

# Electronic Components



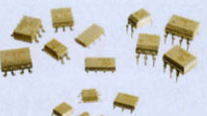


## Master Selection Guide



Relays  
Switches  
Photomicrosensors  
Micro Sensors  
Connectors



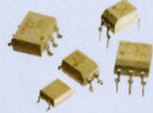

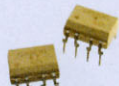


# Relays - MOS FET

General Attributes	    				
	G3VM-200	G3VM-350	G3VM-400	G3VM High Voltage & Dielectric	G3VM Current Limiting
Dimensions mm (in)	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
Features	<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 Systems, Measurement 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>
Load voltage	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)
Maximum Ratings and Electrical Characteristics					
Continuous load current	0-50mA & 0-200mA	0-90mA, 0-100mA, 0-110mA, 0-120mA, 0-150mA	0-120mA	0-100mA	0-120mA
ON resistance (typical)	5Ω & 30Ω	15Ω, 27Ω, 30Ω, 25Ω, 40Ω	17Ω & 18Ω	25Ω	22Ω
Output capacitance	—	—	—	—	—
Available switching configurations	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
Leakage current	10nA (max.) & 1.0μA (max.)	1.0μA (max.)	1.0μA (max.)	1.0μA (max.)	1.0μA (max.)
turn-ON time (typical)	40ms & 600ms	0.1ms, 0.25ms, 0.3ms, 0.5ms, 1.0ms	0.3ms & 0.5ms	0.2ms	0.3ms & 0.5ms
turn-OFF time (typical)	100ms	0.1ms, 0.15ms, 0.5ms, 1.0ms, 3.0ms	0.1ms & 0.5ms	0.2ms	0.3ms & 0.5ms
Dielectric strength (AC for 1 minute between input and output)	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.)
Available packaging & terminal choices	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
Accessories	Tape & reel	Tape & reel	Tape & reel	Tape & reel	Tape & reel
Approved standards	UL 1577	UL 1577	UL 1577	UL 1577	UL 1577








# Relays - MOS FET

					
General Attributes	G3VM GR	G3VM LR	G3VM-60	G3VM-80	G3VM-22
Dimensions mm (in)	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
Features	<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>
Load voltage	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)
Maximum Ratings and Electrical Characteristics					
Continuous load current	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
ON resistance (typical)	1Ω, 5Ω, 10Ω	0.8Ω, 1Ω, 5Ω, 10Ω	0.12Ω (max.) 7Ω (max.) 1Ω (typ.)	0.11Ω & 1.0Ω	2Ω
Output capacitance	1.0pF (typ.) 5.0pF (typ.) 10pF (typ.)	0.8pF (typ.) 1.0pF (typ.) 5.0pF (typ.) 10pF (typ.)	—	—	—
Available switching configurations	1 Form A	1 Form A	1 Form A	1 Form A	Dual 1 Form A
Leakage current	1.0nA (max.)	1.0nA (max.)	1.0nA (max.) & 1.0μA (max.)	0.2nA (typ.) & 1.2nA (typ.)	1.0μA (max.)
turn-ON time (typical)	0.3ms	0.3ms	0.8ms 1.0ms 1.4ms	0.3ms 2.0ms	0.5ms
turn-OFF time (typical)	0.3ms	0.3ms	0.1ms 0.2ms 0.6ms	0.3ms 0.7ms	0.5ms
Dielectric strength (AC for 1 minute between input and output)	1,500Vrms (min.)	1,500Vrms (min.)	1,500Vrms (min.) 2,500Vrms (min.)	1,500Vrms (min.)	2,500Vrms (min.)
Available packaging & terminal choices	SOP 4 PIN	SOP 4 PIN	SOP, PCB, SMT 4 PIN, 6 PIN	SOP 4 PIN, 6 PIN	PCB & SMT 8 PIN
Accessories	Tape & reel	Tape & reel	Tape & reel	Tape & reel	Tape & reel
Approved standards	UL 1577	UL 1577	UL 1577	UL 1577	UL 1577




