

Compact, Slim-profile SSR with Heat Sink, Offering Heater Control for 480-VAC Rated Loads

- Compact design achieved by optimizing heat sink shape.
- DIN track mounting possible in addition to screw mounting.
- Conforms to CE Marking, EN (VDE approval), UL, CSA, and VDE standards.
(UL pending for 480 V series)



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



Model Number Structure

Model Number Legend

G3PB-□□□-□□-□
1 2 3 4 5 6 7

1. Basic Model Name

G3PB: Solid State Relay

2. Rated Load Power Supply Voltage

2: 240 VAC

5: 480 VAC

3. Applicable Load Current

15: 15 A

25: 25 A

35: 35 A

45: 45 A

4. Terminal Type

B: Screw terminals

5. Number of Elements

Blank: Single-phase models

6. Construction

Blank: DIN track mounting and built-in heat sink

7. Certification

VD: Certified by CSA and VDE

Ordering Information

List of Models

Isolation method	Zero cross function	Operation indicator	Rated input voltage	Applicable load (See note.)	Model number
Phototriac coupler	Yes	Yes (yellow)	12 to 24 VDC	15 A, 100 to 240 VAC	G3PB-215B-VD DC12-24
				25 A, 100 to 240 VAC	G3PB-225B-VD DC12-24
				35 A, 100 to 240 VAC	G3PB-235B-VD DC12-24
				45 A, 100 to 240 VAC	G3PB-245B-VD DC12-24
				15 A, 200 to 480 VAC	G3PB-515B-VD DC12-24
				25 A, 200 to 480 VAC	G3PB-525B-VD DC12-24
				35 A, 200 to 480 VAC	G3PB-535B-VD DC12-24
				45 A, 200 to 480 VAC	G3PB-545B-VD DC12-24

Note: The applicable load current depends on the ambient temperature. For details, refer to *Load Current vs. Ambient Temperature* in Engineering Data.

Accessories (Order Separately)

Mounting Track	50 cm (1) x 7.3 mm (t)	PFP-50N
	1 m (1) x 7.3 mm (t)	PFP-100N
	1 m (1) x 16 mm (t)	PFP-100N2

Specifications

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

Input

Item	Common
Rated voltage	12 to 24 VDC
Operating voltage range	9.6 to 30 VDC
Rated input current	7 mA max.
Must operate voltage	9.6 VDC max.
Must release voltage	1 VDC min.

Output

Item	G3PB-215B-VD	G3PB-225B-VD	G3PB-235B-VD	G3PB-245B-VD	G3PB-515B-VD	G3PB-525B-VD	G3PB-535B-VD	G3PB-545B-VD
Rated load voltage	100 to 240 VAC (50/60 Hz)				200 to 480 VAC (50/60 Hz)			
Load voltage range	75 to 264 VAC (50/60 Hz)				180 to 528 VAC (50/60 Hz)			
Applicable load current (See note.)	0.1 to 15 A (at 40°C)	0.1 to 25 A (at 40°C)	0.5 to 35 A (at 25°C)	0.5 to 45 A (at 25°C)	0.1 to 15 A (at 40°C)	0.1 to 25 A (at 40°C)	0.5 to 35 A (at 25°C)	0.5 to 45 A (at 25°C)
Inrush current resistance (peak value)	150 A (60 Hz, 1 cycle)	220 A (60 Hz, 1 cycle)	440 A (60 Hz, 1 cycle)		150 A (60 Hz, 1 cycle)	220 A (60 Hz, 1 cycle)	440 A (60 Hz, 1 cycle)	
Permissible I ² t (half 60-Hz wave)	121 A ² s	260 A ² s	1,260 A ² s		128 A ² s	1,350 A ² s		6,600 A ² s
Applicable load (with Class-1 AC resistive load)	3 kW (at 200 VAC)	5 kW (at 200 VAC)	7 kW (at 200 VAC)	9 kW (at 200 VAC)	6 kW max. (at 400 VAC)	10 kW max. (at 400 VAC)	14 kW max. (at 400 VAC)	18 kW max. (at 400 VAC)

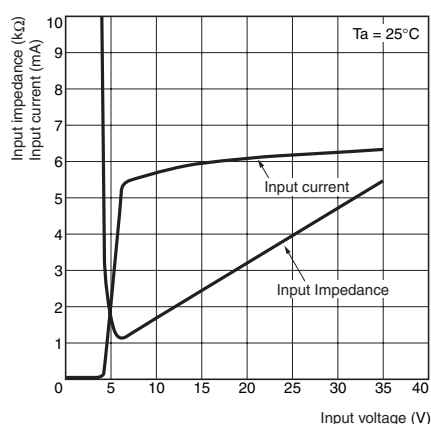
Note: The applicable load current varies depending on the ambient temperature. For details, refer to *Load Current vs. Ambient Temperature* in Engineering Data.

