

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 (5 A 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

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.

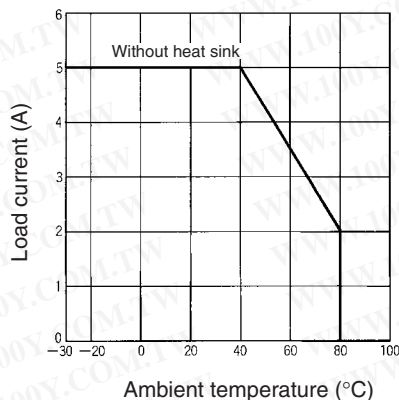
■ Characteristics

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 ² (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	

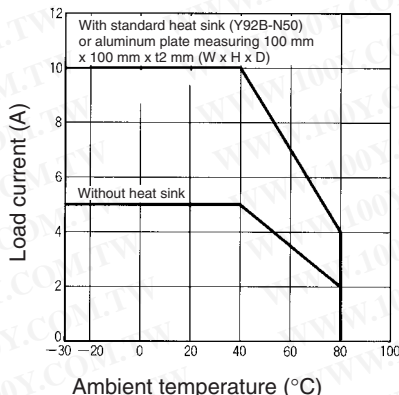
Engineering Data

Load Current vs. Ambient Temperature

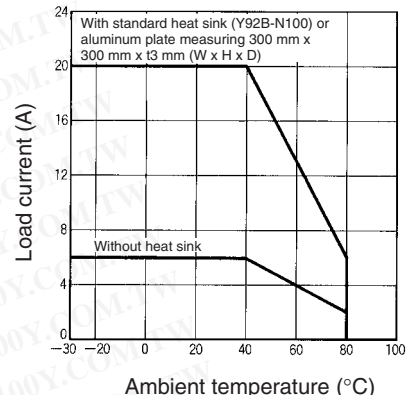
G3NE-205T(L)-(2)-US



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



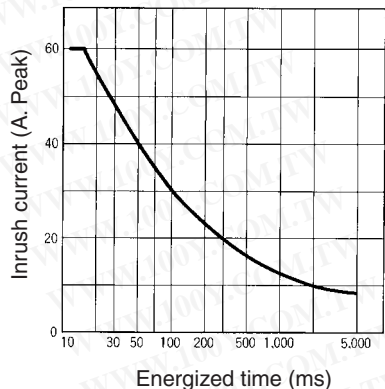
G3NE-220T(L)-(2)-US



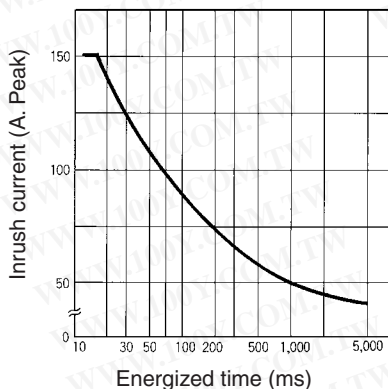
Inrush Current Resistivity

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

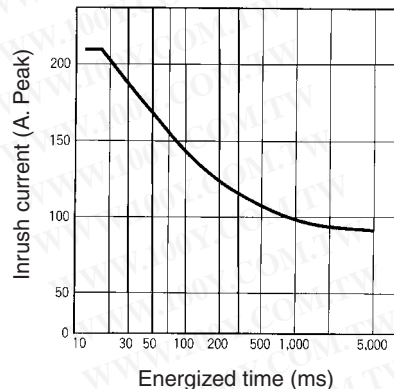
G3NE-205T(L)-(2)-US



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



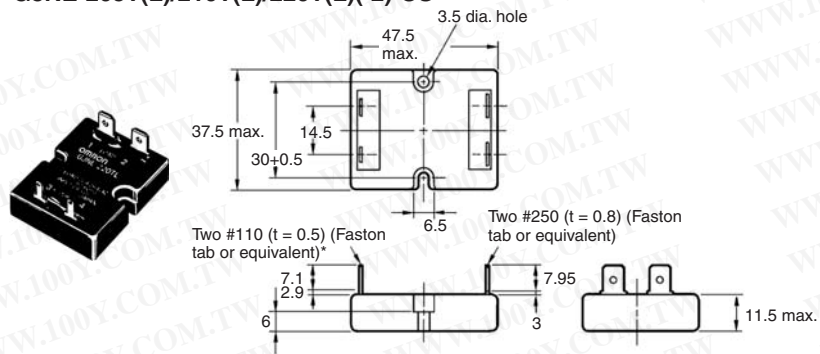
G3NE-220T(L)-(2)-US



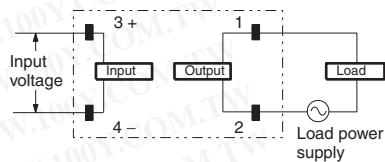
Dimensions

Note: All units are in millimeters unless otherwise indicated.

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

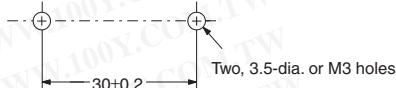


Terminal Arrangement/ Internal Connections (Top View)

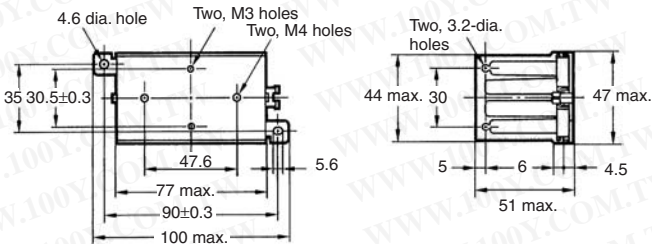


* G3NE-2□□T(L)-2-US: Two, #187 (t=0.5) (Faston tab or equivalent)

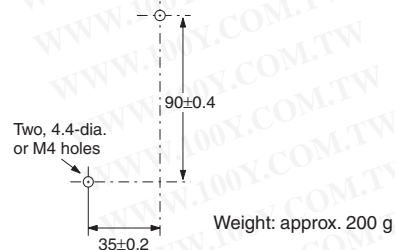
Mounting Holes



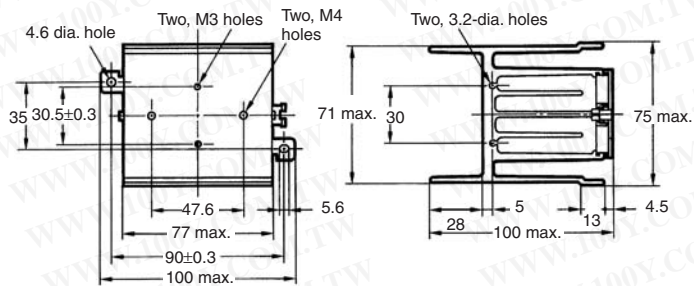
Heat Sink Y92B-N50



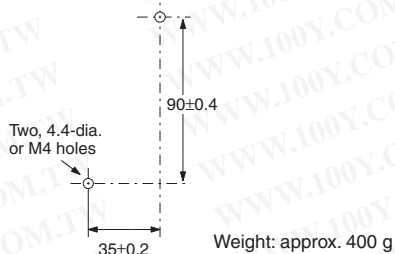
Mounting Holes



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.

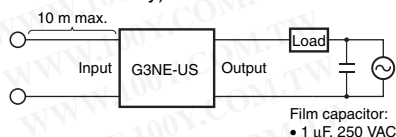
When attaching a heat sink to the G3NE, apply heat-conductive grease on the heat sink. Tighten the mounting screws of the heat sink with a torque of 0.59 to 0.98 N•m

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

Omron Electronic Components, LLC

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

OMRON

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