


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 | Dimensions | Part Number |
|----------------|------------------------|-------------|
| | 50 cm (1) x 7.3 mm (t) | PPF-50N |
| | 1 m (1) x 7.3 mm (t) | PPF-100N |
| | 1 m (1) x 16 mm (t) | PPF-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) |

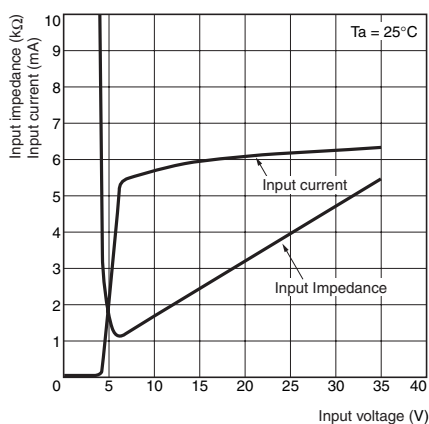
Note: The applicable load current varies depending on the ambient temperature. For details, refer to *Load Current vs. Ambient Temperature* in Engineering Data.

■ 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 | |

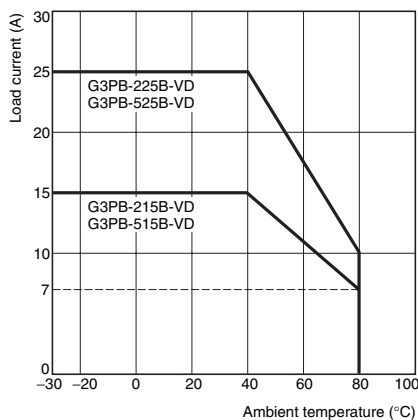
Engineering Data

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

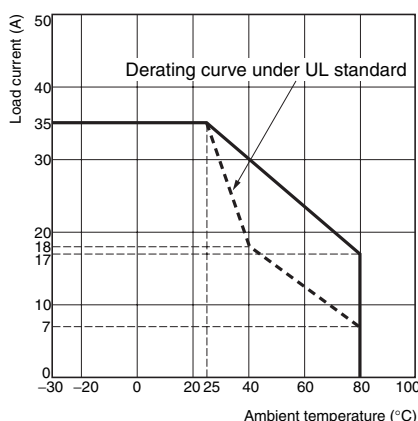
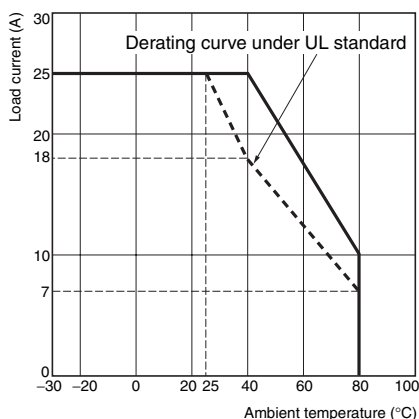
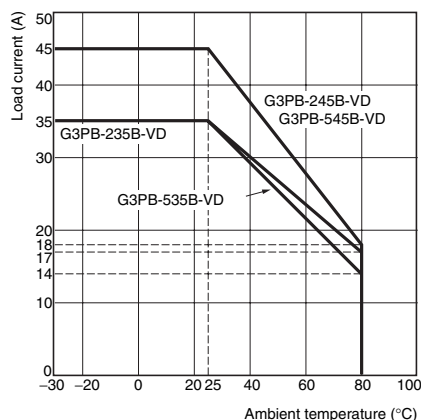


Load Current vs. Ambient Temperature

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



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

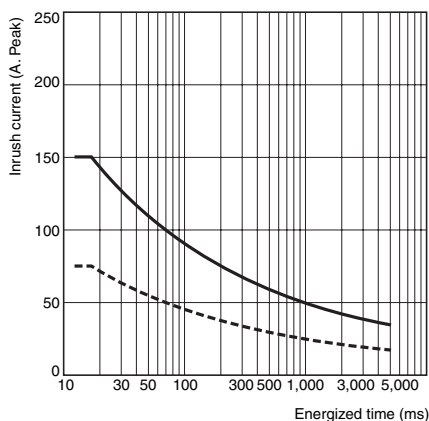


- Note: 1.** Please use proper ventilation and cooling as recommended by the instruction sheet packaged with the product.
- 2.** Please note that the derating curve above 18 A is applicable under the UL standard only with forced air cooling by fan.