■ Characteristics

Item	G3PB-215B-VD	G3PB-225B-VD	G3PB-235B-VD	G3PB-245B-VD	G3PB-515B-VD	G3PB-525B-VD	G3PB-535B-VD	G3PB-545B-VD
Operate time	1/2 of load power source cycle + 1 ms max.							
Release time	1/2 of load power source cycle + 1 ms max.							
Output ON voltage drop	1.6 V (RMS) max.				1.8 V (RMS) max.			
Leakage current	10 mA max. (at 200 VAC)				20 mA max. (at 480 VAC)			
Insulation resistance	100 MΩ min. (at 500 VDC)							
Dielectric strength	2,500 VAC, 50/60 Hz for 1 min							
Vibration resistance	Destruction: 10 to 55 to 10 Hz, 0.375-mm single amplitude (Mounted to DIN track)							
Shock resistance	Destruction: 294 m/s ² (DIN track mounting)							
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	UL508 CSA22.2 No. 14 EN60947-4-3				CSA22.2 No. 14 EN60947-4-3			
EMC	Emission: EN55011 Group 1 Class B Immunity: EN61000-6-2							
Weight	Approx. 240 g		Approx. 400 g		Approx. 240 g		Approx. 400 g	

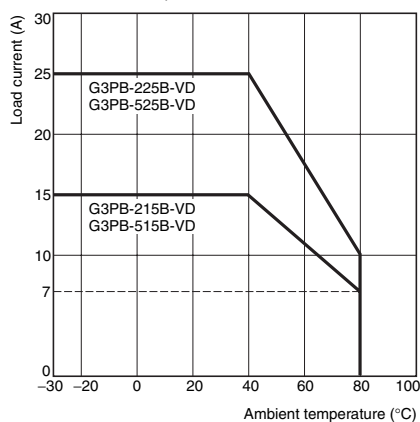
Engineering Data

Input Voltage vs. Input Impedance and Input Voltage vs. Input Current

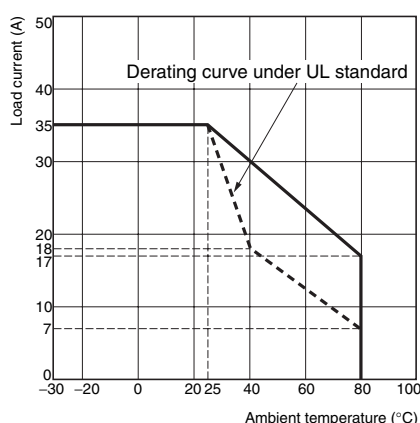
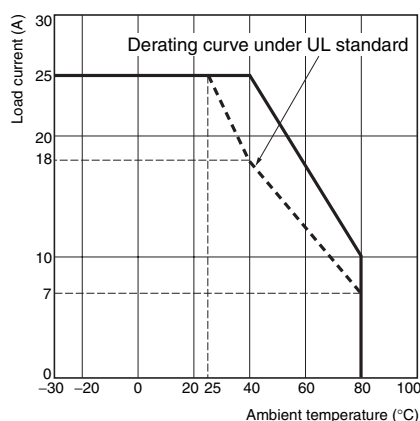
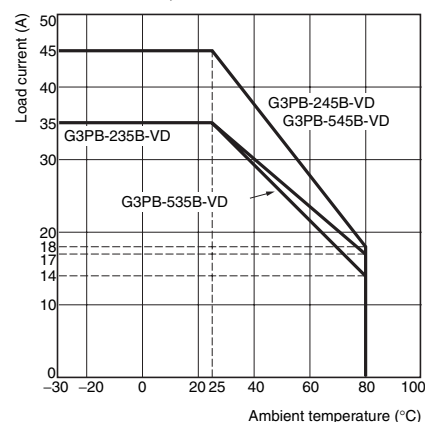


Load Current vs. Ambient Temperature

G3PB-215B-VD, PB-225B-VD
G3PB-515B-VD, G3PB-525B-VD



G3PB-235B-VD, PB-245B-VD
G3PB-535B-VD, G3PB-545B-VD

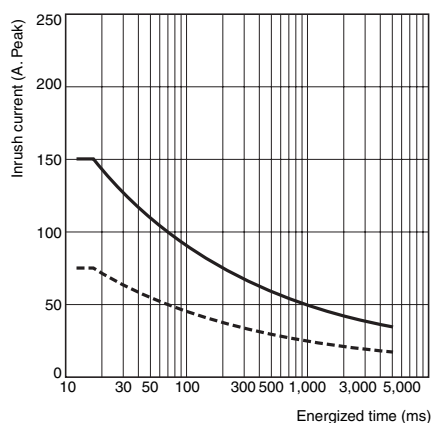


- Note:**
1. Please use proper ventilation and cooling as recommended by the instruction sheet packaged with the product.
 2. Please note that the derating curve above 18 A is applicable under the UL standard only with forced air cooling by fan.

