

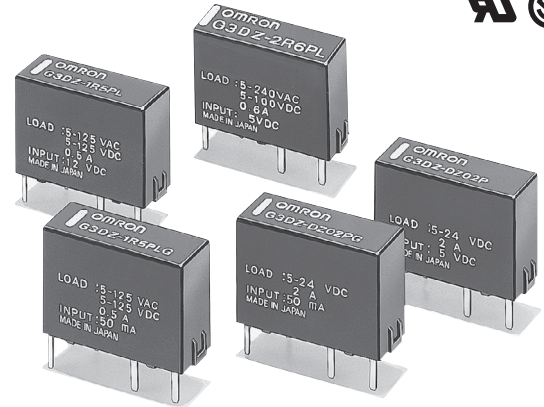
G3DZ

Solid State Relays



SSR Identical to the G6D in Size with AC/DC dual-use type and DC-only Type Available for the Whole Product Line

- 10- μ A current leakage max. between open output terminals.
- 2,500-VAC dielectric strength ensured between input and output terminals.
- With or without input resistor incorporated models available.
- Incorporated with overvoltage absorption circuit.
- Full-wave rectified and half-wave rectified AC current switchable.



RoHS Compliant



Refer to "Solid State Relays Common Precautions".

Model Number Legend

G3DZ-□□□□□□
 1 2 3 4 5

1. Rated Load Power Supply Voltage

- 1 : 125 VAC
- 2 : 240 VAC
- DZ : 24 VDC

2. Rated Load Current

- R5 : 0.5 A
- R6 : 0.6 A
- O2 : 2 A

3. Terminal Type

P: PCB terminals

4. Zero Cross Function (For AC/DC dual-use type only)

L: Not equipped with zero cross function

5. Input Resistance

None: With input resistance

G : Without input resistance

List of Models

With Input Resistance

| Isolation | Zero cross function | Indicator | Rated output load | Rated input voltage | Model | Minimum packing unit |
|-----------------------|---------------------|-----------|---------------------------------------|---------------------|-------------------|----------------------|
| Photo-voltage coupler | No | No | 0.6 A 5 to 240 VAC 5 to 100 VDC | 5 VDC | G3DZ-2R6PL | 25 pcs |
| | | | | 12 VDC | | |
| | | | | 24 VDC | | |
| | | | 0.5 A 5 to 100 VAC 5 to 100 VDC | 5 VDC | G3DZ-1R5PL | |
| | | | | 12 VDC | | |
| | | | | 24 VDC | | |
| | | | 2.0 A 5 to 24 VDC | 5 VDC | G3DZ-DZ02P | |
| | | | | 12 VDC | | |
| | | | | 24 VDC | | |

Note: Refer to "Photo Microsensor Selection Guide" for overseas standards approved models.

Without Input Resistance

| Isolation | Zero cross function | Indicator | Rated output load | Max. input current | Model | Minimum packing unit |
|-----------------------|---------------------|-----------|---------------------------------------|--------------------|--------------------|----------------------|
| Photo-voltage coupler | No | No | 0.5 A 3 to 125 VAC 3 to 125 VDC | 50 mA (DC input) | G3DZ-1R5PLG | 25 pcs |
| | | | 2.0 A 3 to 26.4 VDC | | G3DZ-DZ02PG | |

Connecting Socket

| Applicable Relay | Model |
|------------------|----------------|
| G3DZ-□ | P6D-04P |

