	D6F-101A-110														
PPS	Air	0~2L/min	D6F-102A-110														
AL	LNG	0~5L/min	D6F-05N2-000														

\*Contact Omron regarding other gases.

## Mass Air Flow 10~50L



D6F-10/20/50									
<b>Dimensions mm (in)</b>	30H x 30D x 78L (1.18 x 1.18 x 3.07)								
<b>Features</b>	<ul style="list-style-type: none"> <li>• Precision unidirectional mass airflow up to 50LPM</li> <li>• Stable output</li> <li>• Horizontal mounting with NBR 'O' ring</li> <li>• Low power consumption</li> </ul>								
<b>Applicable gases</b>	Air, Natural gas, LP gas, O <sub>2</sub> , & N <sub>2</sub> O*								
<b>Supply voltage</b>	12 to 24VDC								
<b>Operating temp. range</b>	-10° to +60°C								
<b>Ordering information</b>	<table border="1"> <thead> <tr> <th>Flow range</th> <th>Part number</th> </tr> </thead> <tbody> <tr> <td>0-10LPM</td> <td>D6F10A600</td> </tr> <tr> <td>0-20LPM</td> <td>D6F20A600</td> </tr> <tr> <td>0-50LPM</td> <td>D6F50A600</td> </tr> </tbody> </table>	Flow range	Part number	0-10LPM	D6F10A600	0-20LPM	D6F20A600	0-50LPM	D6F50A600
Flow range	Part number								
0-10LPM	D6F10A600								
0-20LPM	D6F20A600								
0-50LPM	D6F50A600								

\*Contact Omron regarding other gases.

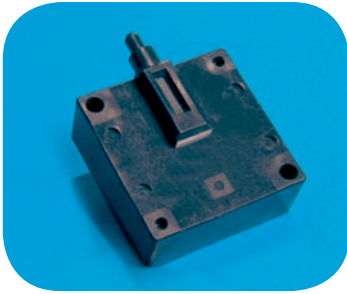
## Air Velocity Sensor



	D6F-W	D6F-V										
<b>Dimensions mm (in)</b>	9H x 20Dx 39L (0.35 x 0.79 x 1.53)	8H x 13D x 24L (0.31 x 0.51 x 0.94)										
<b>Features</b>	<ul style="list-style-type: none"> <li>• Clogged filter detection</li> <li>• Compact size</li> <li>• Integral passive Dust Segregation System (DSS)</li> <li>• Fast fit for easy installation</li> </ul>	<ul style="list-style-type: none"> <li>• Value engineered version of D6F-W</li> <li>• Smaller package</li> <li>• Lower Supply Voltage</li> <li>• Built for OEM designs</li> <li>• Internal passive Dust Segregation System (DSS)</li> </ul>										
<b>Applicable gases</b>	Air*	Air*										
<b>Supply voltage</b>	12 - 24VDC	3.3VDC										
<b>Output voltage</b>	5VDC	0 to 2VDC										
<b>Operating temp. range</b>	-10° to +60°C	-10° to +60°C										
<b>Ordering information</b>	<table border="1"> <thead> <tr> <th>Flow range</th> <th>Part number</th> </tr> </thead> <tbody> <tr> <td>0~1 m/sec flow range</td> <td>D6F-W01A</td> </tr> <tr> <td>0~4 m/sec flow range</td> <td>D6F-W04A</td> </tr> </tbody> </table>	Flow range	Part number	0~1 m/sec flow range	D6F-W01A	0~4 m/sec flow range	D6F-W04A	<table border="1"> <thead> <tr> <th>Flow range</th> <th>Part number</th> </tr> </thead> <tbody> <tr> <td>0~3 m/sec flow range</td> <td>D6F-V03A1</td> </tr> </tbody> </table>	Flow range	Part number	0~3 m/sec flow range	D6F-V03A1
Flow range	Part number											
0~1 m/sec flow range	D6F-W01A											
0~4 m/sec flow range	D6F-W04A											
Flow range	Part number											
0~3 m/sec flow range	D6F-V03A1											

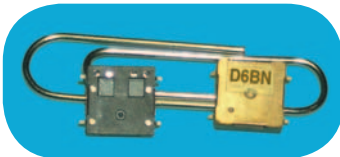
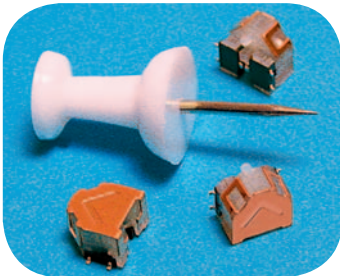
\*Contact Omron regarding other gases.