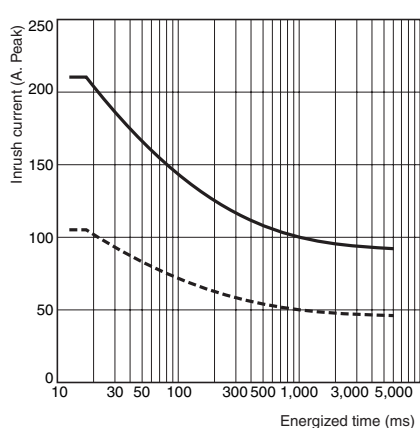
One Cycle Surge Current: Non-repetitive

Keep the inrush current to below the inrush current resistance value (i.e., below the broken line) if it occurs repetitively.

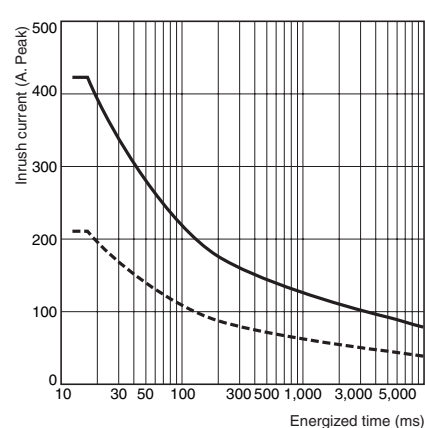
G3PB-215B-VD, G3PB-515B-VD



G3PB-225B-VD, G3PB-525B-VD

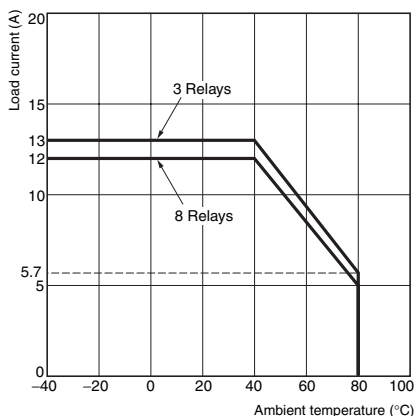


G3PB-235B-VD, G3PB-245B-VD
G3PB-535B-VD, G3PB-545B-VD

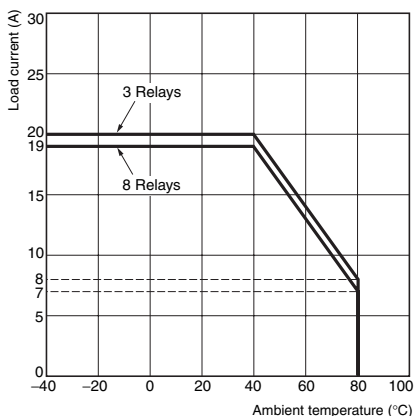


Close Mounting (3 or 8 Relays) (Refer to Safety Precautions for All G3PB Models.)