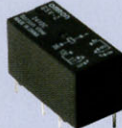



# Relays - Low Signal

					
General Attributes	G6J-Y	G6K	G6H	G6S	G6A
Dimensions mm (in)	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)
Switching	1A max.	1A max.	1A max.	2A max.	2A max.
Features	<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>
Contact Information					
Contact form	2 Form C	2 Form C	2 Form C	2 Form C	2 Form C, 4 Form C
Contact type	Bifurcated crossbar	Bifurcated crossbar	Bifurcated crossbar	Bifurcated crossbar	Bifurcated crossbar
Contact material	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
Rated load (under resistive load)	0.3A @ 125VAC, 1A @ 30VDC	0.3A @ 125VAC, 1A @ 30VDC	0.5A @ 125VAC, 1A @ 30VDC	0.5 @ 125VAC, 2A @ 30VDC 1A @ 30VDC (G5V-2-H1)	0.3A to 0.5A @ 125VAC, 1A to 2A @ 30VDC
Max. operating voltage	125VAC, 110VDC	125VAC, 60VDC	125VAC, 110VDC	250VAC, 220VDC	250VAC, 220VDC
Max. switching capacity under resistive load	37.5VA, 30W (NO)	37.5VA, 30W	62.5VA, 33W	62.5VA, 60W	125VA, 60W
Min. electrical service life (operations at rated load)	100,000	100,000	100,000	100,000	500,000
Min. permissible load (for reference only)	10µA @ 10mVDC	10µA @ 10mVDC	10µA @ 10mVDC	10µA @ 10mVDC	10µA @ 10mVDC
Coil Information					
Coil voltage	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
Power consumption	140mW (230mW for DC24)	100mW (standard and latching)	140mW (standard)	140mW (standard) 140mW, 200mW (latching)	200mW (DPDT standard) 180mW (DPDT latching) 360mW (4PDT standard)
Characteristics					
Dielectric strength between coil & contacts (50/60 Hz for 1 minute)	1,500VAC	1,500VAC	1,000VAC	2,000VAC	1,000VAC
Surge withstand	1.5kV (10 x 160µs)	2.5kV (2 x 10µs)	1.5kV (10 x 160µs)	2.5kV (2 x 10µs)	1.5kV (10 x 160µs)
Terminal choices	SMT Gullwing, PCB	SMT Gullwing, SMT Inside-L, PCB	PCB (G6H), SMT Gullwing (G6H-2F)	SMT Gullwing, SMT Inside-L, PCB	PCB
Packaging	Tape & reel available	Tape & reel available	Tape & reel available	Tape & reel available	—
Approved standards	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

					
General Attributes	G5A	G5V-1	G6L	G5V-2	G6E
Dimensions mm (in)	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)
Switching	1A max.	1A max.	1A max.	2A max.	3A max.
Features	<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>
Contact Information					
Contact form	2 Form C	1 Form C	1 Form A	2 Form C	1 Form C
Contact type	Bifurcated crossbar	Single crossbar	Single crossbar	Bifurcated crossbar	Bifurcated crossbar
Contact material	Ag with Au clad	Ag with Au clad	Ag with Au clad	Ag with Au clad	Ag with Au clad
Rated load (under resistive load)	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
Max. operating voltage	125VAC, 125VDC	125VAC, 60VDC	125VAC, 60VDC	125VAC, 125VDC	250VAC, 220VDC
Max. switching capacity under resistive load	37.5VA, 33W	62.5VA, 30W	37.5VA, 24W	62.5VA, 60W	50VA, 60W
Min. electrical service life (operations at rated load)	100,000	100,000	100,000	300,000	100,000
Min. permissible load (for reference only)	1mA @ 5VDC	1mA @ 5VDC	1mA @ 5VDC	10µA @ 10mVDC	10µA @ 10mVDC
Coil Information					
Coil voltage	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
Power consumption	200mW (standard & latching)	150mW	180mW (standard)	500mW (standard) 360mW (high-sensitivity) 150mW (ultra-sensitive)	200mW (standard) 400mW (standard)
Characteristics					
Dielectric strength between coil & contacts (50/60 Hz for 1 minute)	1,000VAC	1,000VAC	1,000VAC	1,000VAC	1,500VAC
Surge withstand	—	1.5kV (10 x 160µs)	—	1.5kV (10 x 160µs)	2.5kV (2 x 10µs)
Terminal choices	PCB	PCB	PCB, SMT Gullwing	PCB	PCB
Packaging	—	—	Tape & reel available	—	—
Approved standards	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

**NEW!**

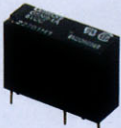
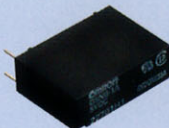




## General Attributes

	G6W	G6Y	G6Z	G6K-RF	G9YA
<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 <math>\Omega</math> &amp; 50 <math>\Omega</math> 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

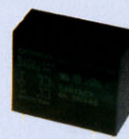


# Relays - Power PCB

**NEW!**



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## General Attributes

### G6DS

### G6M

### G2RG

### G6B

#### Dimensions mm (in)

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)

