

# Solid State Relays G3NE

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

- Wide load voltage range: 75 to 264 VAC.
- Dedicated, compact aluminum PCB and power elements used.
- Built-in varistor effectively absorbs external surges.
- Quick-connect #110 input terminals and #250 output connections. (#187 input terminals and #250 output connections are available.)
- “-US” models certified by UL, CSA, and IEC/EN (TÜV).



## Ordering Information

To order: Select the part number and add the desired coil voltage rating. (e.g., G3NE-205T-US DC24)

Isolation	Zero cross function	Indicator	Rated output load	Rated input voltage	Model
Phototriac	Yes	No	5 A at 100 to 240 VAC (5 A at 75 to 264 VAC)	5, 12, 24 VDC	G3NE-205T-US
			10 A at 100 to 240 VAC (10 A at 75 to 264 VAC)		G3NE-210T-US
			20 A at 100 to 240 VAC (20 A at 75 to 264 VAC)		G3NE-220T-US
	No		5 A at 100 to 240 VAC (5A at 75 to 264 VAC)		G3NE-205TL-US
			10 A at 100 to 240 VAC (10 A at 75 to 264 VAC)		G3NE-210TL-US
			20 A at 100 to 240 VAC (20 A at 75 to 264 VAC)		G3NE-220TL-US

**Note:** When ordering #187 input terminal versions, place “-2” before “-US” in the part number. (e.g., G3NE-210TL-2-US DC12)

## ■ 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

勝特力材料 886-3-5753170  
 勝特力电子(上海) 86-21-34970699  
 勝特力电子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)

# Specifications

## ■ Ratings (at an Ambient Temperature of 25°C)

### 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 heat sink or a radiation plate of specified size.

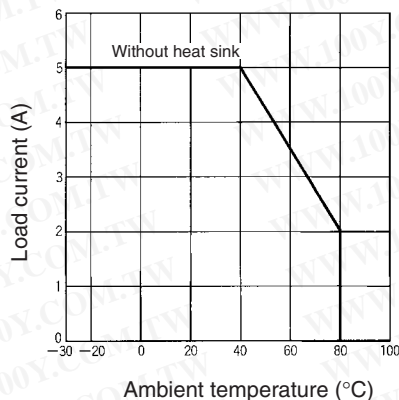
## ■ Characteristics

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	Malfunction: 10 to 55, 1.5-mm double amplitude	
Shock resistance	Malfunction: 1,000 m/s <sup>2</sup> (approx. 100G)	
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	UL File No. E64562/CSA File No. LR35535 TÜV R9051064 (VDE0435) (EN60950)	
Weight	Approx. 37 g	

