OMRON

Solid-state Relay

G3F/G3FD

Plug-in Type Power Relays (Same as the MY Series)

- Sizes and terminal arrangements are the same as OMRON MY-series Power Relays. The same Sockets are also used.
- DC-AC, DC-DC, AC-AC, AC-DC Types.
- Operating indicator provided.

Ordering Information

Isolation	Zero cross function	Indicator	Rated output load (Applicable output load)	Rated input voltage	Model
Photocoupler	Yes	Yes	3 A at 100 to 240 VAC (see note 2) (3 A at 75 to 264 VAC)	5 to 24 VDC	G3F-203SN
			2 A at 100 to 240 VAC (see note 2) (2A at 75 to 264 VAC)	100/110 VAC	G3F-202SN
				200/220 VAC	
Phototriac coupler	No		3 A at 100 to 240 VAC (see note 2) (3 A at 75 to 264 VAC)	5 VDC	G3F-203SLN
				12 VDC	
				24 VDC	
Photocoupler			3 A at 4 to 48 VDC (see note 3) (3 A at 3 to 52.8 VDC)	5 to 24 VDC	G3FD-X03SN
			2 A at 5 to 110 VDC (2 A at 3 to 125 VDC)	100/110 VAC	G3FD-102SN
				200/220 VAC	
				5 to 24 VDC	
Photocoupler	Yes	No	3 A at 100 to 240 VAC (see note 2) (3 A at 75 to 264 VAC)	4 to 24 VDC	G3F-203S
Phototriac coupler	No			5 VDC	G3F-203SL
				12 VDC	
				24 VDC	
Photocoupler			3 A at 4 to 48 VDC (see note3) (3 A at 3 to 52.8 VDC)	4 to 24 VDC	G3FD-X03S
			2 A at 5 to 110 VDC (2 A at 3 to 125 VDC)		G3FD-102S

Note: 1. Models to be used with a full-wave rectifier can be ordered by adding "-V" after the model number. This rectifier is available only on models without the zero cross function (e.g., G3F-203SL-V).

2. Product is labelled "250 VAC".

3. Product is labelled "50 VDC".

■ Accessories (Order Separately)

Connecting Socket

Refer to page 244 for details.

Item	PYF08A-E	PY08	PY08-02	PY08QN(2)
Connecting	Front connecting	Back connecting		
Mounting method/ Terminal type	Track mounted/ screw terminals	Solder terminals	PCB terminals	Wrapping terminals
Hold-down clip	PYC-A1	PYC-P		

Specifications

■ Ratings

Input

Model	Rated voltage	Operating voltage	Impedance	Voltage level	
				Must operate voltage	Must release voltage
G3F-203SN	5 to 24 VDC	4 to 28 VDC	1.5 kΩ$^{+20\%}_{-10\%}$*	4 VDC max.	1 VDC min.
G3F-202SN	100/110 VAC	75 to 125 VAC	41 kΩ±20%	75 VAC max.	20 VAC min.
	200/220 VAC	150 to 250 VAC	72 kΩ±20%	150 VAC max.	40 VAC min.
G3F-203SLN	5 VDC	4 to 6 VDC	390 Ω±20%	4 VDC max.	1 VDC min.
	12 VDC	9.6 to 14.4 VDC	900 Ω±20%	9.6 VDC max.	
	24 VDC	19.2 to 28.8 VDC	2 kΩ±20%	19.2 VDC max.	
G3FD-X03SN	5 to 24 VDC	4 to 28 VDC	1.5 kΩ$^{+20\%}_{-10\%}$*	4 VDC max.	
G3FD-102SN	5 to 24 VDC	4 to 28 VDC	1.5 kΩ$^{+20\%}_{-10\%}$*	4 VDC max.	
	100/110 VAC	75 to 125 VAC	41 kΩ±20%	75 VAC max.	20 VAC min.
	200/220 VAC	150 to 250 VAC	72 kΩ±20%	150 VAC max.	40 VAC min.
G3F-203S	4 to 24 VDC	3 to 28 VDC	1.5 kΩ$^{+20\%}_{-10\%}$*	3 VDC max.	1 VDC min.
G3F-203SL	5 VDC	4 to 6 VDC	390 Ω±20%	4 VDC max.	
	12 VDC	9.6 to 14.4 VDC	900 Ω±20%	9.6 VDC max.	
	24 VDC	19.2 to 28.8 VDC	2 kΩ±20%	19.2 VDC max.	
G3FD-X03S	4 to 24 VDC	3 to 28 VDC	1.5 kΩ$^{+20\%}_{-10\%}$*	3 VDC max.	
G3FD-102S					

*Input impedance attains its maximum at the operating voltage.

Output

Model	Rated load voltage	Applicable load		
		Load voltage	Load current	Inrush current
G3F-203SN **G3F-203SLN** **G3F-203S** **G3F-203SL**	100 to 240 VAC	75 to 264 VAC	0.1 to 3 A	45 A (60 Hz, 1 cycle)
G3F-203SN	100 to 240 VAC	75 to 264 VAC	0.1 to 2 A	45 A (60 Hz, 1 cycle)
G3FD-X03SN **G3FD-X03S**	4 to 48 VDC	3 to 52.8 VDC	0.1 to 3 A	18 A (10 ms)
G3FD-102SN **G3FD-102S**	5 to 110 VDC	3 to 125 VDC	0.1 to 2 A	10 A (10 ms)

