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Solid State Relays G3□-VD
G3F/G3FD

CSM_G3F_G3FD_DS_E_2_1

International Standards for G3F Series, Same Profile as MY Power Relays

- Shape-compatible with mechanical relays.
- Certified by UL, CSA, and VDE (model numbers with a suffix of "-VD").
- Socket type, same size as MY Power Relays.
- Operation indicator provided to confirm input (model numbers with "N" before the suffix).

⚠ Refer to *Safety Precautions* on page 6.



Model Number Structure

■ Model Number Legend

G3F-□□□□□-□
1 2 3 4 5 6 7

1. **Basic Model Name**
   G3F: Solid State Relay
2. **Rated Load Power Supply Voltage**
   2: 200 VAC
3. **Rated Load Current**
   02: 2 A
   03: 3 A
4. **Terminal Type**
   S: Plug-in terminals
5. **Zero Cross Function**
   Blank: Equipped with zero cross functions
   L: Not equipped with zero cross function
6. **Operation Indicator**
   Blank: Not equipped with operation indicator
   N: Equipped with operation indicator
7. **Certification**
   VD: Certified by UL, CSA, and VDE

G3FD-□□□□-□
1 2 3 4 5 6 7

1. **Basic Model Name**
   G3F: Solid State Relay
2. **Load Power Supply Type**
   D: DC
3. **Rated Load Power Supply Voltage**
   X: 50 VDC
   1: 100 VDC
4. **Rated Load Current**
   02: 2 A
   03: 3 A
5. **Terminal Type**
   S: Plug-in terminals
6. **Operation Indicator**
   Blank: Not equipped with operation indicator
   N: Equipped with operation indicator
7. **Certification**
   VD: Certified by UL, CSA, and VDE

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Ordering Information

■ List of Models

Isolation	Zero cross function	Indicator	Rated output load	Rated input voltage	Model
Photocoupler	Yes	Yes	3 A at 100 to 240 VAC (See note 1.)	5 to 24 VDC	G3F-203SN-VD
			2 A at 100 to 240 VAC (See note 1.)	100/110 VAC	G3F-202SN-VD
				200/220 VAC	
Phototriac coupler	No		3 A at 100 to 240 VAC (See note 1.)	5 VDC	G3F-203SLN-VD
				12 VDC	
				24 VDC	
Photocoupler	–		3 A at 4 to 48 VDC (See note 2.)	5 to 24 VDC	G3FD-X03SN-VD
			2 A at 5 to 110 VDC	100/110 VAC	G3FD-102SN-VD
				200/220 VAC	
				5 to 24 VDC	
Photocoupler	Yes	No	3 A at 100 to 240 VAC (See note 1.)	4 to 24 VDC	G3F-203S-VD
Phototriac coupler	No			5 VDC	G3F-203SL-VD
				12 VDC	
				24 VDC	
Photocoupler	–		3 A at 4 to 48 VDC (See note 2.)	4 to 24 VDC	G3FD-X03S-VD
			2 A at 5 to 110 VDC		G3FD-102S-VD

Note: 1. Product is labelled “240 VAC”.
2. Product is labelled “48 VDC”.
3. When ordering, specify the rated input voltage.

■ Accessories (Order Separately)

Connecting Sockets

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		

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Specifications

■ Ratings (at an Ambient Temperature of 25°C)

Input

Model	Rated voltage	Operating voltage	Impedance	Voltage level	
				Must operate voltage	Must release voltage
G3F-203SN-VD	5 to 24 VDC	4 to 28 VDC	15 mA max. (See note.)	4 VDC max.	1 VDC min.
G3F-202SN-VD	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-VD	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-VD	5 to 24 VDC	4 to 28 VDC	1.5 $k\Omega^{+20\%}_{-10\%}$	4 VDC max.	
G3FD-102SN-VD	5 to 24 VDC	4 to 28 VDC	1.5 $k\Omega^{+20\%}_{-10\%}$	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-VD	4 to 24 VDC	3 to 28 VDC	15 mA max. (See note.)	3 VDC max.	1 VDC min.
G3F-203SL-VD	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-VD	4 to 24 VDC	3 to 28 VDC	1.5 $k\Omega^{+20\%}_{-10\%}$	3 VDC max.	
G3FD-102S-VD					

Note: 1. The input impedance is given for the maximum operating range. For details, refer to the *Technical Guide for Solid State Relays*.
2. Constant-current input circuit.