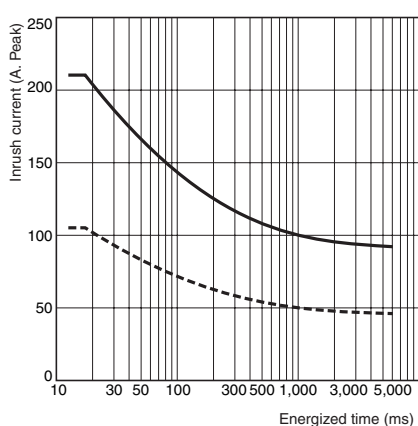
One Cycle Surge Current: Non-repetitive

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

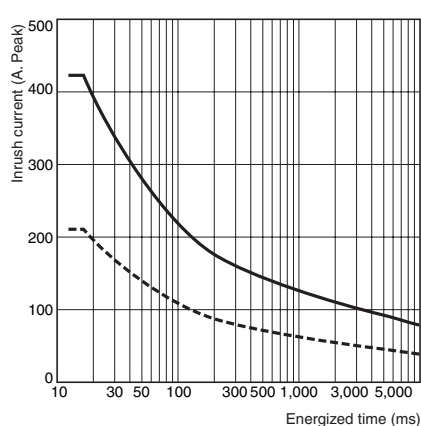
G3PB-215B-VD, G3PB-515B-VD



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

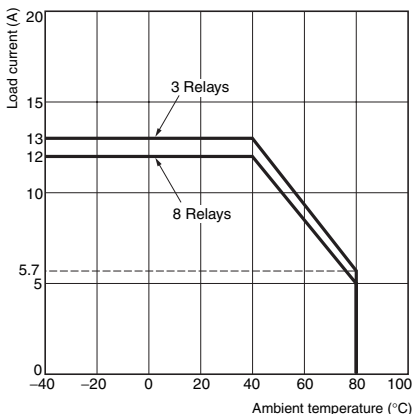


G3PB-235B-VD, G3PB-245B-VD
G3PB-535B-VD, G3PB-545B-VD

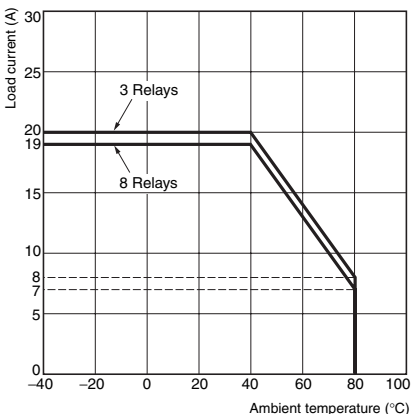


Close Mounting (3 or 8 Relays) (Refer to Safety Precautions for All G3PB Models.)