■ Ratings

• With Input Resistance

| Model | Input | | | | | Output | | | |
|------------|---------------|-------------------|------------|----------------------|----------------------|------------------------------|------------------------------|---|----------------|
| | Rated voltage | Operating voltage | Impedance | Voltage level | | Rated load voltage | Load voltage range | Load current * | Inrush current |
| | | | | Must operate voltage | Must release voltage | | | | |
| G3DZ-2R6PL | 5 VDC | 4 to 6 VDC | 830 Ω ±20% | 4 VDC max. | | 5 to 240 VAC 5 to 100 VDC | 3 to 264 VAC 3 to 125 VDC | AC: 100 μ to 0.6 A DC: 10 μ to 0.6 A | 6 A (10 ms) |
| | 12 VDC | 9.6 to 14.4 VDC | 2 kΩ ±20% | 9.6 VDC max. | | | | | |
| | 24 VDC | 19.2 to 28.8 VDC | 4 kΩ ±20% | 19.2 VDC max. | | | | | |
| G3DZ-1R5PL | 5 VDC | 4 to 6 VDC | 750 Ω ±20% | 4 VDC max. | | 5 to 100 VAC 5 to 100 VDC | 3 to 125 VAC 3 to 125 VDC | AC: 100 μ to 0.5 A DC: 10 μ to 0.5 A | 5 A (10 ms) |
| | 12 VDC | 9.6 to 14.4 VDC | 2 kΩ ±20% | 9.6 VDC max. | | | | | |
| | 24 VDC | 19.2 to 28.8 VDC | 4 kΩ ±20% | 19.2 VDC max. | | | | | |
| G3DZ-DZ02P | 5 VDC | 4 to 6 VDC | 750 Ω ±20% | 4 VDC max. | | 5 to 24 VDC | 3 to 26.4 VDC | DC: 10 μ to 2.0 A | 20 A (10 ms) |
| | 12 VDC | 9.6 to 14.4 VDC | 2 kΩ ±20% | 9.6 VDC max. | | | | | |
| | 24 VDC | 19.2 to 28.8 VDC | 4 kΩ ±20% | 19.2 VDC max. | | | | | |

* The applicable output load current varies depending on the ambient temperature. Refer to reference data the "Load Current vs. Ambient Temperature" rating characteristic for details.

• Without Input Resistance

| Item | | Symbol | G3DZ-1R5PLG | G3DZ-DZ02PG |
|--------|-----------------------|-----------------|--------------------------------|----------------|
| Input | Max. input current | I _{IN} | 50 mA max. | |
| | Rated current | | 6.25 mA (recommendation value) | |
| | Must operate current | I _{OP} | 4 mA max. | |
| | Must release current | I _{RE} | 0.6 mA max. | |
| | Input release voltage | V _R | 3 V | |
| | Forward voltage | V _F | 1.4 V (TYP) | |
| Output | Load voltage range | | 3 to 125 VAC 3 to 125 VDC | 3 to 26.4 VDC |
| | Load current | | 100 μ to 0.5 A | 100 μ to 2.0 A |
| | Inrush current | | 5 A (10 ms) | 20 A (10 ms) |

■ Characteristics (at 25°C)

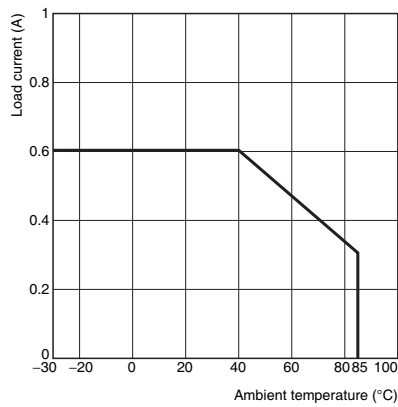
| Item | Model | G3DZ-2R6PL | G3DZ-1R5PL | G3DZ-1R5PLG | G3DZ-DZ02P | G3DZ-DZ02PG |
|-------------------------------|-------|---|---------------|---------------|--------------------------|---------------|
| Operate time * | | 6 ms max. | | | | |
| Release time * | | 10 ms max. | | | | |
| Output ON-resistance * | | 2.4 Ω max. | 3.0 Ω max. | | 0.15 Ω max. | |
| Leakage current at OFF state | | 10 μA max. (at 125 VDC) | | | 10 μA max. (at 26.4 VDC) | |
| Insulation resistance | | 100 MΩ min. (at 500 VDC) | | | | |
| Dielectric strength | | 2,500 VAC, 50/60 Hz for 1 min between input and output | | | | |
| Vibration resistance | | 10 to 55 to 10 Hz, 0.75-mm single amplitude (1.5-mm double amplitude) | | | | |
| Shock resistance | | 1,000 m/s ² | | | | |
| Storage temperature | | -30°C to 100°C (with no icing or condensation) | | | | |
| Ambient operating temperature | | -30°C to 85°C (with no icing or condensation) | | | | |
| Ambient operating humidity | | 45% to 85%RH | | | | |
| Weight | | Approx. 3.1 g | Approx. 2.8 g | Approx. 2.4 g | Approx. 2.6 g | Approx. 2.4 g |