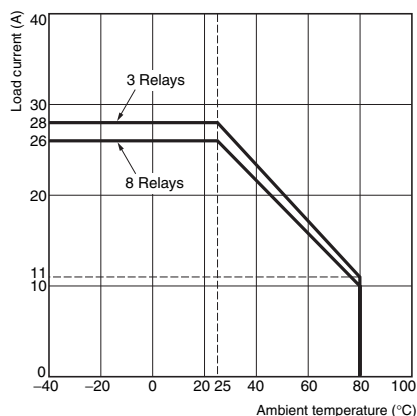
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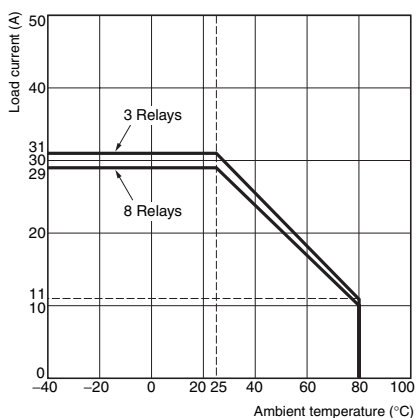
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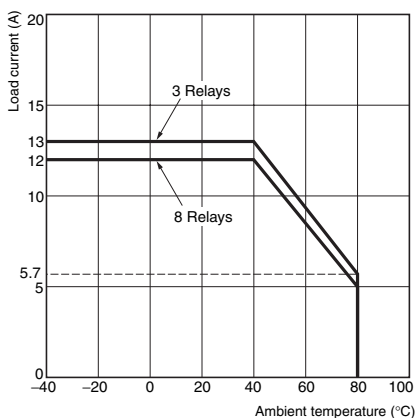
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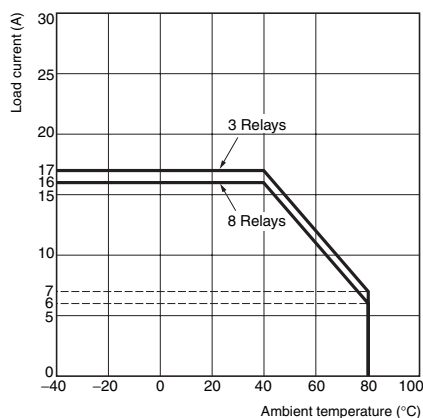
G3PB-245B-VD



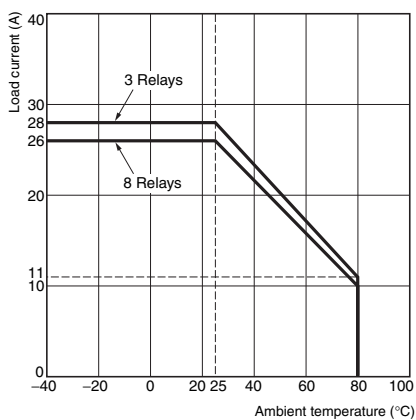
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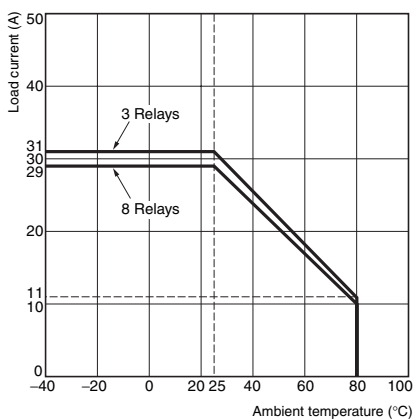
G3PB-525B-VD



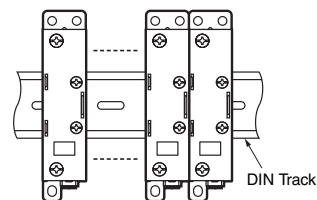
G3PB-535B-VD



G3PB-545B-VD



Example of Close Mounting for G3PB-525B-VD

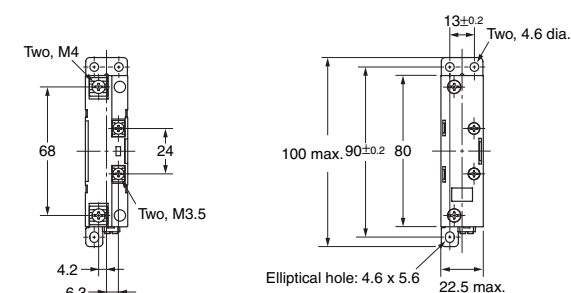
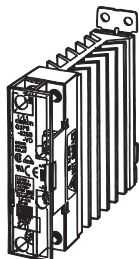


Note: Close mounting of 3 Relays:
7 A at an ambient temperature of 80°C.
Close mounting of 8 Relays:
6 A at an ambient temperature of 80°C.

Dimensions

Note: All units are in millimeters unless otherwise indicated.

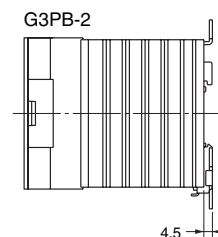
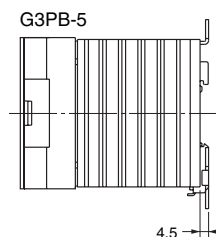
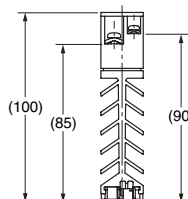
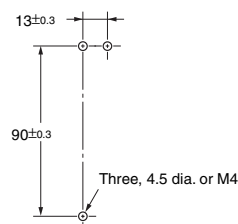
G3PB-215B-VD
G3PB-225B-VD
G3PB-515B-VD
G3PB-525B-VD



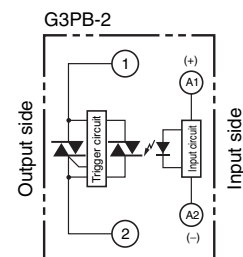
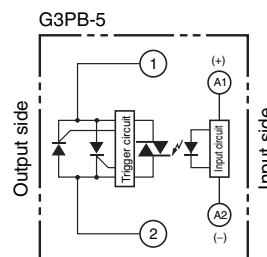
Note: Without terminal cover.