Output

Model	Rated load voltage	Applicable load		
		Load voltage range	Load current	Inrush current
G3F-203SN-VD **G3F-203SLN-VD** **G3F-203S-VD** **G3F-203SL-VD**	100 to 240 VAC	75 to 264 VAC	0.1 to 3 A at 40°C	45 A (60 Hz, 1 cycle)
G3F-203SN-VD	100 to 240 VAC	75 to 264 VAC	0.1 to 2 A at 40°C	45 A (60 Hz, 1 cycle)
G3FD-X03SN-VD **G3FD-X03S-VD**	4 to 48 VDC	3 to 52.8 VDC	0.1 to 3 A at 40°C	18 A (10 ms)
G3FD-102SN-VD **G3FD-102S-VD**	5 to 110 VDC	3 to 125 VDC	0.1 to 2 A at 40°C	10 A (10 ms)

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■ Characteristics

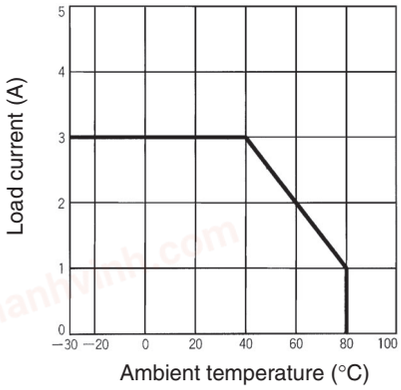
Item	G3F-203SN-VD G3F-202SN-VD G3F-203S-VD	G3F-203SLN-VD G3F-203SL-VD	G3FD-X03SN-VD G3FD-X03S-VD	G3FD-102SN-VD	G3FD-102S-VD
Operate time	1/2 of load power source cycle + 1 ms max. (DC input) 3/2 of load power source cycle + 1 ms max. (AC input)	1 ms max.	0.5 ms max.	0.5 ms max. (DC input) 20 ms max. (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	2,000 VAC, 50/60 Hz for 1 min		1,500 VAC, 50/60 Hz for 1 min		
Vibration resistance	Destruction: 10 to 55 to 10 Hz, 0.75-mm single amplitude				
Shock resistance	Destruction: 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%				
Certified standards	G3F: UL508, CSA C22.2 No. 14, EN60947-4-3 G3FD: UL508, CSA C22.2 No. 14, EN60950-1				
EMC	Emission: EN55011 Group 1 Class B Immunity: EN61000-6-2				
Weight	Approx. 50 g				

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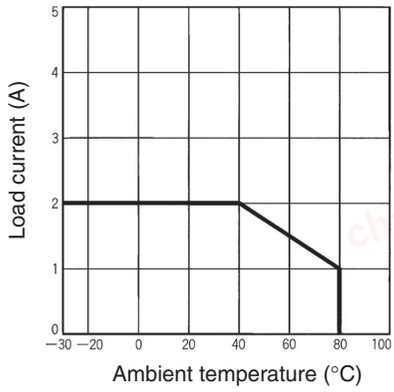
Engineering Data

