

# Solid State Relay G3M

## 1, 2, 3 and 5 A single in-line package SSR

- Thin design for high-density PCB applications.
- DC input-AC output for up to a 5-A load.
- Two foot prints offer greater flexibility.
- Approved by UL and CSA.



## Ordering Information

To order: Select the part number and add the desired coil voltage rating, (e.g., G3M-202P-US DC5)

Isolation	Input terminal pitch	Zero cross function	Indicator	Rated output load (Applicable output load)	Rated input voltage	Model
Phototriac	7.62 mm	Yes	No	2 A at 100 to 240 VAC (2 A at 75 to 264 VAC)	5 VDC	G3M-202P-US
					12 VDC	
					24 VDC	
				3 A at 100 to 240 VAC (3 A at 75 to 264 VAC)	5 VDC	G3M-203P
					12 VDC	
					24 VDC	
		No		2 A at 100 to 120 VAC (2 A at 75 to 132 VAC)	5 VDC	G3M-102PL-US
					12 VDC	
					24 VDC	
				2 A at 100 to 240 VAC (2 A at 75 to 264 VAC)	5 VDC	G3M-202PL-US
					12 VDC	
					24 VDC	
3 A at 100 to 240 VAC (3 A at 75 to 264 VAC)	5 VDC	G3M-203PL				
	12 VDC					
	24 VDC					
5 A at 100 to 240 VAC (5 A at 75 to 264 VAC)	5 VDC	G3M-205PL				
	12 VDC					
	24 VDC					

(This table continues on the next page.)

Ordering Information (continued)

Isolation	Input terminal pitch	Zero cross function	Indicator	Rated output load (Applicable output load)	Rated input voltage	Model	
Phototriac	5.08 mm	Yes	No	2 A at 100 to 240 VAC (2 A at 75 to 132 VAC)	5 VDC	G3M-202P-US-4	
					12 VDC		
					24 VDC		
				3 A at 100 to 240 VAC (3 A at 75 to 264 VAC)	5 VDC		G3M-203P-4
					12 VDC		
					24 VDC		
		No		2 A at 100 to 120 VAC (3 A at 75 to 264 VAC)	5 VDC	G3M-102PL-US-4	
					12 VDC		
					24 VDC		
				2 A at 100 to 240 VAC (2 A at 75 to 264 VAC)	5 VDC	G3M-202PL-US-4	
					12 VDC		
					24 VDC		
3 A at 100 to 240 VAC (3 A at 75 to 264 VAC)	5 VDC	G3M-203PL-4					
	24 VDC						
	5 A at 100 to 240 VAC (5 A at 75 to 264 VAC)		5 VDC	G3M-205PL-4			
12 VDC							
24 VDC							

- Note: 1. TÜV marking is available with "-UTU" in place of "-US" on the part number.  
 2. VDE versions available. Contact your local OMRON representative.

## Specifications

### RATINGS

#### Input

Rated voltage	Operating voltage	Impedance	Voltage levels	
			Must operate voltage	Must release voltage
5 VDC	4 to 6 VDC	300 Ω ±20%	4 VDC max.	1 VDC min.
12 VDC	9.6 to 14.4 VDC	800 Ω ±20%	9.6 VDC max.	
24 VDC	19.2 to 28.8 VDC	1.6 kΩ ±20%	19.2 VDC max.	

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

#### Output

Model	Rated voltage	Applicable load		
		Load voltage	Load current	Inrush current
G3M-102PL-US (-4)	100 to 120 VAC	75 to 132 VAC	0.1 to 2 A	30 A (60 Hz, 1 cycle)
G3M-202P(L)-US (-4)				
G3M-203P(L) (-4)		75 to 264 VAC	0.1 to 3 A	45 A (60 Hz, 1 cycle)
G3M-205P(L) (-4)			0.1 to 5 A	

■ CHARACTERISTICS

Item	G3M-102PL-US (-4)	G3M-202P(L)-US (-4)	G3M-203P(L) (-4)	G3M-205P(L) (-4)
Operate time	1 ms max. (1/2 of load power source cycle + 1 ms max. for G3M-202P, G3M-203P, G3M-205P)			
Release time	1/2 of load power source cycle + 1 ms max.			
Output ON voltage drop	1.6 V (RMS) max.			
Leakage current	2 mA max. (at 100 VAC)	2 mA max. (at 100 VAC) 5 mA max. (at 200 VAC)	1.5 mA (at 200 VAC)	
Insulation resistance	1,000 MΩ min. (at 500 VDC)			
Dielectric strength	2,000 VAC, 50/60 Hz for 1 min		2,500 VAC, 50/60 Hz for 1 min	
Vibration resistance	Malfunction: 10 to 55 Hz, 1.5-mm double amplitude			
Shock resistance	Malfunction: 1,000 m/s <sup>2</sup> {approx. 100G}			
Ambient temperature	Operating: -30°C to 80°C (with no icing or condensation) Storage: -30°C to 100°C (with no icing or condensation)			
Approved standards	UL508 File No. E64562/CSA C22.2 (No.0, No.14) File No. LR35535 TÜV R9551055 (EN60950)			
Ambient humidity	Operating: 45% to 85%			
Weight	Approx. 15 g			Approx. 25 g