* Measurement conditions: For G3DZ-2R6PL/-1R5PL/-DZ02P, the values are under the measurement conditions whereby rated voltages are applied to the input
For G3DZ-1R5PLG/-DZ02PG, the values are measured with 6.25 mA current applied to the input.

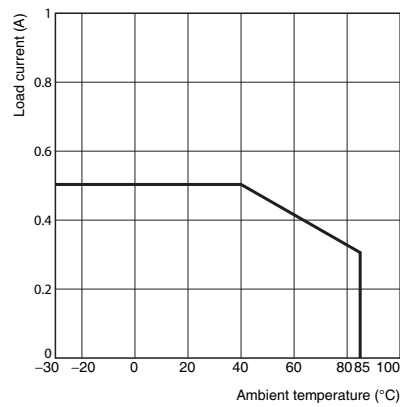
Engineering Data Note: The following data is for ambient temperature at 25°C.

Load Current vs. Ambient Temperature Characteristics

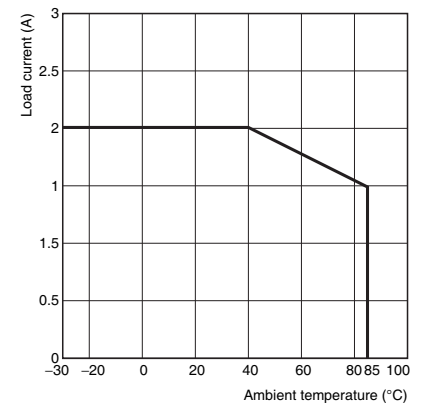
G3DZ-2R6PL



G3DZ-1R5PL(G)

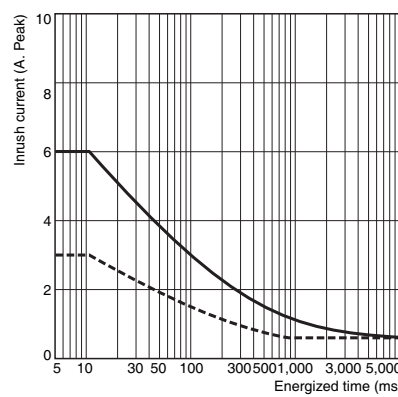


G3DZ-DZ02P(G)

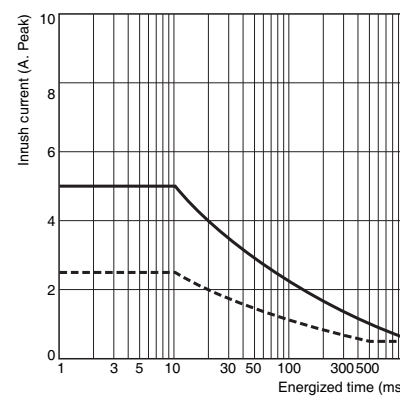


Inrush Current Resistivity Non-repetitive (Keep the inrush current to half the rated value if it occurs repetitively.)