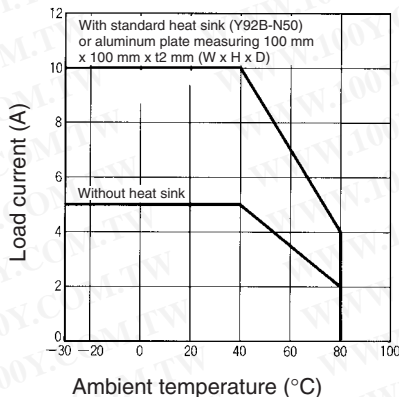
## Engineering Data

### Load Current vs. Ambient Temperature

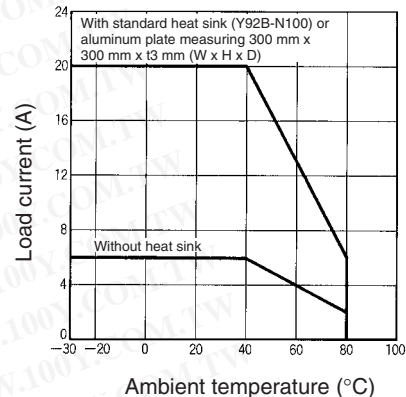
G3NE-205T(L)-(2)-US



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



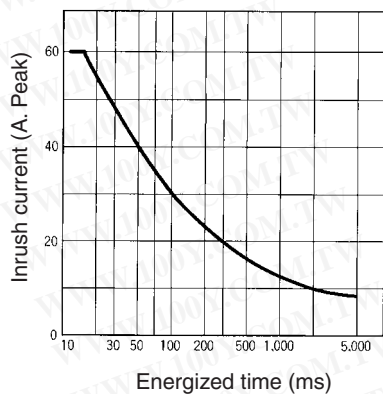
G3NE-220T(L)-(2)-US



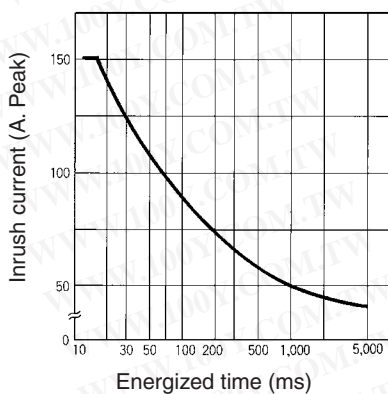
### Inrush Current Resistivity

One cycle, non-repetitive (Keep the inrush current to half the rated value if it occurs repetitively.)

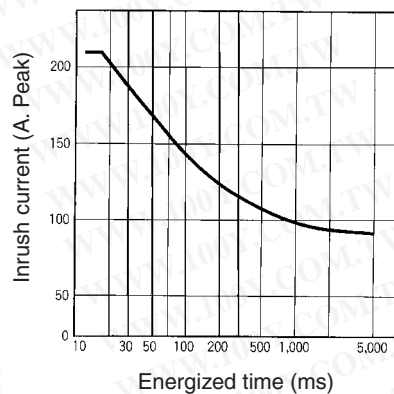
G3NE-205T(L)-(2)-US



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



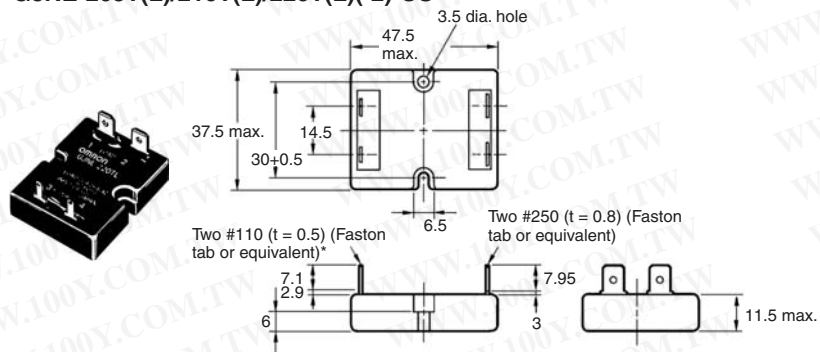
G3NE-220T(L)-(2)-US



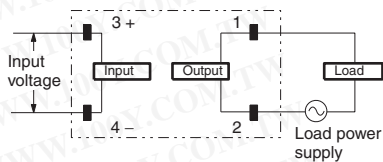
# Dimensions

Note: All units are in millimeters unless otherwise indicated.

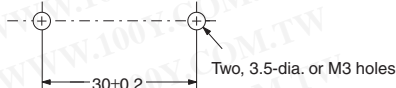
## G3NE-205T(L)/210T(L)/220T(L)(-2)-US



### Terminal Arrangement/ Internal Connections (Top View)

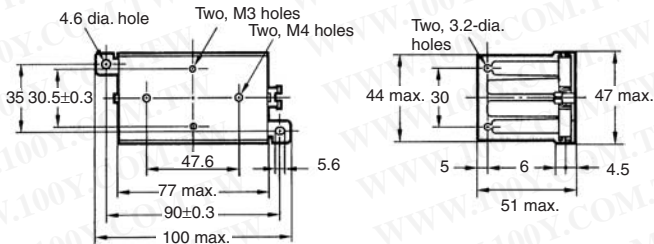


### Mounting Holes

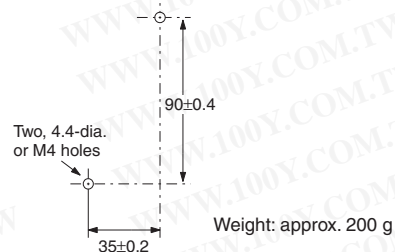


\* G3NE-2□□□(L)-2-US: Two, #187 (t=0.5) (Faston tab or equivalent)