## Pressure / Blood Pressure



	D8M-R	Blood Pressure 2SMCP-10
<b>Dimensions mm (in)</b>	30 H x 25.8 D x 30 W (1.18 x 1.02 x 1.18)	6.2 x 4.8 x 8.3 (0.27 x 0.21 x 0.37)
<b>Features</b>	<ul style="list-style-type: none"> <li>• Solid state MEMS pressure sensor with frequency output</li> </ul>	<ul style="list-style-type: none"> <li>• For applications using a minimum of 100,000 pieces per year only</li> <li>• For pulse rate detection</li> <li>• Electrostatic capacity style suitable for microcomputer input</li> </ul>
<b>Applicable gases</b>	Air, please inquire about other gases.	Air
<b>Pressure range</b>	0 - 0.78" of H <sub>2</sub> O	0-280mm Hg (600mm Hg max.)
<b>Output</b>	80 - 300kHz (1kHz/9.81 Pa)	-
<b>Supply voltage</b>	4.2 - 5.5VDC	5VDC
<b>Current consumption</b>	10 mA max.	-
<b>Operating temp. range</b>	-20° to +70°C	0° to +50°C

## Tilt



	D6B	D6BN
<b>Dimensions mm (in)</b>	5.50 H x 3.75 D x 5.50 W (0.22 x 0.15 x 0.22)	2 H x 7 D x 7 W (0.08 X 0.28 x 0.28)
<b>Features</b>	<ul style="list-style-type: none"> <li>• Utilizes Hall Effect technology</li> <li>• For space-constrained applications</li> <li>• Surface mount</li> <li>• No EMC bounce</li> </ul>	<ul style="list-style-type: none"> <li>• Utilizes Hall Effect technology</li> <li>• Low profile less than 1mm</li> <li>• Surface mount</li> <li>• No EMC bounce</li> </ul>
<b>Operating angle</b>	45~75° (output from high to low)	40~80° (left & right)
<b>Return angle</b>	50~20° (output from low to high)	50~10° (left & right)
<b>Operating voltage (Vdd)</b>	2.7~3.3VDC	2.4 ~ 3.6VDC
<b>Output voltage</b>		
<b>Low</b>	0.5VDC max.	0.4VDC max.
<b>High</b>	Vdd - 0.5VDC min.	Vdd - 0.4VDC max.
<b>Current consumption</b>	20µA max.; 10µA typ (Vcc = 3VDC)	1mA max., 1µ standby
<b>Operating temp. range</b>	-10° to +60°C	-10° to +60°C
<b>Ordering information</b>	D6B-2	D6BN-1

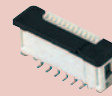
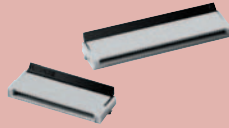
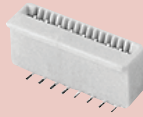
## Shock/ Vibration/Tilt



	D7E
<b>Dimensions mm (in)</b>	23.1 H x 23.6 D x 36.4 W (0.91 x 0.93 x 1.43)
<b>Features</b>	<ul style="list-style-type: none"> <li>• Compact tilt sensor</li> <li>• Responds to gradual tilting of 1degree/sec</li> <li>• Self-resetting</li> <li>• Quick-connect terminals</li> <li>• PCB version available (D7A)</li> </ul>
<b>Operating angle</b>	50~80°
<b>Return angle (reset)</b>	25° or more
<b>Contact capacity</b>	0.1mA @ 5VDC to 100mA at 30VDC resistive load
<b>Contact form</b>	SPST-NC
<b>Operating temp. range</b>	-25° to +60°C
<b>Service life</b>	5000 operations min.

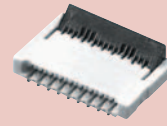
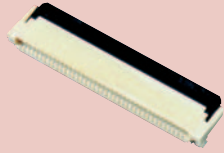