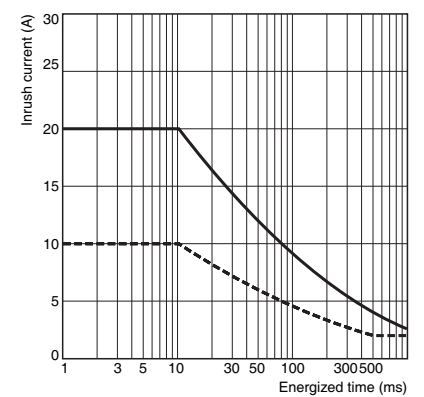
G3DZ-2R6PL



G3DZ-1R5PL(G)

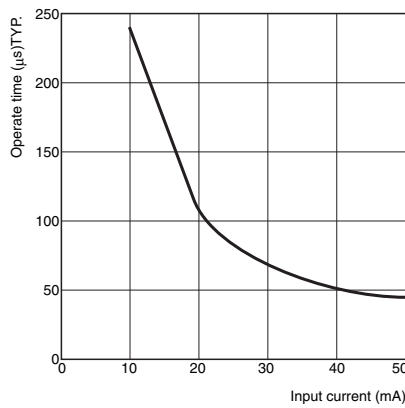


G3DZ-DZ02P(G)

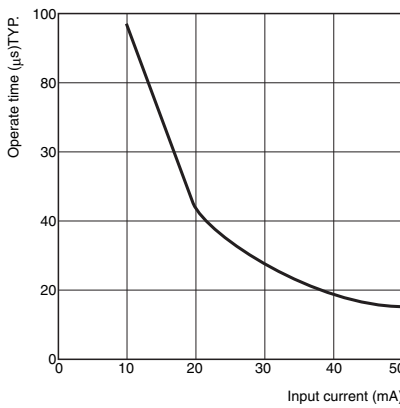


Input Current vs. Operate Time Characteristics

G3DZ-1R5PLG

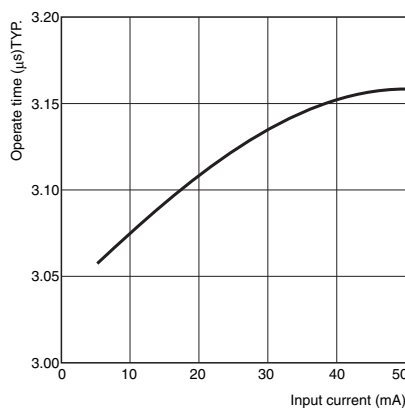


G3DZ-DZ02PG

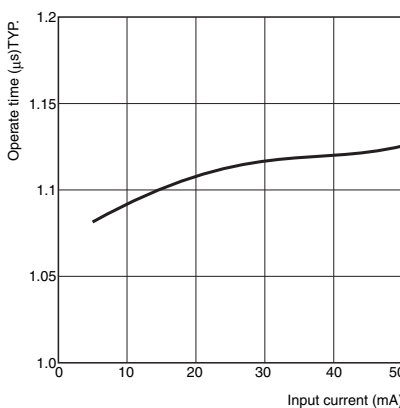


Input Current vs. Release Time Characteristics

G3DZ-1R5PLG



G3DZ-DZ02PG

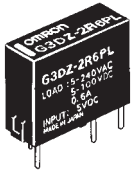


G3DZ

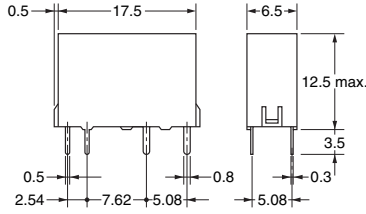
■ Dimensions

(Unit: mm)

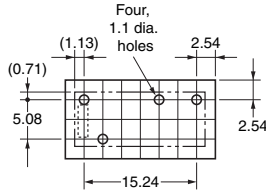
G3DZ-2R6PL
G3DZ-1R5PL(G)
G3DZ-DZ02P(G)



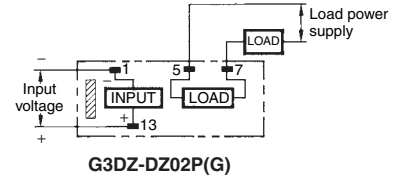
The above diagram is a G3DZ-2R6PL Relay.



