

# Solid-state Relay G3NE

## Compact, Low-cost, SSR Switching 5 to 20 A

- Wide load voltage range: 75 to 264 VAC. Both 100-V and 200-V loads can be handled with the same model.
- Dedicated, compact aluminum PCB and power elements used.
- Built-in varistor effectively absorbs external surges.
- Quick-connect #110 input terminals and #250 output connections.
- UL, CSA, and IEC/EN (TÜV) approval obtained for “-US” models.



## Ordering Information

### List of Models

Isolation	Zero cross function	Indicator	Rated output load	Rated input voltage	Model
Phototriac	Yes	No	5 A at 100 to 240 VAC	5, 12, 24 VDC	G3NE-205T
			10 A at 100 to 240 VAC		G3NE-205T-US
			20 A at 100 to 240 VAC		G3NE-205T-2-US
	No		5 A at 100 to 240 VAC		G3NE-210T
			10 A at 100 to 240 VAC		G3NE-210T-US
			20 A at 100 to 240 VAC		G3NE-210T-2-US
			5 A at 100 to 240 VAC		G3NE-220T
			10 A at 100 to 240 VAC		G3NE-220T-US
			20 A at 100 to 240 VAC		G3NE-220T-2-US
No	No	5 A at 100 to 240 VAC	G3NE-205TL		
		10 A at 100 to 240 VAC	G3NE-205TL-US		
		20 A at 100 to 240 VAC	G3NE-205TL-2-US		
		5 A at 100 to 240 VAC	G3NE-210TL		
		10 A at 100 to 240 VAC	G3NE-210TL-US		
		20 A at 100 to 240 VAC	G3NE-210TL-2-US		
No	No	5 A at 100 to 240 VAC	G3NE-220TL		
		10 A at 100 to 240 VAC	G3NE-220TL-US		
		20 A at 100 to 240 VAC	G3NE-220TL-2-US		

Note: When ordering, specify the input voltage.

### Accessories (Order Separately)

#### Heat Sinks

The following heat sinks are thin and can be DIN-track mounted. See *Dimensions* for details.

Model	Applicable SSR
Y92B-N50	G3NE-205T(L)(-2)(-US)/-210T(L)(-2)(-US)
Y92B-N100	G3NE-220T(L)(-2)(-US)

## Specifications

### Ratings

#### Input

Rated voltage	Operating voltage	Voltage level		Input impedance	
		Must operate	Must release	With zero cross function	Without zero cross function
5 VDC	4 to 6 VDC	4 VDC max.	1 VDC min.	250 Ω±20%	300 Ω±20%
12 VDC	9.6 to 14.4 VDC	9.6 VDC max.		600 Ω±20%	800 Ω±20%
24 VDC	19.2 to 28.8 VDC	19.2 VDC max.		1.6 kΩ±20%	

Note: Each model has 5-VDC, 12-VDC, and 24-VDC input versions.

## Output

Model	Applicable load				
	Rated load voltage	Load voltage range	Load current (See note 1.)		Inrush current
			With heat sink	Without heat sink	
G3NE-205T(L)-(-2)(US)	100 to 240 VAC	75 to 264 VAC	0.1 to 5 A	0.1 to 5 A	60 A (60 Hz, 1 cycle)
G3NE-210T(L)-(-2)(US)			0.1 to 10 A (See note 2.)	0.1 to 5 A	150 A (60 Hz, 1 cycle)
G3NE-220T(L)-(-2)(US)			0.1 to 20 A (See note 2.)	0.1 to 5 A	220 A (60 Hz, 1 cycle)

**Note:** 1. The load current varies depending on the ambient temperature. Refer to *Load Current vs. Ambient Temperature* under *Engineering Data* for details.

