

Solid-state Relay

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.
- Approved by UL and CSA.



Ordering Information

| Isolation | Zero cross function | Indicator | Rated output load (applicable 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 G3NE-205T-2-US |
| | | | 10 A at 100 to 240 VAC (10 A at 75 to 264 VAC) | | G3NE-210T-US G3NE-210T-2-US |
| | | | 20 A at 100 to 240 VAC (20 A at 75 to 264 VAC) | | G3NE-220T-US G3NE-220T-2-US |
| | No | | 5 A at 100 to 240 VAC (5 A at 75 to 264 VAC) | | G3NE-205TL-US G3NE-205TL-2-US |
| | | | 10 A at 100 to 240 VAC (10 A at 75 to 264 VAC) | | G3NE-210TL-US G3NE-210TL-2-US |
| | | | 20 A at 100 to 240 VAC (20 A at 75 to 264 VAC) | | G3NE-220TL-US G3NE-220TL-2-US |

Note: When ordering, specify the input voltage.

■ Accessories (Order Separately) Heat Sink

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

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

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 | | 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) | 0.1 to 5 A | 150 A (60 Hz, 1 cycle) |
| G3NE-220T(L)-(-2)US | | | 0.1 to 20 A (see note) | 0.1 to 5 A | 220 A (60 Hz, 1 cycle) |

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

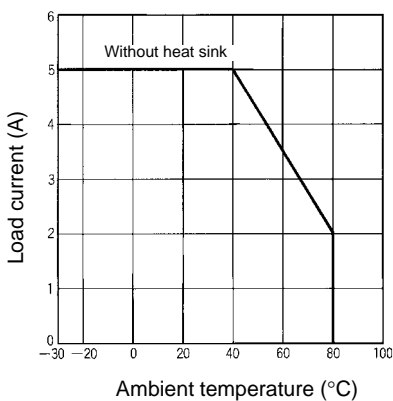
■ Characteristics

| 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 | 5 mA max. (at 100 VAC) 10 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 Hz, 1.5-mm double amplitude | |
| Shock resistance | Malfunction: 1,000 m/s ² | |
| Ambient temperature | Operating: -30°C to 80°C (with no icing nor condensation) Storage: -30°C to 100°C (with no icing nor condensation) | |
| Ambient humidity | Operating: 45% to 85% | |
| Approved standards | UL508 File No.E64562/CSA C22.2 (No.0, No.14) File No. LR35535 TÜV R9051064 (VDE0435) (EN60950) | |
| Weight | Approx. 37 g | |

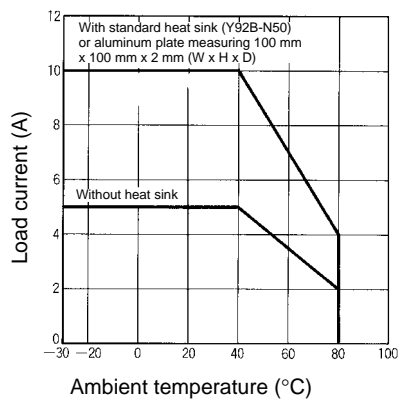
Engineering Data

Load Current vs. Ambient Temperature Characteristics

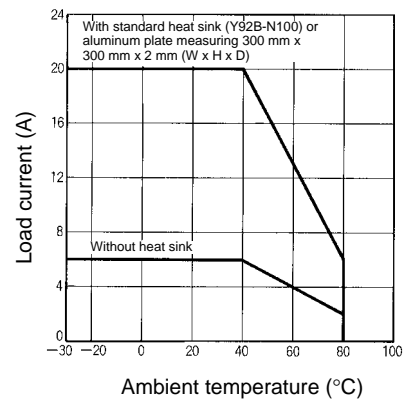
G3NE-205T(L)-(-2)US



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



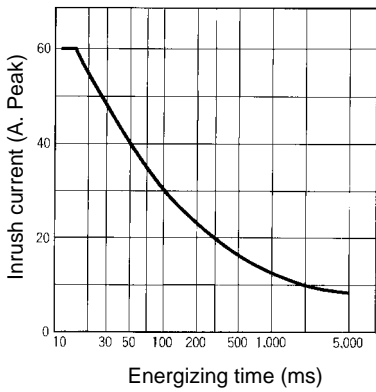
G3NE-220T(L)-(-2)US



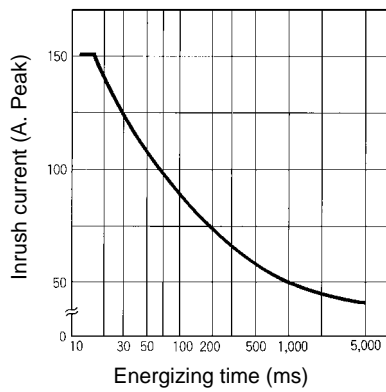
Inrush Current Resistivity

Non-repetitive (Keep the inrush current to half the rated value if it occurs repetitively.)