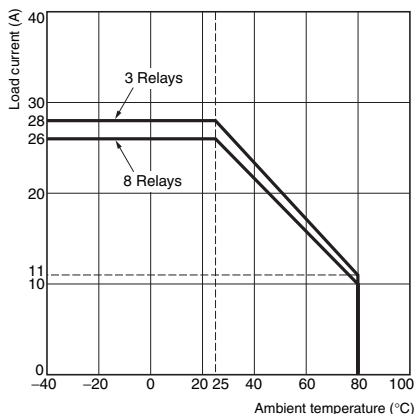
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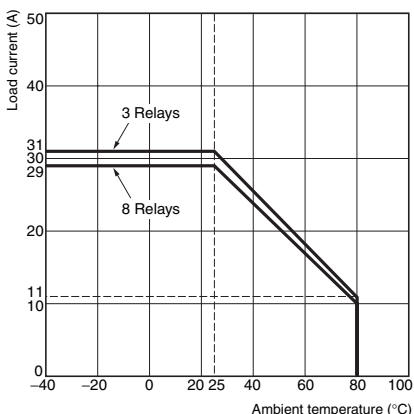
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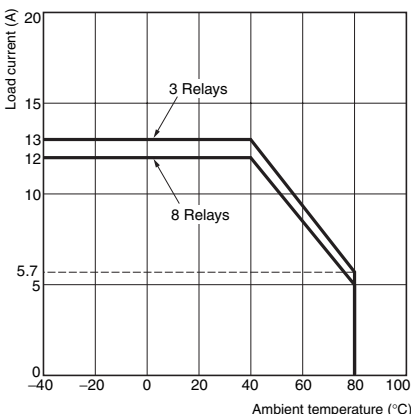
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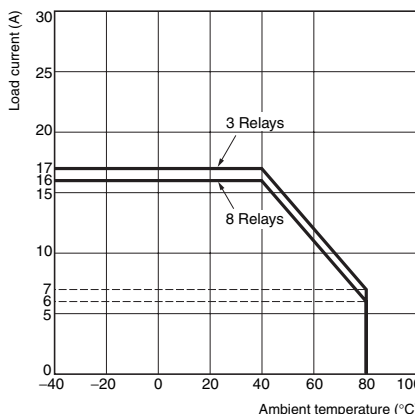
G3PB-245B-VD



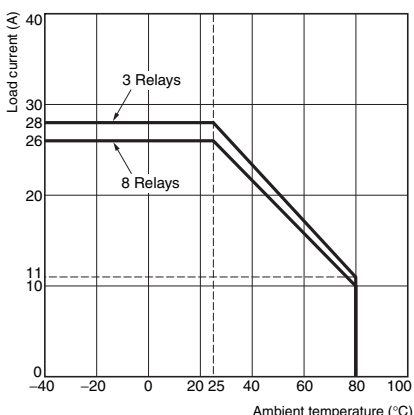
G3PB-515B-VD



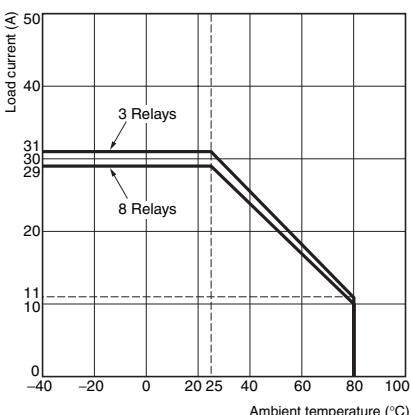
G3PB-525B-VD



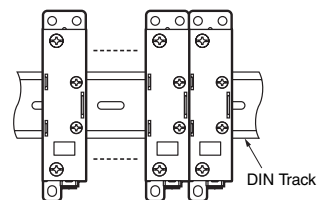
G3PB-535B-VD



G3PB-545B-VD



Example of Close Mounting for G3PB-525B-VD

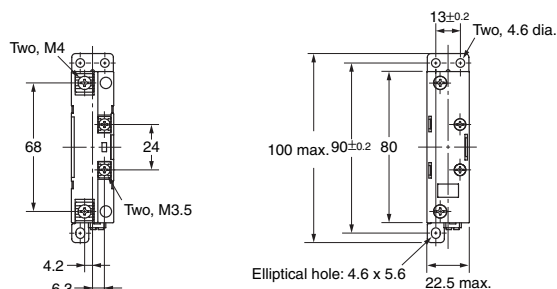
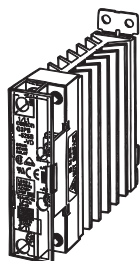


Note: Close mounting of 3 Relays:
7 A at an ambient temperature of 80°C.
Close mounting of 8 Relays:
6 A at an ambient temperature of 80°C.

Dimensions

Note: All units are in millimeters unless otherwise indicated.