2. These values apply when using a dedicated radiator or a radiation plate of specified size.

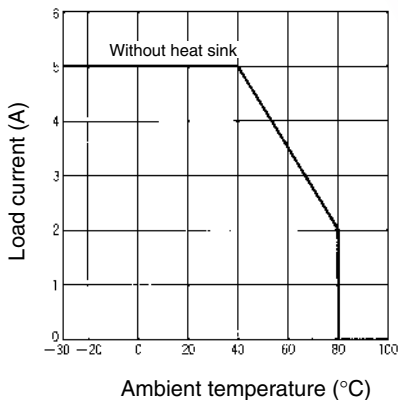
## Characteristics

Item	G3NE-2□□T(-2)(US)	G3NE-2□□TL(-2)(US)
Operate time	1/2 of load power source cycle + 1 ms max.	1 ms max.
Release time	1/2 of load power source cycle + 1 ms max.	
Output ON voltage drop	1.6 V (RMS) max.	
Leakage current	2 mA max. (at 100 VAC) 5 mA max. (at 200 VAC)	
Insulation resistance	100 MΩ min. (at 500 VDC)	
Dielectric strength	2,000 VAC, 50/60 Hz for 1 min	
Vibration resistance	Destruction: 10 to 55 to 10 Hz, 0.75-mm single amplitude (1.5-mm double amplitude)	
Shock resistance	Destruction: 1,000 m/s <sup>2</sup>	
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%	
Approved standards (only for -US models)	UL508 File No. E64562/CSA C22.2 (No.0, No.14) File No. LR35535 TÜV R9051064 (VDE0435) (EN60950)	
Weight	Approx. 37 g	

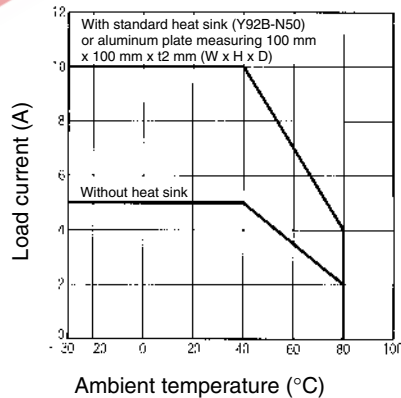
## Engineering Data

### Load Current vs. Ambient Temperature

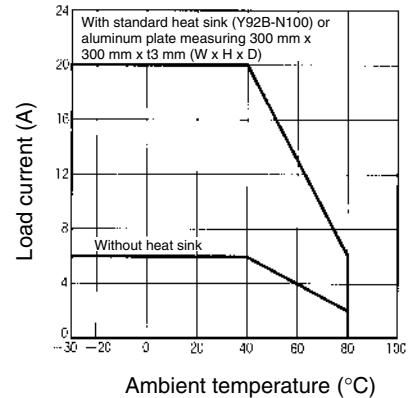
G3NE-205T(L)-(-2)(US)



G3NE-210T(L)-(-2)(US)



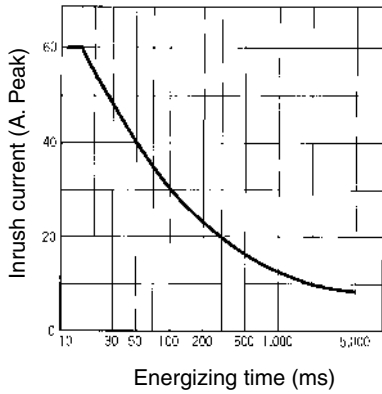
G3NE-220T(L)-(-2)(US)



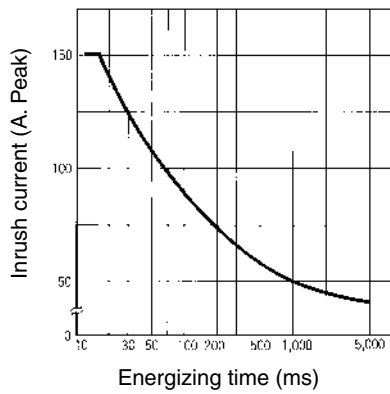
## Inrush Current Resistivity: Non-repetitive

**Note:** Keep the inrush current to half the rated value if it occurs repetitively.

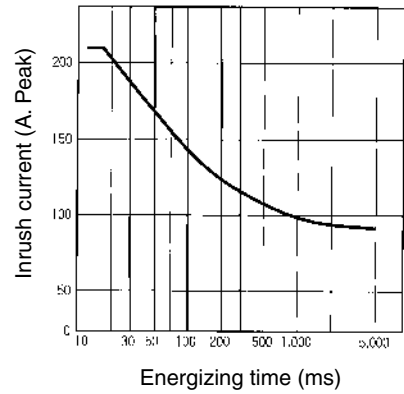
G3NE-205T(L)-(-2)(US)



G3NE-210T(L)-(-2)(US)



