Solid State Relays for Heaters G3PE-Single-phase

CSM_G3PE-Single-phase_DS_E_2_1

Compact, Slim-profile SSRs with Heat Sinks. Models with No Zero Cross for a Wide Range of Applications.

- RoHS compliant.
- Models also available with no zero cross
- Surge pass protection improved surge dielectric strength for output currents. (OMRON testing)
- Compact with a slim profile.
- Mount to DIN Track or with screws.
- Conforms to UL, CSA, and EN standards (TÜV certification).



Refer to Safety Precautions for All G3PE Models.

Ordering Information

List of Models

| Number of phases | Insulation method | Operation indicator | Rated input voltage | Zero cross function | Applicable load * | Model |
|------------------|-----------------------|------------------------|---------------------|------------------------|----------------------|--------------------|
| | | Yes (yellow) | 12 to 24 VDC | Yes | 15 A, 100 to 240 VAC | G3PE-215B DC12-24 |
| | | | | | 25 A, 100 to 240 VAC | G3PE-225B DC12-24 |
| | | | | | 35 A, 100 to 240 VAC | G3PE-235B DC12-24 |
| | | | | | 45 A, 100 to 240 VAC | G3PE-245B DC12-24 |
| | | | | No | 15 A, 100 to 240 VAC | G3PE-215BL DC12-24 |
| | Phototriac coupler | | | | 25 A, 100 to 240 VAC | G3PE-225BL DC12-24 |
| | | | | | 35 A, 100 to 240 VAC | G3PE-235BL DC12-24 |
| Cingle phone | | | | | 45 A, 100 to 240 VAC | G3PE-245BL DC12-24 |
| Single-phase | | | | Yes | 15 A, 200 to 480 VAC | G3PE-515B DC12-24 |
| | | | | | 25 A, 200 to 480 VAC | G3PE-525B DC12-24 |
| | | | | | 35 A, 200 to 480 VAC | G3PE-535B DC12-24 |
| | | | | | 45 A, 200 to 480 VAC | G3PE-545B DC12-24 |
| | | | | No | 15 A, 200 to 480 VAC | G3PE-515BL DC12-24 |
| | | | | | 25 A, 200 to 480 VAC | G3PE-525BL DC12-24 |
| | | | | | 35 A, 200 to 480 VAC | G3PE-535BL DC12-24 |
| | | | | | 45 A, 200 to 480 VAC | G3PE-545BL DC12-24 |

* The applicable load current depends on the ambient temperature. For details, refer to Load Current vs. Ambient Temperature in Engineering Data on page 3.

Specifications

Certification

UL508, CSA22.2 No.14, and EN60947-4-3

Ratings

Input (at an Ambient Temperature of 25°C)

| Ite | em | Rated voltage | Operating voltage | Rated input current | Voltage level | | |
|-----------|----|---------------|-------------------|---------------------|----------------------|----------------------|--|
| Model | | naleu vollage | range | nateu input current | Must operate voltage | Must release voltage | |
| G3PE- | | 12 to 24 VDC | 9.6 to 30 VDC | 7 mA max. | 9.6 VDC max. | 1.0 VDC max. | |
| G3PE-DDBL | | 12 10 24 VDG | 9.0 10 30 VDC | 15 mA max. | 9.6 VDC max. | | |

Output

| Model | G3PE-215B(L) | G3PE-225B(L) | G3PE-235B(L) | G3PE-245B(L) | G3PE-515B(L) | G3PE-525B(L) | G3PE-535B(L) | G3PE-545B(L) |
|---|------------------------------|------------------------------|---------------------------|--------------------------|------------------------------|------------------------------|--------------------------|--------------------------|
| Rated load voltage | | 100 to 240 VA | AC (50/60 Hz) | | | 200 to 480 V | AC (50/60 Hz) | |
| Load voltage range | 75 to 264 VAC (50/60 Hz) | | | | 180 to 528 VAC (50/60 Hz) | | | |
| Applicable load current | 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 | 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) | | 0 A 1 cycle) |
| Permissible l ² t (reference value) | 121A ² s | 260A ² s | 1,260A ² s | | 128A ² s | 1,350A ² s | | 6,600A²s |
| Applicable load (resistive load) | 3 kW (at 200 VAC) | 5 kW (at 200 VAC) | 7 kW (at 200 VAC) | 9 kW (at 200 VAC) | 6 kW (at 400 VAC) | 10 kW (at 400 VAC) | 14 kW (at 400 VAC) | 18 kW (at 400 VAC) |

* The applicable load current depends on the ambient temperature. For details, refer to Load Current vs. Ambient Temperature in Engineering Data on page 3.