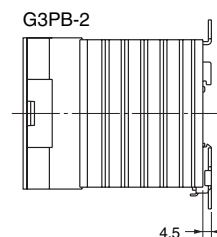
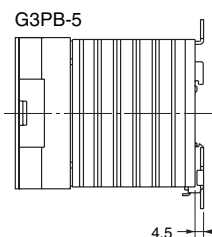
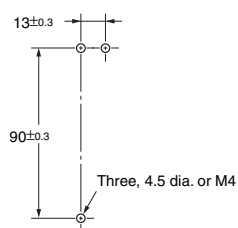
G3PB-215B-VD
G3PB-225B-VD
G3PB-515B-VD
G3PB-525B-VD



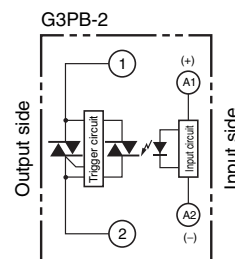
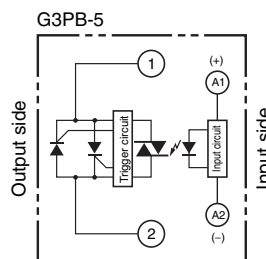
Note: Without terminal cover.

Note: With terminal cover.

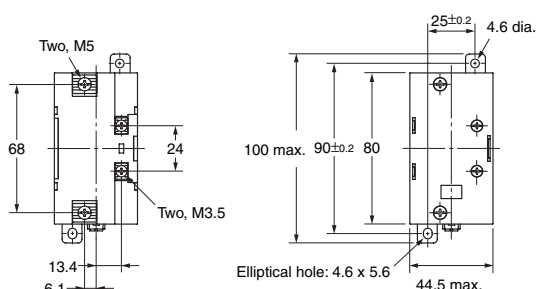
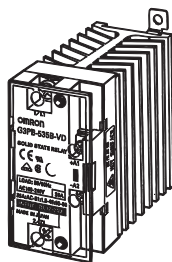
Mounting Holes



Terminal Arrangement/Internal Circuit Diagram



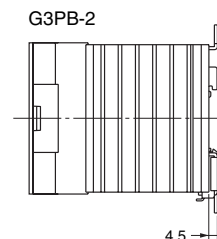
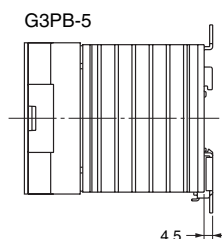
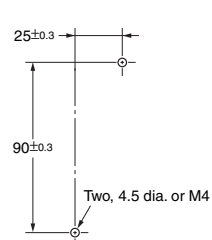
G3PB-235B-VD
G3PB-245B-VD
G3PB-535B-VD
G3PB-545B-VD



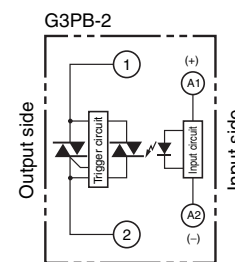
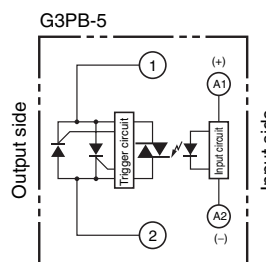
Note: Without terminal cover.

Note: With terminal cover.

Mounting Holes



Terminal Arrangement/Internal Circuit Diagram

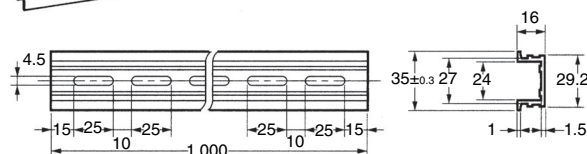
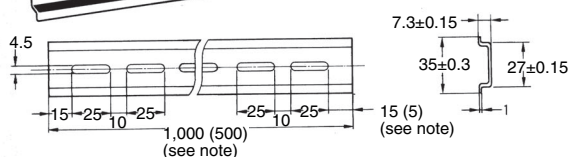
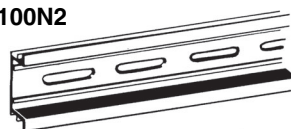


Accessories (Order Separately)

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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