OMRON

Solid State Relay

G3MB

- Switches 2-A loads at 25°C
- DC input with AC output
- Space-saving design, ideal for high-density PCB applications
- Bottom is approximately three times smaller than Omron's G3M relay
- UL 508 recognized, CSA certified

Ordering Information

To Order: Select the part number and add the desired coil voltage rating, (e.g., G3MB-202P-*DC12*).

Isolation	Rated load voltage	Zero cross function	Rated input voltage	**Part number** Snubber circuit/No indicator
Phototriac	2 A at 100 to 120 VAC	No	5 VDC	**G3MB-102PL-DC5**
			12 VDC	**G3MB-102PL-DC12**
			24 VDC	**G3MB-102PL-DC24**
	2 A at 100 to 240 VAC	Yes	5VDC	**G3MB-202P-DC5**
			12 VDC	**G3MB-202P-DC12**
			24 VDC	**G3MB-202P-DC24**
		No	5 VDC	**G3MB-202PL-DC5**
			12 VDC	**GSMB-202PL-DC12**
			24 VDC	**G3MB-202PL-DC24**

Specifications

■ INPUT RATINGS

Ambient temperature 25° (77°F)

Type	Rated voltage	Operating voltage range	Impedence	Voltage Level	
				Must operate voltage	Must release voltage
G3MB-102PL	5 VDC	4 to 6 VDC	440 Ω, ±20%	4 VDC max.	1 VDC min.
G3MB-202P	12 VDC	9.60 to 14.40 VDC	1 kΩ, ±20%	9.60 VDC max.	1 VDC min.
G3MB-202PL	24 VDC	19.20 to 28.80 VDC	2.20 kΩ, ±20%	19.20 VDC max.	1 VDC min.

Note: Each model has 5 VDC, 12 VDC, and 24 VDC input versions.

■ OUTPUT RATINGS

Type	Applicable load			
	Rated load voltage	Load voltage range	Load current	Surge current
G3MB-102PL	100 to 120 VAC, 50/60 Hz	75 to 132 VAC, 50/60 Hz	0.10 to 2 A	30 A (60 Hz, 1 cycle)
G3MB-202P	120 to 240 VAC, 50/60 Hz	75 to 264 VAC, 50/60 Hz	0.10 to 2 A	30 A (60 Hz, 1 cycle)
G3MB-202PL	100 to 240 VAC, 50/60 Hz	75 to 264 VAC, 50/60 Hz	0.10 to 2 A	30 A (60 Hz, 1 cycle)

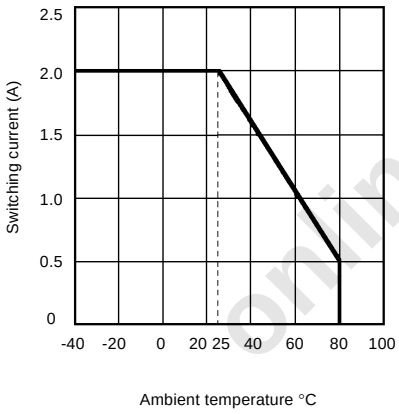
■ CHARACTERISTICS

Type		G3MB-102PL	G3MB-202P	G3MB-202PL
Operate time		1 ms max.	1/2 of load power source cycle + 1 ms max.	1 ms max.
Release time		1/2 of load power source cycle + 1 ms max.		
Output ON voltage drop		1.60 V (RMS) max.		
Leakage current		1 mA max. at 100 VAC	1 mA max. at 100 VAC, 1.50 mA at 200 VAC	
Non-repetitive peak surge		30 A		
Output	PIV (V_{DRM})	600 V		
	di/dt	40 A/μs		
	dv/dt	100 V/μs		
	I^2t	4 A^2s		
Junction temperature (Tj)		125°C (257°F) max.		
Insulation resistance		1,000 MΩ min. at 500 VDC		
Dielectric strength		2500 VAC, 50/60 Hz for 1 minute; 3750 VAC max., 1 second		
Vibration	Malfunction	10 to 55 Hz, 0.75 mm (0.03 in) double amplitude, approx. 5 G		
Shock	Malfunction	Approx. 100 G		
Ambient temperature	Operating	-30° to 80°C (-22° to 176°F) with no icing		
	Storage	-30° to 100°C (-22° to 212°F) with no icing		
Humidity	Operating	45% to 85% RH		
Weight		Approx. 5 g (0.18 oz)		

Note: Data shown are of initial value.