Note: With terminal cover.

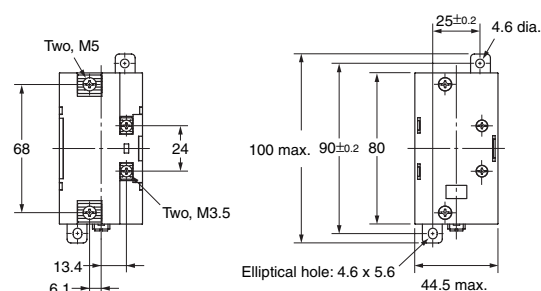
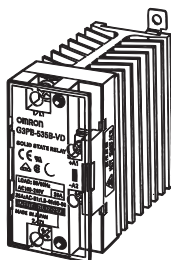
Mounting Holes



Terminal Arrangement/Internal Circuit Diagram



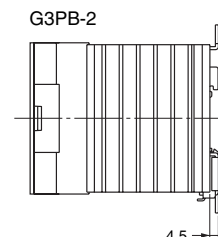
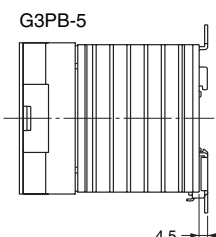
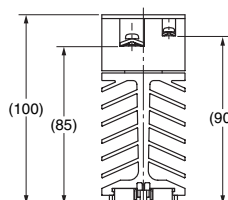
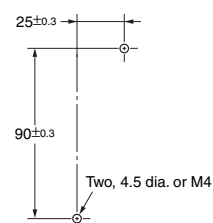
G3PB-235B-VD
G3PB-245B-VD
G3PB-535B-VD
G3PB-545B-VD



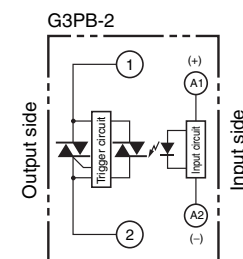
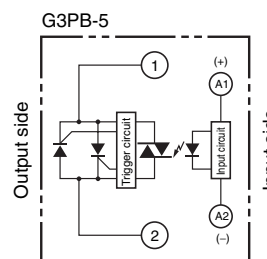
Note: Without terminal cover.

Note: With terminal cover.

Mounting Holes



Terminal Arrangement/Internal Circuit Diagram

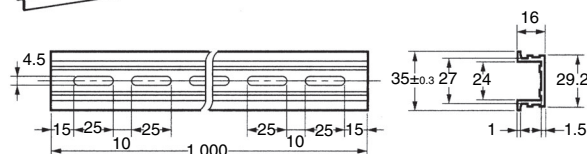
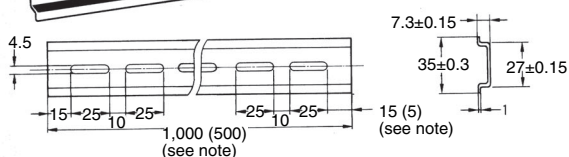
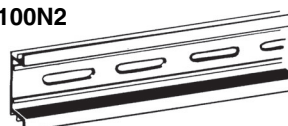


Accessories (Order Separately)

Mounting Tracks

PFP-100N, PFP-50N

PFP-100N2



Note: Values in parentheses indicate dimensions for the PFP-50N.

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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DIMENSIONS AND WEIGHTS

Dimensions and weights are nominal and are not to be used for manufacturing purposes, even when tolerances are shown.

PERFORMANCE DATA

Performance data given in this catalog is provided as a guide for the user in determining suitability and does not constitute a warranty. It may represent the result of OMRON's test conditions, and the users must correlate it to actual application requirements. Actual performance is subject to the OMRON Warranty and Limitations of Liability.

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2008.11

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[G3PB-215B-2-VD DC12-24](#) [G3PB-215B-3-VD DC12-24](#) [G3PB-225B-2H-VD DC12-24](#) [G3PB-225B-2N-VD DC12-24](#)
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[G3PB-245B-3H-VD DC12-24](#) [G3PB-245B-3-VD DC12-24](#) [G3PB-415B-2H-VD DC12-24](#) [G3PB-415B-2-VD DC12-24](#)
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