Characteristics

| Model Item | G3PE -215B | G3PE -225B | G3PE -235B | G3PE -245B | G3PE -215BL | G3PE -225BL | G3PE -235BL | G3PE -245BL |
|-------------------------------|--|---|---------------|---------------|----------------|----------------|----------------|----------------|
| Operate time | 1/2 of load power source cycle + 1 ms max. 1 ms max. | | | | | | | |
| Release time | 1/2 of load powe | /2 of load power source cycle + 1 ms max. | | | | | | |
| Output ON voltage drop | 1.6 V (RMS) ma | .6 V (RMS) max. | | | | | | |
| Leakage current | 10 mA max. (at | 0 mA max. (at 200 VAC) | | | | | | |
| Insulation resistance | 100 M Ω min. (at | 00 MΩ min. (at 500 VDC) | | | | | | |
| Dielectric strength | 2,500 VAC, 50/6 | 2,500 VAC, 50/60 Hz for 1 min | | | | | | |
| Vibration resistance | 10 to 55 to 10 Hz | 10 to 55 to10 Hz, 0.375-mm single amplitude (0.75-mm double amplitude) (Mounted to DIN track) | | | | | | |
| Shock resistance | Destruction: 294 | Destruction: 294 m/s ² (Mounted to DIN track) | | | | | | |
| Ambient storage temperature | –30 to 100°C (w | –30 to 100°C (with no icing or condensation) | | | | | | |
| Ambient operating temperature | –30 to 80°C (with no icing or condensation) | | | | | | | |
| Ambient operating humidity | 45% to 85% | | | | | | | |
| Weight | Approx. 240 g | Approx. 240 g Approx. 400 g Approx. 240 g Approx. 400 g | | | | | | |

| Model Item | G3PE -515B | G3PE -525B | G3PE -535B | G3PE -545B | G3PE -515BL | G3PE -525BL | G3PE -535BL | G3PE -545BL |
|-------------------------------|---|---|---------------|---------------|----------------|----------------|----------------|----------------|
| Operate time | 1/2 of load power source cycle + 1 ms max. 1 ms max. | | | | | | | |
| Release time | 1/2 of load powe | /2 of load power source cycle + 1 ms max. | | | | | | |
| Output ON voltage drop | 1.8 V (RMS) ma | .8 V (RMS) max. | | | | | | |
| Leakage current | 20 mA max. (at | 0 mA max. (at 480 VAC) | | | | | | |
| Insulation resistance | 100 M Ω min. (at | 00 MΩ min. (at 500 VDC) | | | | | | |
| Dielectric strength | 2,500 VAC, 50/6 | 2,500 VAC, 50/60 Hz for 1 min | | | | | | |
| Vibration resistance | 10 to 55 to 10 Hz | 10 to 55 to10 Hz, 0.375-mm single amplitude (0.75-mm double amplitude) (Mounted to DIN track) | | | | | | |
| Shock resistance | Destruction: 294 | Destruction: 294 m/s ² (Mounted to DIN track) | | | | | | |
| Ambient storage temperature | –30 to 100°C (w | –30 to 100°C (with no icing or condensation) | | | | | | |
| Ambient operating temperature | –30 to 80°C (with no icing or condensation) | | | | | | | |
| Ambient operating humidity | 45% to 85% | | | | | | | |
| Weight | Approx. 240 g Approx. 400 g Approx. 240 g Approx. 400 g | | | | | | | |