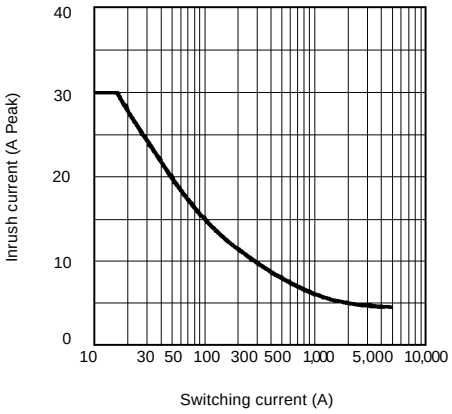
■ CHARACTERISTIC DATA

Load current vs. ambient temperature characteristics



Inrush current resistivity

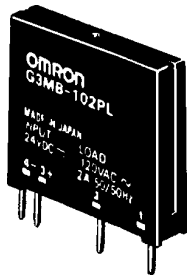
Non-repetitive (Keep the inrush current to half the rated value if it occurs repetitively.)

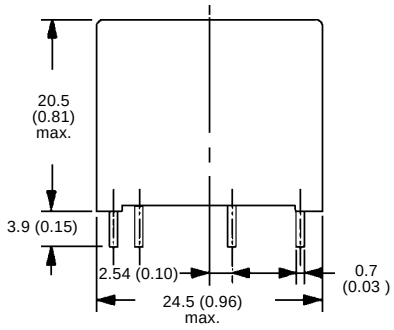


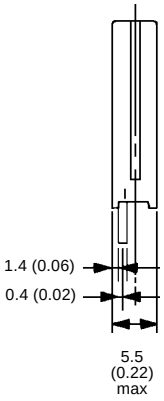
Dimensions

Unit: mm (inch)

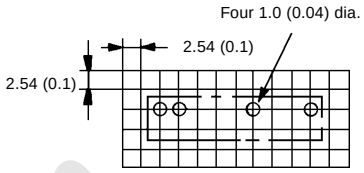
■ RELAYS



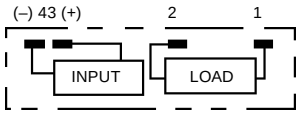




PCB Dimensions
(Bottom view)



Terminal Arrangement/ Internal Connections
(Bottom view)



■ APPROVALS

UL (File No. E64562)

SSR Type	Input voltage	Load type	Contact ratings
G3MB-102P	5 to 24 VDC	General purpose	2 A, 120 VAC
		Tungsten	1 A, 120 VAC
		Motor	1.60 FLA/9.60 LRA, 120 VAC
G3MB-202P		General purpose	2 A, 240 VAC
G3MB-202PL		Tungsten	1 A, 240 VAC
		Motor	1.60 FLA/9.60 LRA, 240 VAC

CSA (File No. LR35535-274)

SSR Type	Input voltage	Load type	Contact ratings
G3MB-102P	5 to 24 VDC	General purpose	2 A, 120 VAC
		Tungsten	1 A, 120 VAC
		Motor	1.60 FLA/8.60 LRA, 120 VAC
G3MB-202P		General purpose	2 A, 240 VAC
G3MB-202PL		Tungsten	1 A, 240 VAC
		Motor	1.60 FLA/8.60 LRA, 240 VAC

Note: 1. The rated values approved by each of the safety standards (e.g., UL and CSA) may be different from the performance characteristics individually defined in this catalog.
2. In the interest of product improvement, specifications are subject to change.

Precautions

Soldering must be completed within 10 seconds at 260°C (500°F) maximum or within 5 seconds at 350°C (662°F) maximum.

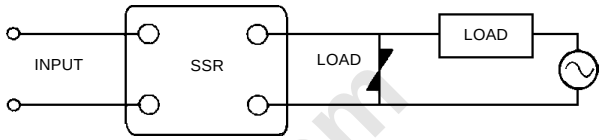
To use the SSR output for phase control, select a model that does not incorporate a zero-cross function.

The SSR case serves to dissipate heat. Install the relays so that they are adequately ventilated. If poor ventilation is unavoidable, reduce the load current by half.

The load terminals are internally connected to a snubber circuit that absorbs noise. However, if wiring from these terminals is laid with or placed in the same duct as high-voltage or power lines, noise may be induced, causing the SSR to operate irregularly or malfunction.

The input circuitry does not incorporate a circuit protecting the SSR against damage from reverse polarity connection. Make sure that the polarity is correct when connecting the input lines.

When using the G3MB-102PL for an AC load with a peak voltage of more than 250 V or the G3MB-202P(L) for an AC load with a peak voltage of more than 450 V, connect the load terminals of the relay to a varistor as shown in the following circuit diagram.



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