# Connectors - FPC (Flexible Printed Circuit)




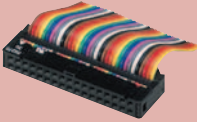


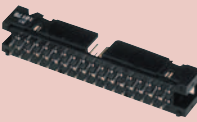
	XF2G	XF2U	XF2J	XF2L
<b>Pitch mm</b>	0.3mm	0.5mm	0.5mm	0.5mm
<b>Insertion type</b>	non-ZIF	ZIF	ZIF	ZIF
<b>Cable lock type</b>	Rear rotary lock	Rear rotary lock	Slide Lock	Slide Lock
<b>PCB mounting</b>	SMT	SMT	SMT	SMT
<b>Cable insertion</b>	Horizontal	Horizontal	Vertical	Horizontal
<b>Contact type(s)</b>	Top	Double sided	Vertical	Top & Bottom
<b>Dimensions mm (in)</b>	9.1W x 3.8D x 0.9H (0.4 x 0.15 x 0.04) for 29 circuits	12.6W x 3.5D x 0.9H (0.5 x 0.14 x 0.04) for 24 circuits	19.5 W x 3.4 D x 4.15 H (0.77 x 0.13 x 0.16) for 30 circuits	18.9 W x 3.5 D x 1.2 H (0.74 x 0.14 x 0.05) for 30 circuits
<b>Available circuits</b>	17, 21, 25, 29, 35, 39, & 51	4, 11, 14, 20, 24, 27, 30, 32, & 40	6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30	4, 5, 6, 7, 8, 10, 12, 13, 15, 18, 19, 20, 21, 22, 24, 26, 30
<b>Packaging</b>	Tape & reel	Tape & reel	Tape & reel	Tape & reel
<b>Features</b>	<ul style="list-style-type: none"> <li>• Low 4.15mm on-board profile</li> <li>• Applicable FPC thickness of t=0.3mm</li> <li>• Top-entry</li> <li>• Upper contacts</li> <li>• Wide molding wall on bottom allows greater board design freedom</li> </ul>	<ul style="list-style-type: none"> <li>• Low on-board profile of 0.9mm</li> <li>• Ultra-slim with 3.5mm depth</li> <li>• Wide molding wall on bottom allows greater board design freedom</li> </ul>	<ul style="list-style-type: none"> <li>• Low profile, top entry</li> <li>• 0.3mm FPC thickness</li> </ul>	<ul style="list-style-type: none"> <li>• Low profile, small size</li> <li>• 0.3mm FPC thickness</li> </ul>
<b>Specifications</b>				
<b>Rated current</b>	0.2A	0.5A	0.5A	0.5A
<b>Rated voltage</b>	50VDC	50VDC	50VDC	50VDC
<b>Contact resistance (@ 20mV, 100mA)</b>	80mΩ max.	60mΩ max.	30mΩ max.	30mΩ max.
<b>Insulation resistance (min.)</b>	100MΩ @ 250VAC	100MΩ @ 250VAC	100MΩ @ 250VDC	100MΩ @ 250VDC
<b>Withstand voltage</b>	250VAC 1 min. (leakage current: 1mA max.)	250VAC 1 min. (leakage current: 1mA max.)	250VAC 1 min. (leakage current: 1mA max.)	250VAC 1 min. (leakage current: 1mA max.)
<b>Circuit insertion or service life</b>	10 times	20 times	20 times	20 times
<b>Ambient operating temperature</b>	-30°C to + 85°C	-30°C to + 85°C	-30°C to + 85°C	-30°C to + 85°C

# Connectors - FPC (Flexible Printed Circuit)



	XF2M	XF2R	XF2B
<b>Pitch mm</b>	0.5mm	0.5mm	0.3mm
<b>Insertion type</b>	ZIF	ZIF	ZIF
<b>Cable lock type</b>	Rear rotary lock	Rear rotary lock	Rear rotary lock
<b>PCB mounting</b>	SMT	SMT	SMT
<b>Cable insertion</b>	Horizontal	Horizontal	Horizontal
<b>Contact type(s)</b>	Double Sided	Double Sided	Double Sided
<b>Dimensions mm (in)</b>	18.5 W x 4.9 D x 2.0 H (0.73 x 0.19 x 0.08) for 30 circuits	19 W x 4.95 D x 0.9 H (0.75 x 0.18 x 0.04) for 34 circuits	8.8 W x 5.2 D x 1.2 H (0.35 x 0.2 x 0.05) for 23 circuits
<b>Available circuits</b>	10, 12, 14, 18, 20, 22, 24, 26, 30, 32, 33, 34, 35, 36, 38, 40, 42, 45, 50	6, 9, 18, 24, 34, 40	17, 21, 23, 25, 27, 31, 33, 35, 39, 41, 45, & 51
<b>Packaging</b>	Tape & reel	Tape & reel	Tape & reel
<b>Features</b>	<ul style="list-style-type: none"> <li>• Low profile (2mm H)</li> <li>• Short body</li> <li>• 0.3mm FPC thickness</li> </ul>	<ul style="list-style-type: none"> <li>• Low profile (0.9mm H)</li> <li>• 0.12mm FPC thickness</li> </ul>	<ul style="list-style-type: none"> <li>• Low profile (1.2mm H)</li> <li>• Ultra-fine pitch</li> <li>• 0.2mm FPC thickness</li> </ul>
<b>Specifications</b>			
<b>Rated current</b>	0.2A	0.3A	0.2A
<b>Rated voltage</b>	50VDC	50VDC	50VDC
<b>Contact resistance (@ 20mV, 100mA)</b>	50mΩ max.	40mΩ max.	50mΩ max.
<b>Insulation resistance (min.)</b>	100MΩ @ 250VDC	100MΩ @ 250VDC	100MΩ @ 250VDC
<b>Withstand voltage</b>	250VAC 1min. (leakage current: 1mA max.)	250 AC 1min. (leakage current: 1mA max.)	250VAC 1min. (leakage current: 1mA max.)
<b>Circuit insertion or service life</b>	20 times	20 times	20 times
<b>Ambient operating temperature</b>	-30°C to +85°C	-30°C to +85°C	-30°C to +85°C