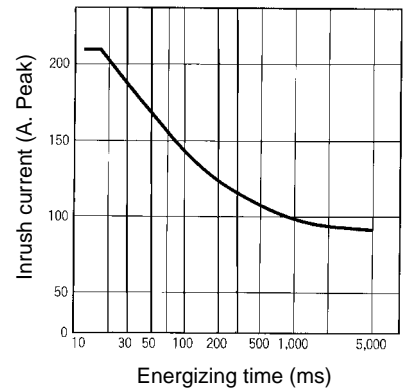
G3NE-205T(L)-(-2)US



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



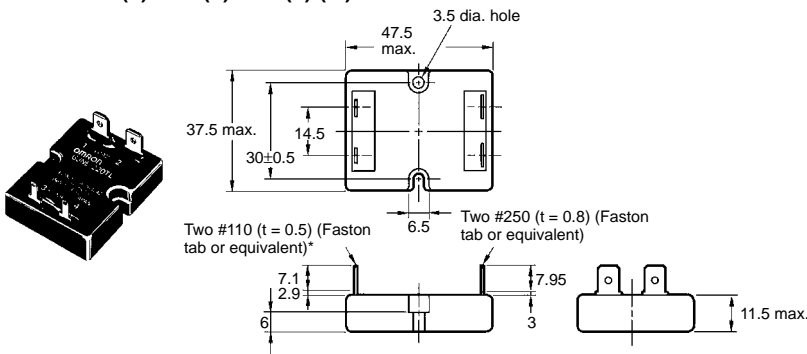
G3NE-220T(L)-(-2)US



Dimensions

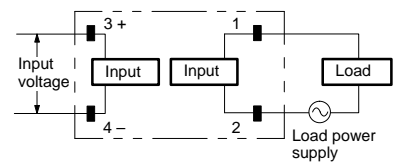
Note: All units are in millimeters unless otherwise indicated.

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

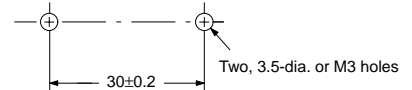


* G3NE-2□□T(L)-2-US: Two, #187 (t=0.5) (Faston tab or equivalent)

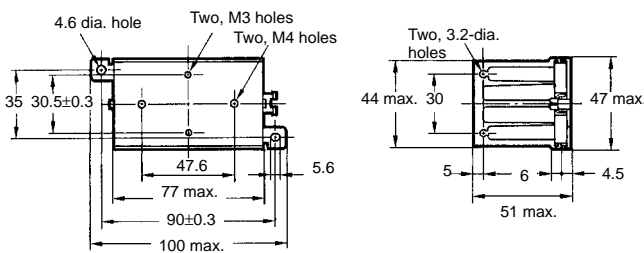
**Terminal Arrangement/
Internal Connections
(Top View)**



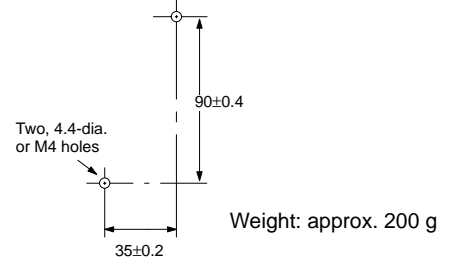
Mounting Holes



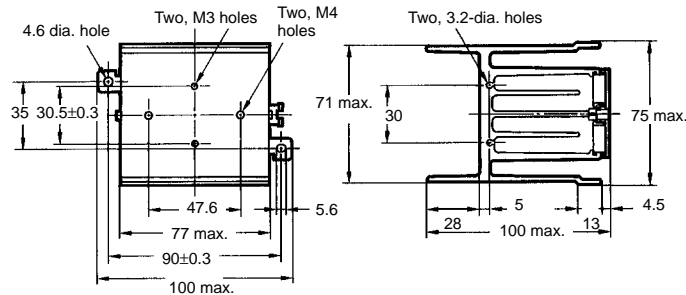
**Heat Sink
Y92B-N50**



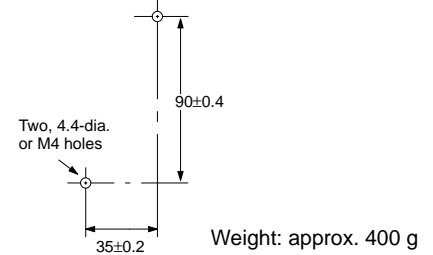
Mounting Holes



Y92B-N100



Mounting Holes

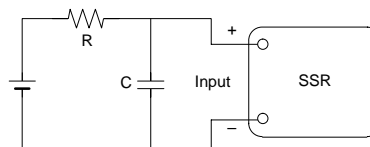


Precautions

Refer to pages 11 to 19 for general precautions

Although the LOAD terminals are internally connected to a snubber circuit that absorbs noises, do not wire power lines or high-tension lines with the load connecting lines of the G3NE in the same conduit or the G3NE may be damaged or malfunction.

Because the operation time of the G3NE is extremely short, take measures to suppress noise induced between the INPUT terminals. If generation of strong noise is expected, connect an external noise absorber such as an RC circuit.



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.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

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