Precautions

General Precautions

Be sure to turn off power to the SSR before wiring the SSR, otherwise an electric shock may be received.

Do not touch the terminals of the SSR while power is being supplied to the SSR. The terminals are charged with the power, and an electric shock may be received by touching the terminals.

The built-in capacitor may have a residual voltage after the SSR is turned off. Be sure to discharge the residual voltage before touching the terminals of the SSR, otherwise an electric shock may be received.

Mounting

1. Make sure that no excessive voltage or current is imposed on or flows to the input or output circuit of the SSR, otherwise the SSR may malfunction or burn.
2. Solder the terminals of the SSR properly under the required soldering conditions. The SSR may be abnormally heated and burn if power is supplied to the terminals soldered incorrectly.
3. Do not short-circuit the load of the SSR while power is supplied to the SSR. Do not short-circuit the power supply through the SSR. The SSR may be damaged, malfunction, or burn if the load or power supply is short-circuited.

Correct Use

The terminals of the SSR are highly heat-conductive. Each terminal must be soldered within 10 s at 260°C or within 5 s at 350°C.

The SSR is of a thin-profile construction. To maintain the vibration resistance of the SSR, make sure that the space between the SSR and PCB is 0.1 mm maximum. Lifting of the PCB can be prevented by setting the hole diameter of the PCBs on both sides slightly smaller than the actual terminal dimension.

Select the model without the zero-cross function when using the Unit for phase control output.

The casing works as a heat sink. When mounting two or more Units closely, make sure that the Units are properly ventilated by taking ambient temperature rises into consideration. If Units are closely mounted and used in places with no ventilation, the load current of each Unit must be 1/2 of the rated load current.

Fusing characteristics

The G3MC has a function that forces an open mode failure when an overcurrent exceeds the rated value. The fusing characteristics of the G3MC, however, are not the same as those of a general-use glass fuse. Machines that use the G3MC must be provided with a safety device, such as a fuse or breaker, and ON-OFF tests or short-circuit tests must be implemented to confirm the following items and detailed influences. Users must determine test conditions and implement tests on reliability as required by the machine.

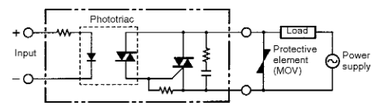
1. Life test under continuous electric current
2. On-off cycle test
3. Influence by ambient temperature
4. Influence by power source frequency
5. Influence by power source voltage fluctuation

Note: Contact your local OMRON sales office for more detailed information.

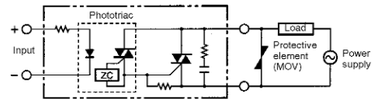
Protective Element

No overvoltage absorption element is built in. Therefore, if the G3MC is connected to an inductive load, be sure to connect the overvoltage absorption element.

G3MC-□□□PL (without Zero cross function)



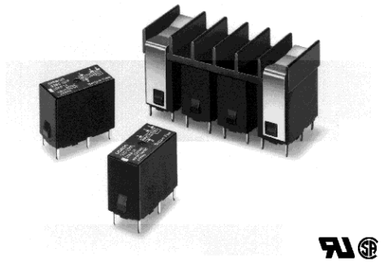
G3MC-□□□P (with Zero cross function)



ALL DIMENSIONS SHOWN ARE IN MILLIMETRES.
To convert millimetres into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

Ultra-small Relay Breaks up to 1 A

- Ultra-small, dual in-line package (DIP) SSR.
- Terminals compatible with G6B Electromagnetic Relay's. Mix with G6Bs as the application requires.
- Close side-by-side mounting possible. In addition, heat sink dedicated to this mounting style also available.
- Both AC- and DC-load versions available.
- High isolation of 2,500 VAC between input and output freeing inputs from noise surge generated in the load.
- Built-in varistor effectively absorbs external surges. (In case of SSR for AC switching.)
- Approved by UL and CSA.



Ordering Information

Isolation	Zero cross function	Indicator	Rated output load (applicable output load)	Rated input voltage	Model
Phototriac	No	No	1 A at 100 to 240 VAC (1 A at 75 to 264 VAC) (see note 1)	5 VDC	G3S-201PL-US
				12 VDC	
				24 VDC	
			1.2 A at 100 to 240 VAC (1.2 A at 75 to 264 VAC) (see note 1)	5 VDC	G3S-201PL-PD-US
				12 VDC	
				24 VDC	
Photocoupler			1 A at 4 to 24 VDC (1 A at 3 to 26 VDC) (see note 2)	5 VDC	G3SD-Z01P-US
				12 VDC	
				24 VDC	
			1.1 A at 4 to 24 VDC (1.1 A at 3 to 26 VDC) (see note 2)	5 VDC	G3SD-Z01P-PD-US
				12 VDC	
				24 VDC	

Note: 1. Product is labelled "250 VAC".
2. Product is labelled "24 VDC".