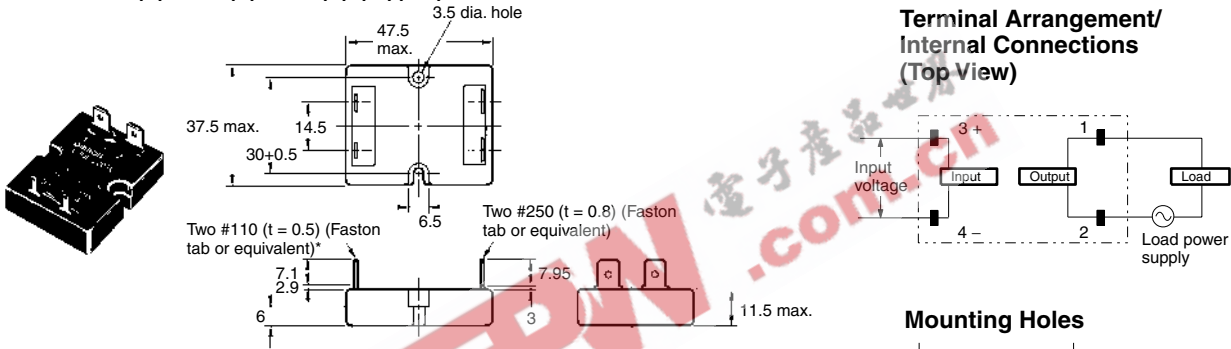
G3NE-220T(L)-(-2)(US)



## Dimensions

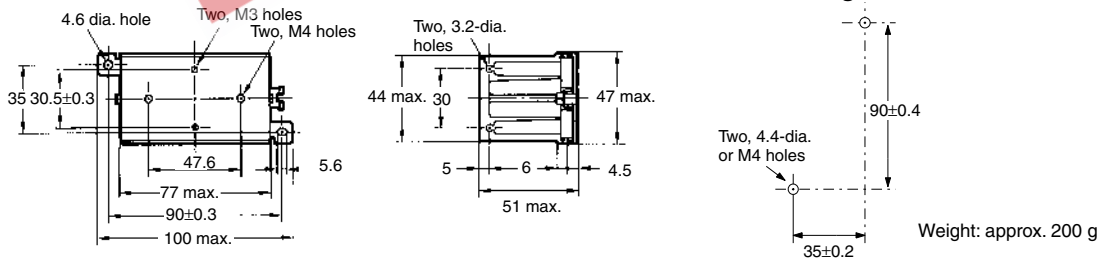
**Note:** All units are in millimeters unless otherwise indicated.

G3NE-205T(L)/210T(L)/220T(L)-(-2)(US)

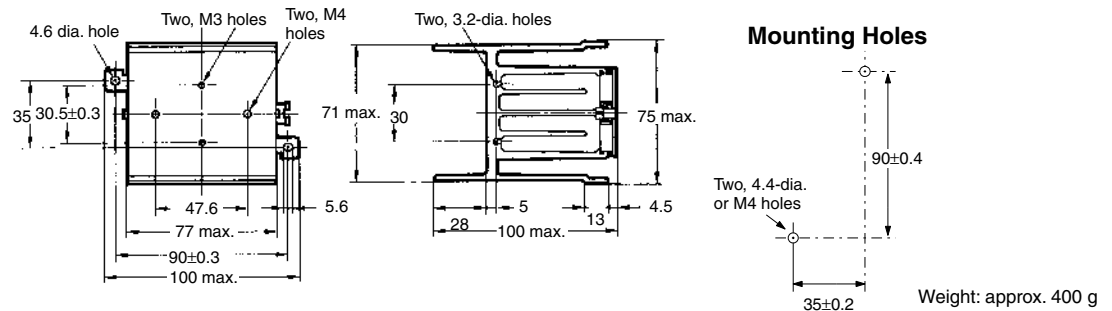


\* G3NE-2□□T(L)-2-US: Two, #187 (t=0.5) (Faston tab or equivalent)

Heat Sink  
Y92B-N50



Y92B-N100



SSR

# Precautions

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Refer to the *Technical Information for SSRs* (Cat. No. J137) for general precautions.

## ■ Correct Use

Do not apply excessive force to the terminals. Exercise care when pulling or inserting the terminal clips for the Quick Connector (QC).

When attaching a heat sink to the G3NE, in order to facilitate heat dissipation, apply heat conductive grease on the heat sink. Tighten the mounting screws of the heat sink with a torque of 0.59 to 0.98 N·m.

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ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

Cat. No. K062-E1-03

In the interest of product improvement, specifications are subject to change without notice.