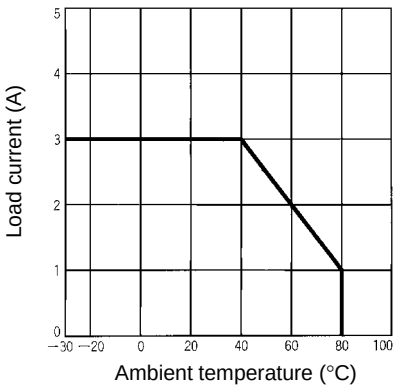
■ Characteristics

Item	G3F-203SN G3F-202SN G3F-203S	G3F-203SLN G3F-203SL	G3FD-X03SN G3FD-X03S	G3FD-102SN	G3FD-102S
Operate time	1/2 of load power source cycle + 1 ms max. (DC input) 3/2 of load power source cycle + 1 ms max. (AC input)	1 ms max.	0.5 ms max.	0.5 ms max. (DC input) 20 ms max. (AC input)	0.5 ms max.
Release time	1/2 of load power source cycle + 1 ms max. (DC input) 3/2 of load power source cycle + 1 ms max. (AC input)	1/2 of load power source cycle + 1 ms max.	2 ms max.	2.5 ms max. (DC input) 20 ms max. (AC input)	2.5 ms max.
Output ON voltage drop	1.6 V (RMS) max.		1.5 V max.		
Leakage current	5 mA max. (at 100 VAC) 10 mA max. (at 200 VAC)	2.5 mA max. (at 100 VAC) 5 mA max. (at 200 VAC)	5 mA max. (at 50 VDC)	0.1 mA max. (at 100 VDC)	0.1 mA max. (at 100 VDC)
Insulation resistance	100 MΩ min. (at 500 VDC)				
Dielectric strength	1,500 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^2				
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. 50 g				

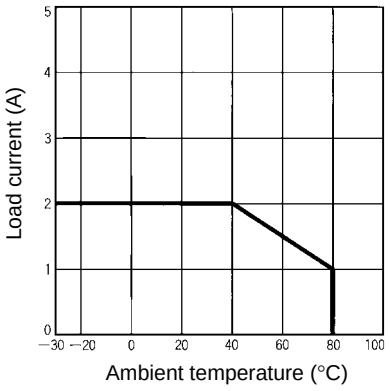
Engineering Data

Load Current vs. Ambient Temperature Characteristics

G3F-203SN/203S/203SLN/203SL
G3FD-X03SN/X03S



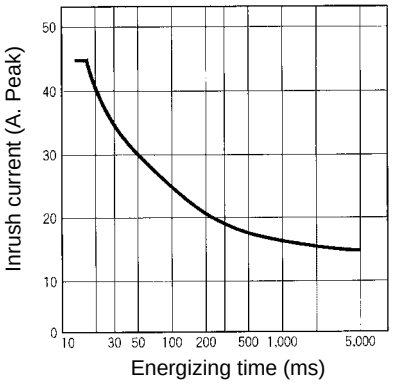
G3F-202SN
G3FD-102SN/102S



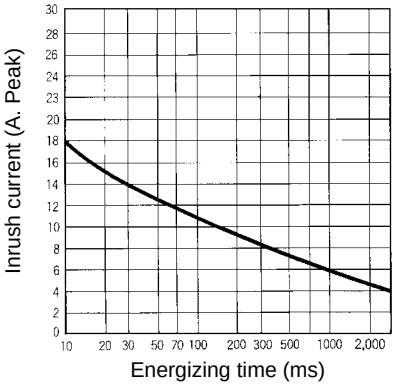
Inrush Current Resistivity

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

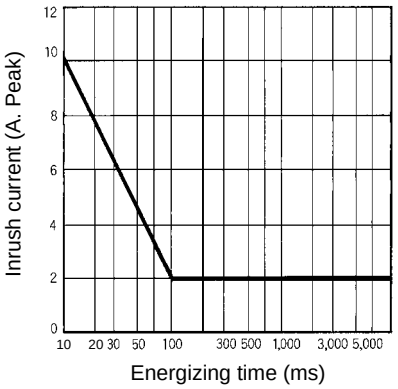
G3F-203SN/203S/202SN/203SLN/203SL



G3FD-X03SN/X03S

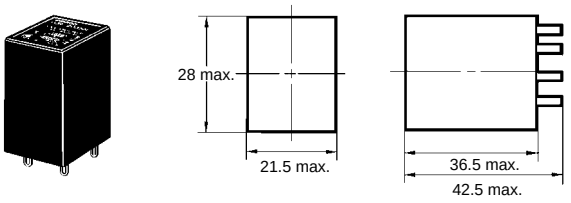


G3FD-102SN/102S

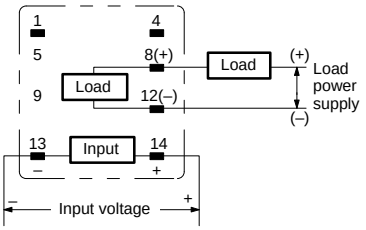


Dimensions

Note: All units are in millimeters unless otherwise indicated.



Terminal Arrangement/ Internal Connections (Bottom View)



Note: The plus and minus symbols shown in parentheses are for DC loads.

Precautions

Connection

The SSR for DC switching use can connect to a load regardless of the polarity of the positive and negative output terminals.

High-density Mounting of Multiple Relays

If multiple Relays are mounted side by side, be aware that outer wall of each SSR works as a radiator.

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

Protective Terminal

When using for AC inductive loads, connect the load terminals of the SSR to an inrush absorber (varistor).

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.
To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

Cat. No. K055-E1-4A