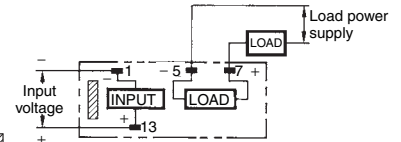
Mounting Holes
(BOTTOM VIEW)
Tolerance: ±0.1 mm



Terminal Arrangement/
Internal Connections
(BOTTOM VIEW)
G3DZ-2R6PL/-1R5PL(G)



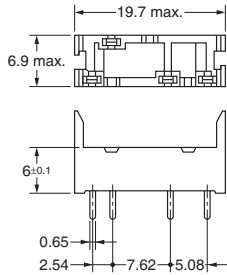
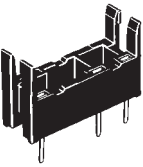
G3DZ-DZ02P(G)



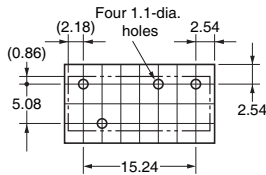
Note: Orientation marks are indicated as follows: □ ▨
The load can be connected to either the positive or negative side.

■ Socket Use the socket P6D-04P.

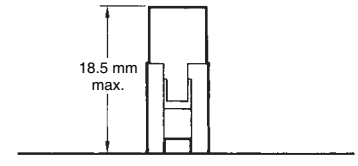
P6D-04P



Mounting Holes
(BOTTOM VIEW)
Tolerance: ±0.1 mm



Socket Mounting Height



G3DZ

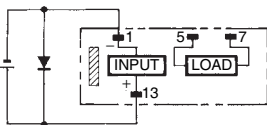
■ Safety Precautions

- Please refer to "Solid State Relays Common Precautions" for correct use.

Precautions for Correct Use

• Reversed Surge Voltage

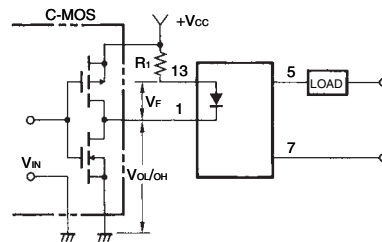
- If any reversed surge voltage is imposed on the input terminals, insert a diode in parallel to the input terminals. Do not impose a reversed voltage value of 3 V or more.



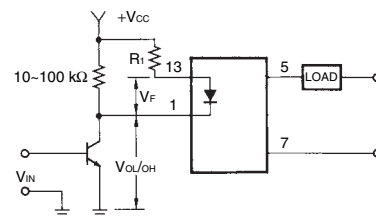
• Terminals

- Since terminals are made of materials with high heat conduction, complete soldering (automatic or manual) with 10 seconds at a temperature of 260°C. When fitting with a Socket, match properly and push straight down vertically.

• Representative Example of Relay Driver Circuit (For C-MOS)



(For transistors)



• Calculation of Input Resistance

$$R_1 = \frac{V_{CC} - V_{OL} - V_F \text{ (ON)}}{4 \sim 50 \text{ mA}}$$

- Application examples provided in this document are for reference only. In actual applications, confirm equipment functions and safety before using the product.
- Consult your OMRON representative before using the product under conditions which are not described in the manual or applying the product to nuclear control systems, railroad systems, aviation systems, vehicles, combustion systems, medical equipment, amusement machines, safety equipment, and other systems or equipment that may have a serious influence on lives and property if used improperly. Make sure that the ratings and performance characteristics of the product provide a margin of safety for the system or equipment, and be sure to provide the system or equipment with double safety mechanisms.

Note: Do not use this document to operate the Unit.