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Input impedance

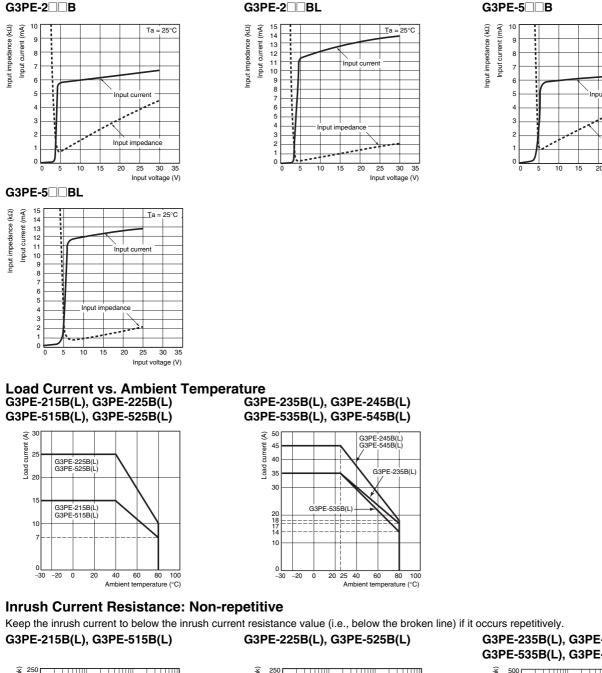
Input voltage (V)

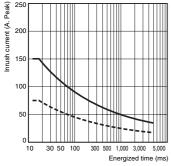
25 30 35

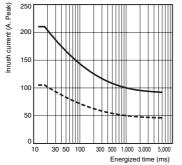
Ta = 25°C

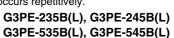
Engineering Data

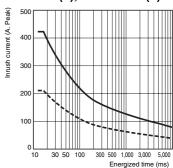
Input Voltage vs. Input Impedance and Input Voltage vs. Input Current G3PE-2 G3PE-2 BL

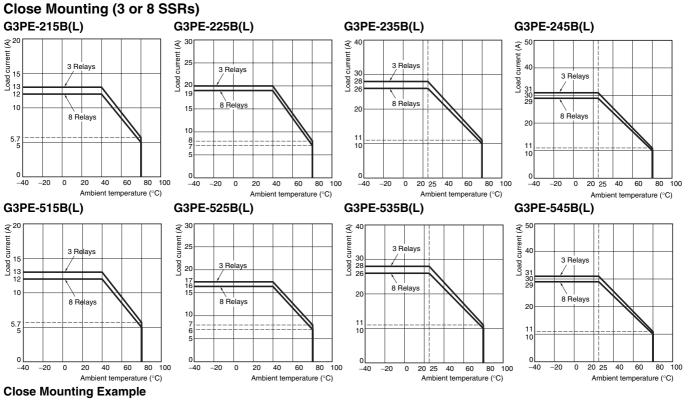


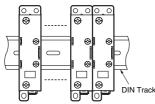












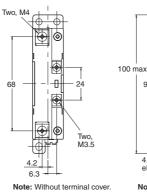
Dimensions

Note: All units are in millimeters unless otherwise indicated.

Solid State Relays

G3PE-215B(L) G3PE-225B(L) G3PE-515B(L) G3PE-525B(L)



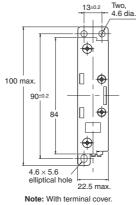


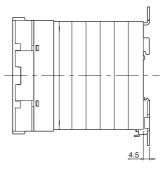
Mounting Holes

90±0.3

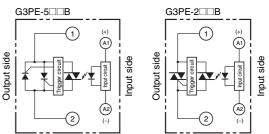
13±0.3

Three, 4.5 dia. or M4

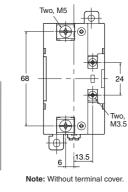




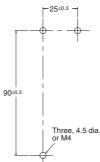
Terminal Arrangement/Internal Circuit Diagram

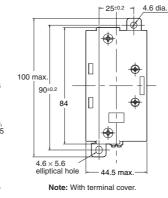












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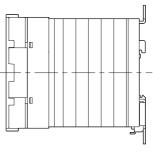
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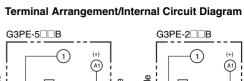
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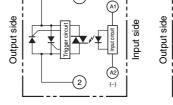
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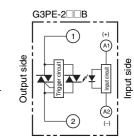
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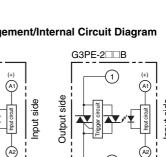
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