#### Switching

5A

5A

8A

8A/5A

#### Features

- Slim 5mm for max. density mounting
- High sensitive coil option reduces power consumption
- Meets EN reinforced insulation requirement for control equipment
- Fully sealed
- Resistant to mechanical shock

- Slim 5mm width, & reduced PCB area (103mm<sup>2</sup>) ideal for high-density mounting
- Highly efficient magnetic circuit for high sensitivity
- UL Class I, Division II approved for hazardous locations

- 1.5mm contact gap x 2 poles=3mm total gap meeting UPS standards
- Dimensions & mounting holes are same as G2R relay series
- Sealed construction, standard
- Meets EN tracking resistance CTI > 250
- UL508/CSA 22.2

- Subminiature and low power
- Sealed construction standard
- Single & dual coil latching available

## Contact Information

#### Contact form

1 Form A

1 Form A

2 Form A

1 Form A, 2 Form A, 2 Form B  
1 Form A + 1 Form B

#### Contact type(s)

Single button

Single button

Single button

Single button

#### Contact material(s)

AgNi

Ag-Alloy

AgSnO<sub>2</sub>

AgSnO<sub>2</sub>

#### Electrical service life (@ 1800 ops./hr.) (resistive load)

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)

#### Max. switching capacity (resistive load)

1,250VA, 150W

750VA, 90W

2,000 VA

1,250VA, 150W  
2,000VA, 240W (high-capacity type)

#### Minimum permissible load (for reference only)

5mA @ 24VDC

10mA @ 5VDC

10mA @ 5VDC

10mA @ 5VDC

## Coil Information

#### Coil voltage

5, 12, 24VDC

5, 12, 24VDC

12, 24VDC

5, 6, 12, 24VDC

#### Power consumption

180mW  
120mW (high-sensitivity)

120mW

800mW

200mW (1 pole)  
300mW (2 pole)

#### Insulation class

Class B

Class B

Class B

Class A

## Characteristics

#### Operating temperature

-40 to +85°C

-40 to +85°C

-40 to +70°C

-25 to +70°C

#### Impulse withstand voltage (1.2 x 50μ sec. unless noted)

6kV

5.08kV

10kV

—

#### Dielectric strength (50/60 Hz for 1 minute)

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)

#### Terminal choices

PCB

PCB

PCB

PCB

#### Protection level

Fully Sealed

Fully sealed

Fully sealed

Fully sealed

#### Accessories

Socket for back connecting,  
sockets with PCB terminals

N/A

N/A

Sockets & clips for back connecting  
sockets with PCB terminals

#### Approved standards

UL, CSA, VDE

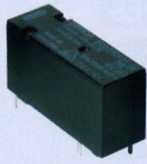



UL, CSA, VDE, EN, IEC 61131-2,  
IEC 61010

UL, CSA, VDE (0700/0110)

UL, CSA, (FCC Part 68)  
SEV, TUV, IEC

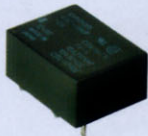
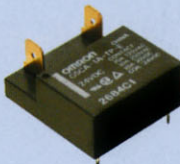
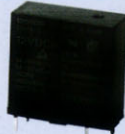
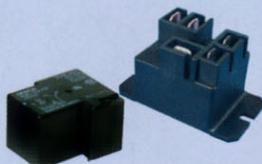


# Relays - Power PCB

		<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> 
General Attributes	G2R	G2RL	G5RL	G2RL-TP
<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>
Contact Information				
<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	—
Coil Information				
<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
Characteristics				
<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)
Classification	Switching/current conduction	High-current conduction	Switching/current conduction	Switching/current conduction
Features	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>				
Contact Form	SPST-NO	SPST-NO	SPST-NO	SPST-NO
Contact structure	Double-break, single	Double-break, single	Double-break, single	Double-break, single
Contact resistance	30mΩ max. (0.6mΩ typical)	10mΩ max. (0.3mΩ typical)	30mΩ max.	30mΩ max. (0.2mΩ typical)
Switching voltage drop	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)
*Electrical endurance	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.
Max. switching current	100A	30A	25A	200A
Rated carry current	60A	100A	25A	200A
Short-time carry current	100A (10 min.)	150A (10 min.)	50A (5 min.), 40A (10min.)	300A (15min.)
*Max. interruption current	600A @ 300VDC (5 times)	—	100A @ 250VDC (5 times)	1,000A @ 400VDC (10 times)
*Overload interruption	180A @ 400VDC (100 times min.)	100A @ 120VDC (150 times min.)	50A @ 250VDC (50 times min.)	700A @ 400VDC (40 times min.)
Reverse polarity interruption	-60A @ 200VDC (1,000 times min.)	—	—	-200A @ 200VDC (1,000 times min.)
<b>Coil Information</b>				
Rated voltage	12, 24, 48, 60 & 100VDC	12, 24, 48, 60 & 100VDC	12, 24, 48, 60 & 100VDC	12, 24, 48, 60 & 100VDC
Power consumption	Approx. 5 to 5.4W	Approx. 5 to 5.4W	Approx. 2W	Approx. 11W
Mechanical endurance	200,000 operations min.	200,000 operations min.	100,000 operations min.	200,000 operations min.
<b>Insulation resistance</b>				
Between Coil & Contacts	1,000MΩ min.	1,000MΩ min.	1,000MΩ min.	1,000MΩ min.
Between contacts of the same polarity	1,000MΩ min.	1,000MΩ min.	1,000MΩ min.	1,000MΩ min.
<b>Dielectric strength</b>				
Between coil & contacts	2,500VAC for 1min.	2,500VAC for 1min.	2,500VAC for 1min.	2,500VAC for 1min.
Between contacts of the same polarity	2,500VAC for 1min.	2,500VAC for 1min.	2,500VAC for 1min.	2,500VAC for 1min.
Impulse withstand voltage	4,500V	4,500V	4,500V	4,500V
Ambient operating temperature	-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>				
Screw terminals	Yes	Yes	Yes	Yes
Lead wire output	Yes	Yes	Yes	Yes

