

# Solid State Relays (Single-phase)

# G3PB

## 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)

**Note:** 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	Dimensions	Part Number
	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 <sup>2</sup> t (half 60-Hz wave)	121 A <sup>2</sup> s	260 A <sup>2</sup> s	1,260 A <sup>2</sup> s		128 A <sup>2</sup> s	1,350 A <sup>2</sup> s		6,600 A <sup>2</sup> 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.

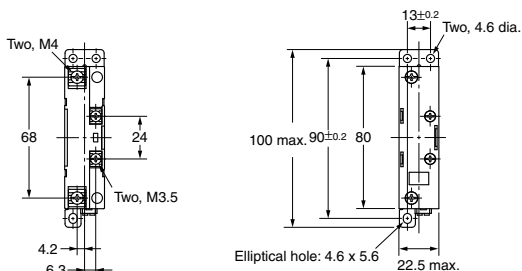
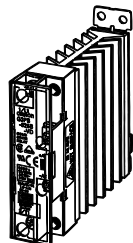
## ■ Characteristics

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 <sup>2</sup> (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	

# Dimensions

Note: All units are in millimeters unless otherwise indicated.

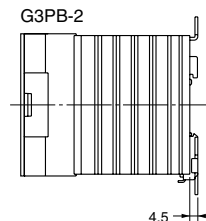
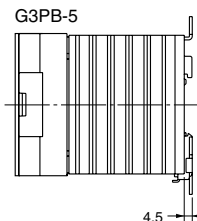
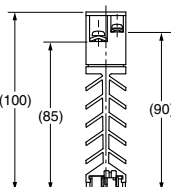
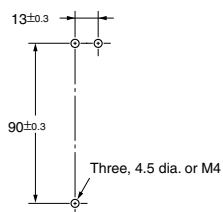
G3PB-215B-VD  
G3PB-225B-VD  
G3PB-515B-VD  
G3PB-525B-VD



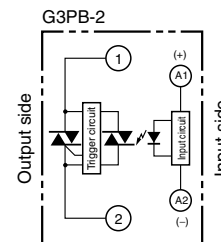
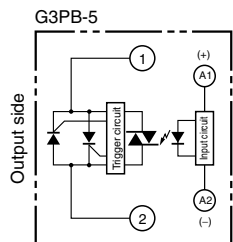
Note: Without terminal cover.

Note: With terminal cover.

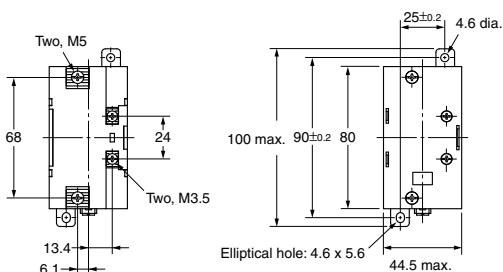
### Mounting Holes



### Terminal Arrangement/Internal Circuit Diagram



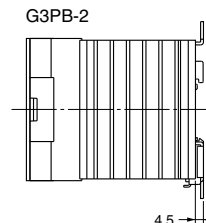
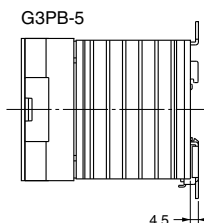
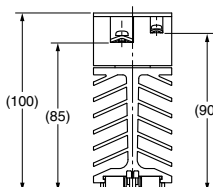
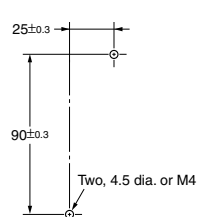
G3PB-235B-VD  
G3PB-245B-VD  
G3PB-535B-VD  
G3PB-545B-VD



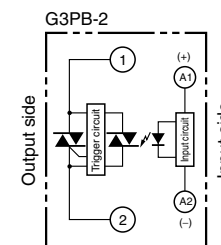
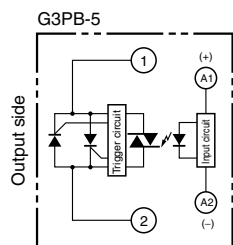
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### Mounting Holes



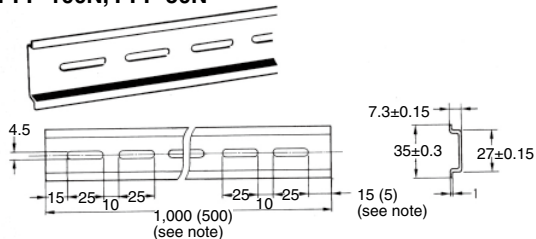
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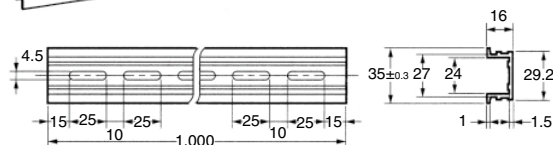
## Accessories (Order Separately)

### Mounting Tracks

PFP-100N, PFP-50N



PFP-100N2



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