# Connectors FFC (Flat Flexible Cable)

	<b>NEW!</b> 	<b>NEW!</b> 	<b>NEW!</b> 	<b>NEW!</b> 	<b>NEW!</b> 
	<b>XG4U</b>	<b>XG4M</b>	<b>XG4A</b>	<b>XG4E</b>	<b>XG4C</b>
<b>Description</b>	Strain relief	MIL-type socket	MIL-type socket	IDC plug	Box type plug
<b>Pitch mm</b>	2.54	2.54	2.54	2.54	2.54
<b>Socket / Plug</b>	Socket	Socket	Plug	Plug	Plug
<b>Plating on contacts</b>	Au plating	Au plating	Au plating	Au plating	Au plating
<b>PCB mounting</b>	Thru-hole	Thru-hole	Thru-hole	Thru-hole	Thru-hole
<b>Cable insertion</b>	Vertical or horizontal	Vertical or horizontal	Vertical or horizontal	Vertical or horizontal	Vertical or horizontal
<b>Contact type(s)</b>	IDC flat ribbon cable	IDC flat ribbon cable	IDC flat ribbon cable	IDC flat ribbon cable	IDC flat ribbon cable
<b>Dimensions mm (in)</b>	Please consult product specifications for more information	Please consult product specifications for more information	Please consult product specifications for more information	Please consult product specifications for more information	Please consult product specifications for more information
<b>Available circuits</b>	10, 14, 16, 20, 26, 30, 34, 40, 50, 60, 64	10, 14, 16, 20, 26, 30, 34, 40, 50, 60, 64	10, 14, 16, 20, 26, 30, 34, 40, 50, 60, 64	10, 14, 16, 20, 26, 30, 34, 40, 50, 60, 64	10, 14, 16, 20, 26, 30, 34, 40, 50, 60, 64
<b>Packaging</b>	Bag	Bag	Bag	Bag	Bag
<b>Features</b>	<ul style="list-style-type: none"> <li>• Can connect &amp; disconnect with one hand</li> <li>• Save board space</li> <li>• Reduced mounting height</li> <li>• High-reliability, low cost</li> </ul>	<ul style="list-style-type: none"> <li>• Can connect &amp; disconnect with one hand</li> <li>• Save board space</li> <li>• Reduced mounting height</li> <li>• High-reliability, low cost</li> </ul>	<ul style="list-style-type: none"> <li>• Can connect &amp; disconnect with one hand</li> <li>• Save board space</li> <li>• Reduced mounting height</li> <li>• High-reliability, low cost</li> <li>• Available in short lock, long lock and dual port models</li> </ul>	<ul style="list-style-type: none"> <li>• Solderless plug</li> <li>• Can connect &amp; disconnect with one hand</li> <li>• Save board space</li> <li>• Reduced mounting height</li> <li>• High-reliability, low cost</li> </ul>	<ul style="list-style-type: none"> <li>• Available in straight DIP &amp; right-angle DIP terminals</li> <li>• Can connect &amp; disconnect with one hand</li> <li>• Save board space</li> <li>• Reduced mounting height</li> <li>• High-reliability, low cost</li> </ul>
<b>Specifications</b>					
<b>Rated current</b>	1A	1A	1A	1A	1A
<b>Rated voltage</b>	250VAC	250VAC	250VAC	250VAC	250VAC
<b>Contact resistance</b>	20mΩ max.	20mΩ max.	20mΩ max.	20mΩ max.	20mΩ max.
<b>Insulation resistance</b>	100MΩ @ 500VDC	100MΩ @ 500VDC	100MΩ @ 500VDC	100MΩ @ 500VDC	100MΩ @ 500VDC
<b>Withstand voltage (leakage current: 1mA max.)</b>	500VAC for 1 minute	500VAC for 1 minute	500VAC for 1 minute	500VAC for 1 minute	500VAC for 1 minute
<b>Circuit insertion or service life</b>	50 times	50 times	50 times	50 times	50 times
<b>Ambient operating temperature</b>	-55°C to +105°C	-55°C to +105°C	-55°C to +105°C	-55°C to +105°C	-55°C to +105°C



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- Systems, machines, and equipment that could present a risk to life or property.

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