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



# Relays - General Purpose



## General Attributes

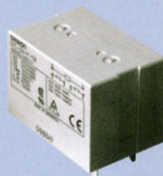
### MY

### LY

<b>Dimensions mm (in)</b>	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>	10A (2 pole); 5A (4 pole)	15A
<b>Features</b>	<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>	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, bifurcated
<b>Contact material(s)</b>	AgNi	Ag-Alloy
<b>Electrical service life (@ 1800 ops./hr.) (resistive load)</b>	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>	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>	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>	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>	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>	Class A	Class A
<b>Characteristics</b>		
<b>Operating temperature</b>	-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>	2,000VAC (coil-contact) 1,000VAC (open contacts)	2,000VAC (coil-contact) 1,000VAC (open contacts)
<b>Terminal choices</b>	PCB, plug-in	Track mounted socket PCB with .187/.250 QC
<b>Protection level</b>	Unsealed	Unsealed, semi-sealed
<b>Accessories</b>	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, SEV, CE, VDE, IMA	UL, CSA, SEV, VDE, CE (UL, CSA only with varistors)



# Relays - General Purpose



## General Attributes

### G7J

### G7L

#### Dimensions mm (in)

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)

#### Switching

25A max.

30A max.

#### Features

- Variety of contact forms
- Ideal for 3 phase motor control
- 4 pole mini contactor
- DIN rail mountable
- Minimal chattering
- UL94V-0

- Reliable high power relay
- 3 mm contact gap
- Conforms to IEC 950/UL 1950
- Class B insulation standard
- Most cost effective solution in its class.
- Ideal for pump, motor loads

## Contact Information

#### Contact form

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)

#### Contact type(s)

Single button

Single button

#### Contact material(s)

Ag Alloy

Ag Alloy

#### Electrical service life (@ 1800 ops./hr.) (resistive load)

100,000 min. (at rated loads)  
(see data sheet for more information)

100,000 min. (at rated loads)  
(see data sheet for more information)

#### Maximum switching capacity

5,500VA, 750W (NO contacts)  
1,760VA, 240W (NC contacts)

4,400VA

#### Minimum permissible load (@1800 ops./hr.)

100mA @ 24VDC

100mA @ 5VDC

## Coil Information

#### Coil voltage

6, 12, 24, 48, 100/110VDC;  
6, 12, 24, 50, 100/120,  
200/240VAC

12, 24, 48, 100VDC;  
12, 24, 100/120, 200/240VAC

#### Power consumption

1.8 to 2.6VA, 2.0W

1.7 to 2.5VA, 1.9W

#### Insulation class

Class A, Class B (available)

Class B

## Characteristics

#### Operating temperature

-25°C to +60°C

-20°C to +85°C

#### Impulse withstand voltage (1.2 x 50µ sec. unless noted)

10kV (coil-contacts)

10kV (coil-contacts)

#### Dielectric strength (50/60 Hz for 1 minute)

4,000VAC (coil-contacts)  
4,000VAC (different polarity)  
2,000VAC (open contacts)

4,000VAC (coil-contacts)  
2,000VAC (different polarity)  
2,000VAC (open contacts)