Load Current vs. Ambient Temperature Characteristics

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



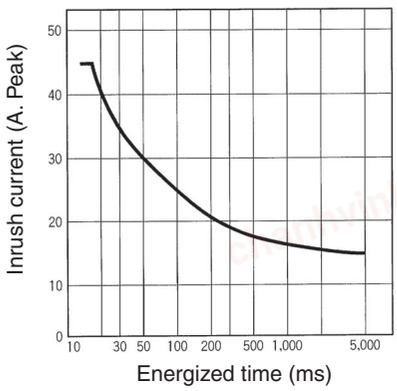
G3F-202SN-VD
G3FD-102SN-VD/102S-VD



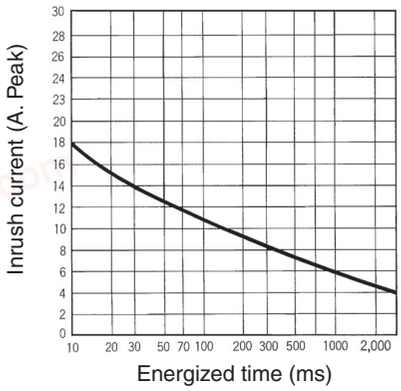
One Cycle Surge Current: Non-repetitive

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

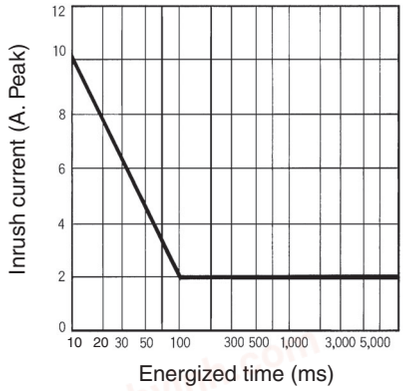
G3F-203SN-VD/203S-VD/202SN-VD/ 203SLN-VD/203SL-VD



G3FD-X03SN-VD/X03S-VD



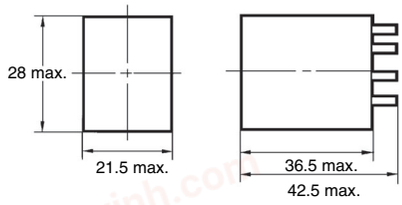
G3FD-102SN-VD/102S-VD



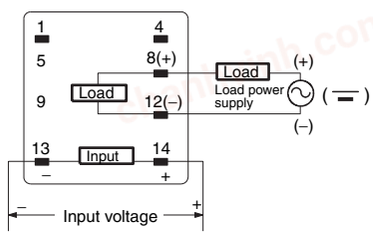
Dimensions

Note: All units are in millimeters unless otherwise indicated.





Terminal Arrangement/ Internal Connections



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

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Safety Precautions

Refer to *Safety Precautions for All Solid State Relays*.

■ Precautions for Correct Use

Please observe the following precautions to prevent failure to operate, malfunction, or undesirable effect on product performance.

Connection

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

Close Mounting of Multiple Relays

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

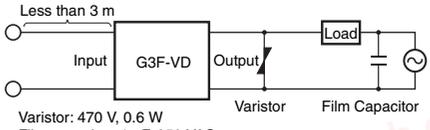
The SSR casing serves to dissipate heat. Install the Relays so that they are adequately ventilated. If poor ventilation is unavoidable, reduce the load current by half.

Protective Terminal

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

EMC Directive Compliance

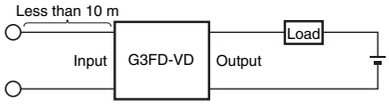
1. AC-switching models comply with EMC Directives under the following conditions ("-VD" models only).



Varistor: 470 V, 0.6 W
Film capacitor: 1 μF, 250 VAC

- Connect a varistor between the output terminals.
- Connect a film capacitor to the load power supply.
- The input cable must be less than 3 m.

2. DC-switching models comply with EMC Directives under the following conditions ("-VD" models only).



- The input cable must be less than 10 m.

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

In the interest of product improvement, specifications are subject to change without notice.

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   (iv) Systems, machines and equipment that could present a risk to life or property. Please know and observe all prohibitions of use applicable to this Product.
   NEVER USE THE PRODUCT FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY OR IN LARGE QUANTITIES WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON'S PRODUCT IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.
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