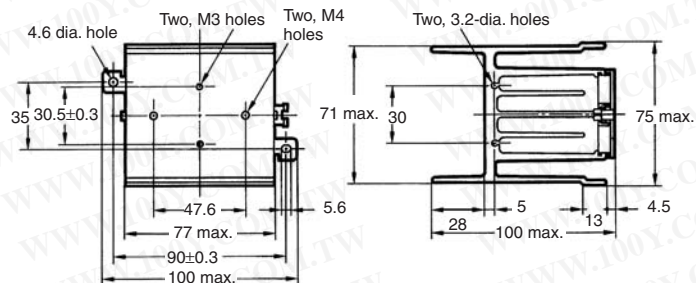
## Heat Sink Y92B-N50



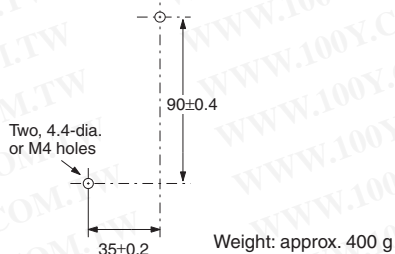
### Mounting Holes



## Y92B-N100



### Mounting Holes



## ■ Approvals

UL Recognized (File No. E64562) / CSA Certified (File No. LR35535) -- Ambient Temp. = 40°C

Input voltage	SSR type	Output ratings
5, 12, 24 VDC	G3NE-205	5A resistive, 240 VAC 3A Tungsten, 240 VAC 3.2A FLA/ 19.2A LRA, 240 VAC 50/60 Hz
	G3NE-210	10A resistive, 240 VAC 7.5A Tungsten, 240 VAC 4.8A FLA/ 28.8A LRA, 240 VAC 50/60 Hz
	G3NE-210	5A resistive, 240 VAC 5A Tungsten, 240 VAC 3A FLA/ 18A LRA, 240 VAC 50/60 Hz
	G3NE-220	20A resistive, 240 VAC 11A Tungsten, 240 VAC 11.1A FLA/ 66.6A LRA, 240 VAC 50/60 Hz
	G3NE-220	6A resistive, 240 VAC 6A Tungsten, 240 VAC 3.3A FLA/ 19.8A LRA, 240 VAC 50/60 Hz

## Precautions

Do not apply excessive force to the terminals. Exercise care when pulling or inserting the terminal clips.

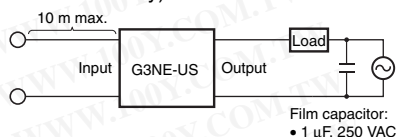
When attaching a heat sink to the G3NE, apply heat-conductive grease on the heat sink. Tighten the mounting screws of the heat sink with a torque of 0.59 to 0.98 N•m

### Thermal Resistance Rth (Back of Junction SSR)

Model	Thermal resistance (°C/W)
G3NE-205T (L)	2.72
G3NE-210T (L)	2.12
G3NE-220T (L)	2.22

### EMC Directive Compliance

The G3NE complies with EMC Directives under the following conditions ("US" models only).



- Connect a film capacitor to the load power supply.
- The input cable must be less than 10 m.

MEMO

A large grid of dashed lines for writing notes, consisting of 20 columns and 30 rows. The grid is used for taking notes or recording information.

# Omron Electronic Components, LLC

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  - Including:** Including without limitation
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  - Delivery and shipping dates are estimates only; and
  - Seller will package Products as it deems proper for protection against normal handling and extra charges apply to special conditions.
- Claims:** Any claim by Buyer against Seller for shortage or damage to the Products occurring before delivery to the carrier or any claim related to pricing or other charges must be presented in detail in writing to Seller within 30 days of receipt of shipment.

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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.

**OMRON**

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