# 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 <sup>2</sup> t (reference value)	121A <sup>2</sup> s	260A <sup>2</sup> s	1,260A <sup>2</sup> s		128A <sup>2</sup> s	1,350A <sup>2</sup> 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 $\Omega$ 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 <sup>2</sup> (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 $\Omega$ 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 <sup>2</sup> (Mounted to DIN track)						
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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

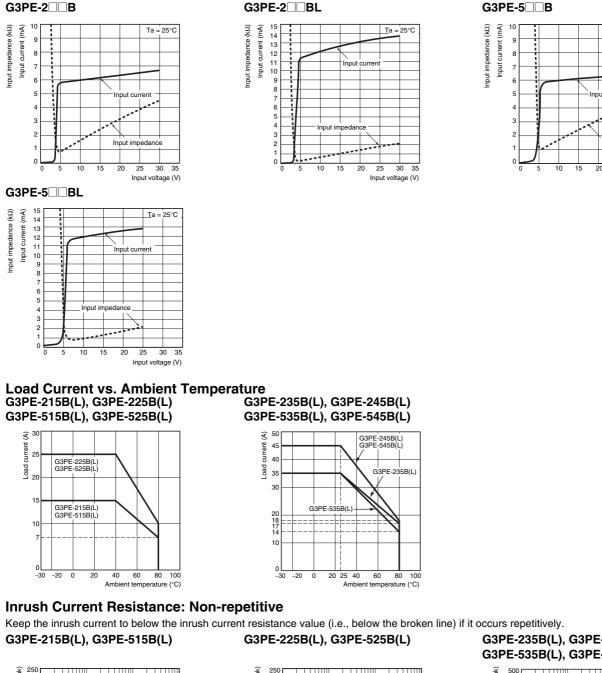
Input voltage (V)

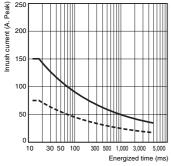
25 30 35

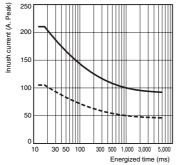
Ta = 25°C

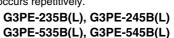
# **Engineering Data**

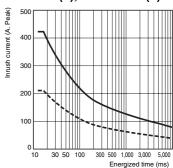
#### Input Voltage vs. Input Impedance and Input Voltage vs. Input Current G3PE-2 G3PE-2 BL

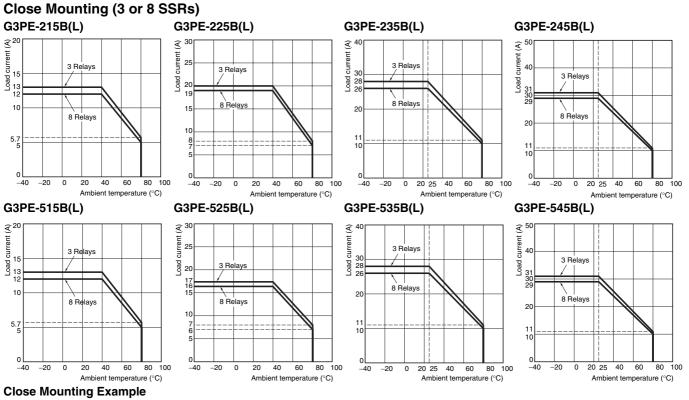


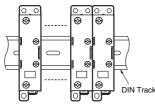












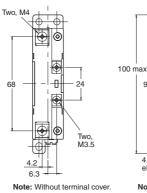
# **Dimensions**

Note: All units are in millimeters unless otherwise indicated.

### **Solid State Relays**

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



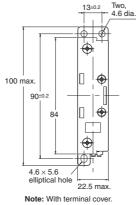


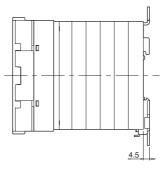
Mounting Holes

90±0.3

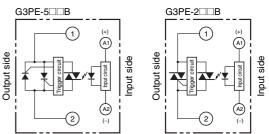
13±0.3

Three, 4.5 dia. or M4

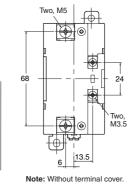




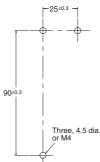
Terminal Arrangement/Internal Circuit Diagram

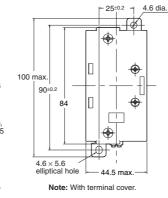












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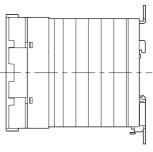
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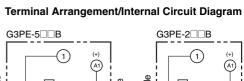
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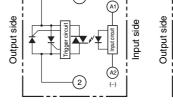
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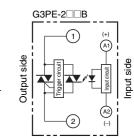
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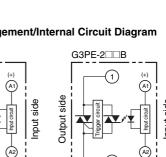
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