#### Terminal choices

Quick-connect, screw, PCB

Quick-connect, screw, PCB

#### Protection level

Unsealed  
Semi-sealed

Unsealed  
Semi-sealed

#### Accessories

R99-04V for G5D W-bracket

R99-07G5D E bracket;  
P7LF-D adapter;  
P7LF-06 front connecting socket



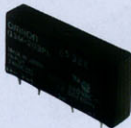

#### Approved standards

UL, CSA, TUV, CE, IEC

UL, CSA, TUV, CE, VDE available



# Relays - Solid State

	SIP 	SIP 	SIP 	SIP 
General Attributes	G3S/G3SD	G3CN	G3M	G3TB
Dimensions mm (in)	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)
Switching current (resistive) (max.)	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
Features	<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>
Operating temperature	-30°C to +80°C	-30°C to +80°C	-30°C to +80°C	-30°C to +85°C
Operating input	5, 12, 24VDC	5, 12, 24; 3~28VDC	5, 12, 24VDC	Input module: 80-264VAC, 3-32VDC; Output module: 3-32VDC
Output voltage	5, 12, 24VDC	75~264VAC 3~53VDC	75-264VAC	Input module: 4-32VDC; Output module: 75-264VAC, 4-200VDC
Leakage Current (max.)	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)
Isolation	Phototriac (G3S) Photocoupler (G3SD)	Phototriac Photocoupler	Phototriac	Photocoupler
Dielectric strength (50/60Hz for 1 min.)	2,500VAC	2,500VAC	2,000VAC (2A versions) 2,500VAC (3A and 5A versions)	4,000VAC
Zero crossing	No	Optional	Optional	Input module: No; Output module: Yes
Snubber circuit	Yes (Built-in Varistor)	No	Yes	Input module: No; Output module: Yes
Life (MTTF)	100,000 hours	100,000 hours	100,000 hours	100,000 hours
Mounting	PCB or Socket	PCB	PCB	PCB
Terminal	PCB	PCB	PCB	PCB
Approvals	UL, CSA	UL (114), CSA (22.2)	UL, CSA, TUV	UL, CSA
Equivalent Omron EMR footprint	G6B	N/A	N/A	N/A
Optional heat sink	Y92B-S08N	N/A	N/A	N/A
Socket	P6B-04P (PCB)	N/A	N/A	N/A

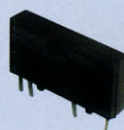


# Relays - Solid State

SIP



SIP



## General Attributes

### G3MB

### G3MC

#### Dimensions mm (in)

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)

#### Switching current (resistive)

2A @ 240VAC

2A @ 240VAC

#### Features

- Space saving SIP design
- Industry standard footprint
- Monoblock construction results in ultimate reliability

- Reduced height thin profile SIP
- Ideal for close PCB mounting
- Monoblock construction results in ultimate reliability
- Industry standard footprint

#### Operating temperature

-30°C to +80°C

-30°C to +80°C

#### Operating input

5, 12, 24VDC

5, 12, 24VDC

#### Output voltage

75-264VAC

75-264VAC

#### Leakage Current (max.)

1.5mA (at 200VAC)

1.5mA (at 200VAC)

#### Isolation

Phototriac

Phototriac

#### Dielectric strength (50/60Hz for 1 min.)

2,500VAC

2,500VAC

#### Zero crossing

Optional

Yes

#### Snubber circuit

Optional

Yes

#### Life (MTTF)

100,000 hours

100,000 hours

#### Mounting

PCB

PCB

#### Terminal

PCB

PCB

#### Approvals

UL, CSA, TUV

UL, CSA, VDE

#### Equivalent Omron EMR footprint

G2RV similar for terminal block

G2RV similar for terminal block

#### Optional heat sink

N/A

N/A

#### Socket

N/A

N/A



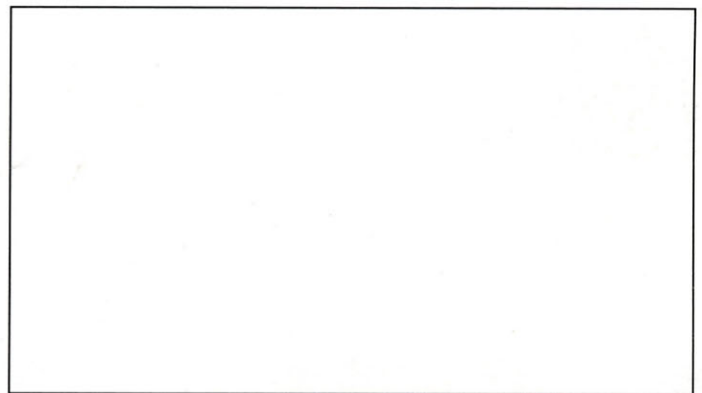
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