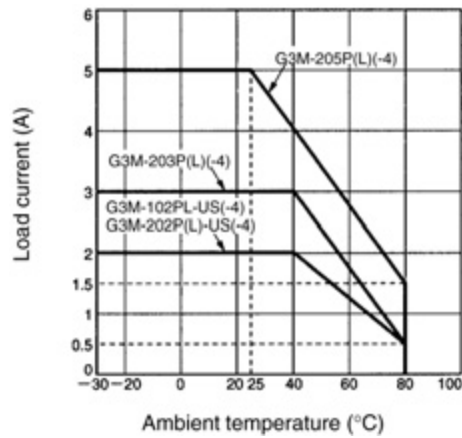
■ APPROVALS

UL (File No. E64562)/CSA (File No. LR35535)

Input Voltage	SSR Type	Load Rating
5, 12, 24 VDC	With Suffixes 102 and US or UTU	2 A, 125 VAC, Resistive 250 W, 125 VAC, Tungsten 2 A FLA, 12 A LRA, 125 VAC
	With Suffixes 202 and US	2 A, 250 VAC, Resistive 500 W, 250 VAC, Tungsten 2 A FLA, 12 A LRA, 250 VAC
	With Suffixes 202 UTU, UTU-1, and UTU-2	2 A, 250 VAC, Resistive 250 W, 250 VAC, Tungsten 1 FLA, 6 LRA, 250 VAC
	With Suffixes 103 and US or UTU	3 A, 125 VAC, Resistive 375 W, 125 VAC, Tungsten 1.5 A FLA, 9 A LRA, 125 VAC
	With Suffixes 203 and US or UTU	3 A, 250 VAC, Resistive 750 W, 250 VAC, Tungsten 1.5 A FLA, 9 A LRA, 250 VAC
	With Suffix 105	5 A, 125 VAC, Resistive 625 W, 125 VAC, Tungsten 2.5 A FLA, 15 A LRA, 125 VAC
	With Suffix 205	5 A, 250 VAC, Resistive 1250 W, 250 VAC, Tungsten 2.5 A FLA, 15 A LRA, 250 VAC

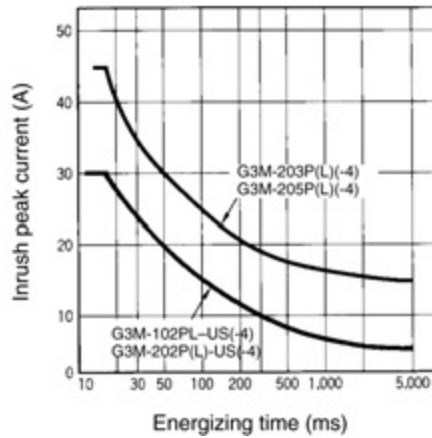
# Engineering Data

## Load Current vs. Temperature Ambient



## Inrush Current Immunity

Non-repetitive  
Reduce the current to 1/2 or less if the G3M is in repetitive operation.



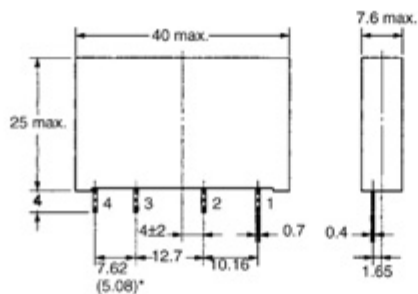
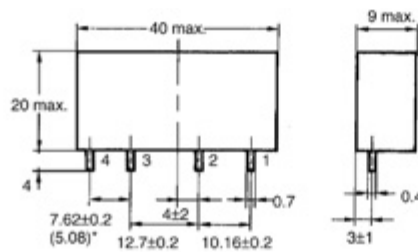
## Dimensions

Note: All units are in millimeters unless otherwise indicated.

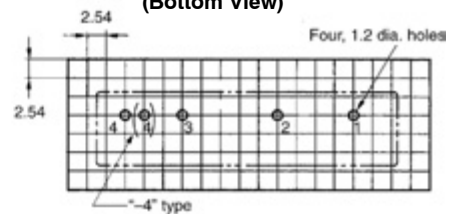
G3M-102PL-US(-4), G3M-202P(L)-US(-4)  
G3M-203P(L)(-4)



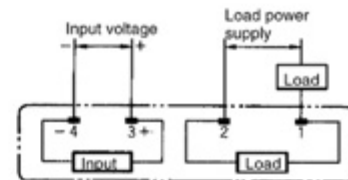
G3M-205P(L)(-4)



### PCB Dimensions (Bottom View)



### Terminal Arrangement (Bottom View)



\*Input terminal pitch of 5.08 mm is also available.

## Precautions

### Protective Element

No overvoltage absorption element is built in. Therefore, if the G3M is connected to an inductive load, be sure to connect the overvoltage absorption element.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS. To convert millimeters into inches, divide by 25.4

**OMRON**

**OMRON ELECTRONICS LLC**

One Commerce Drive  
Schaumburg, IL 60173

**847-882-2288**

**OMRON CANADA, INC.**

885 Milner Avenue  
Toronto, Ontario M1B 5V8

**416-286-6465**

**OMRON ON-LINE**

Global - <http://www.omron.com>  
USA - <http://www.omron.com/oei>  
Canada - <http://www.omron.ca>