

### Zero Cross Models Added to Compact, Low-cost G3M Series

- Thin design for high-density PCB applications.
- DC input-AC output for up to a 3-A load.
- Approved by UL and CSA.



### Ordering Information

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 (New)				
	12 VDC					
	24 VDC					

**Note:** TÜV marking is available with “-UTU” in place of “-US” on the part number.

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 (New)					
	12 VDC						
	24 VDC						

**Note:** TÜV marking is available with "-UTU" in place of "-US" on the part number.

## 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 240 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>			
Ambient temperature	Operating: -30°C to 80°C (with no icing or condensation) Storage: -30°C to 100°C (with no icing or condensation)			
Ambient humidity	Operating: 45% to 85%			
Weight	Approx. 15 g			Approx. 25 g

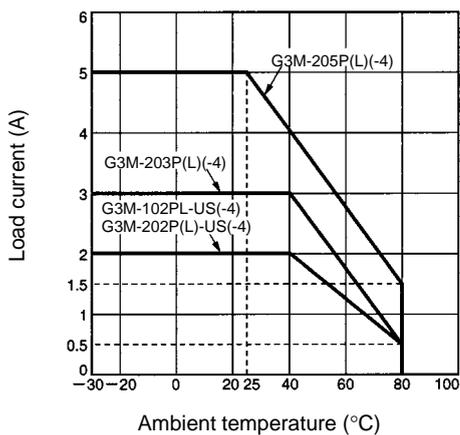
## ■ Approved Standards

Approved by UL (Report No. E64562)	Approved by CSA (Report No. LR35535)	Approved by TÜV
G3M-202P(L)-US(-4) G3M-203P(L)-(-4)	G3M-202P(L)-US(-4) G3M-203P(L)-(-4)	G3M-202P(L)-UTU(-4) G3M-203P(L)-UTU(-4)

Approval expected in Dec 1999 by UL	Approval expected in Dec 1999 by CSA	Approval expected in Mar 2000 by VDE
G3M-205P(L)-(-4)	G3M-205P(L)-(-4)	G3M-205P(L)-UTU(-4)

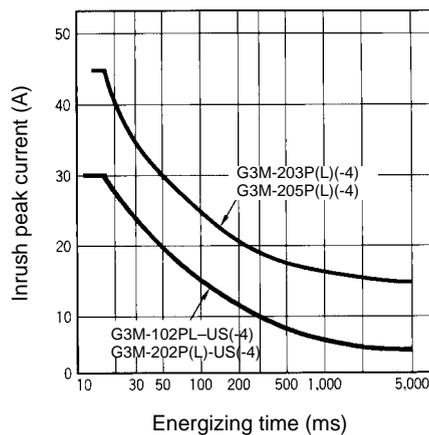
## Engineering Data

### Load Current vs. Ambient Temperature



### Inrush Current Immunity

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

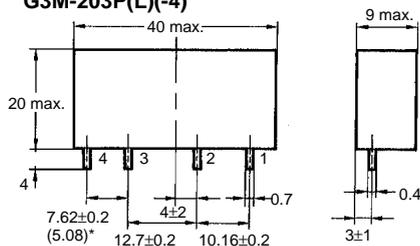


## Dimensions

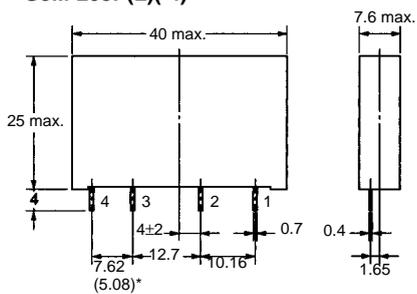
**Note:** All units are in millimeters unless otherwise indicated.



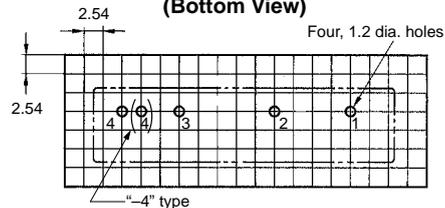
**G3M-102P-US(-4), G3M-202P(L)-US(-4)  
G3M-203P(L)(-4)**



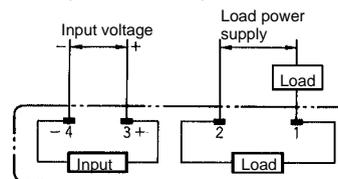
**G3M-205P(L)(-4)**



**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, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.