■ Accessories (Order Separately)

Heat Sink

Heat Sink	Y92B-S08N

See *Dimensions* for details.

Connecting Socket

Connecting Socket	P6B-04P

See *Dimensions* for details.

■ Ratings

Input

Rated voltage	Operating voltage	Impedance		Voltage level	
		G3S-201PL-US/ 201PL-PS-US	G3SD-Z01P-US/ Z01P-PD-US	Must operate voltage	Must release voltage
5 VDC	4 to 6 VDC	450 Ω±20%	630 Ω±20%	4 VDC max.	1 VDC min.
12 VDC	9.6 to 14.4 VDC	1.1 kΩ±20%	1.5 kΩ±20%	9.6 VDC max.	
24 VDC	19.2 to 28.8 VDC	2.2 kΩ±20%	2.8 kΩ±20%	19.2 VDC max.	

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

Output

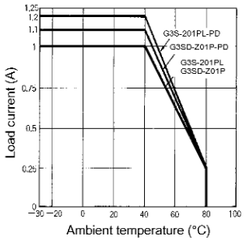
Model	Applicable load			
	Rated load voltage	Rated load voltage range	Load current	Inrush current
G3S-201PL	100 to 240 VAC	75 to 264 VAC	0.1 to 1 A	15 A (60 Hz, 1 cycle)
G3S-201PL-PD			0.1 to 1.2 A	
G3SD-Z01P	4 to 24 VDC	3 to 26 VDC	0.01 to 1 A	3 A (10 ms)
G3SD-Z01P-PD			0.01 to 1.1 A	

■ Characteristics

Item	G3S-201PL-US/201PL-PS-US	G3SD-Z01P-US/Z01P-PD-US
Operate time	1 ms max.	
Release time	1/2 of load power source cycle + 1 ms max.	1 ms max.
Output ON voltage drop	1.6 V (RMS) max.	1.5 V max.
Leakage current	2 mA max.	0.1 mA max. (at 26 VDC)
Insulation resistance	100 MΩ min. (at 500 VDC)	
Dielectric strength	2,500 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 or condensation) Storage: −30°C to 100°C (with no icing or condensation)	
Ambient humidity	Operating: 45% to 85%	
Approved standards	UL508 File No. E64562/CSA C22.2 (No.0, No.14) File No. LR35535	
Weight	Approx. 13 g	

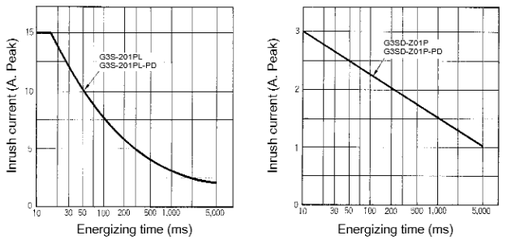
Engineering Data

Load Current vs. Ambient Temperature Characteristics



Inrush Current Resistivity

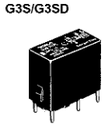
Non-repetitive (Keep the inrush current to half the rated value if it occurs repetitively.)

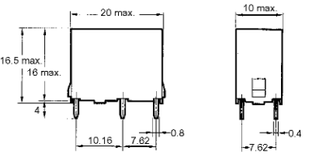


Dimensions

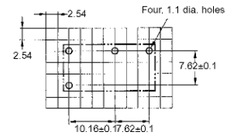
Note: All units are in millimeters unless otherwise indicated.

G3S/G3SD

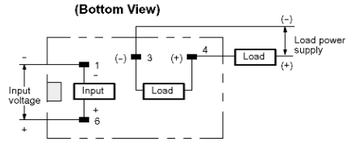




PCB Dimensions (Bottom View)

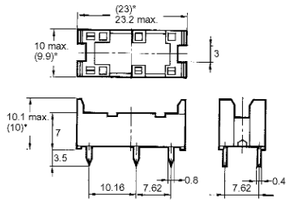


Terminal Arrangement/ Internal Connections (Bottom View)



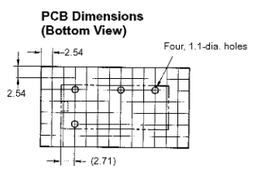
Note: Values in parentheses apply to the DC-load versions.

Connecting Socket P6B-04P

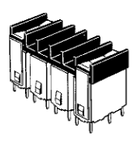


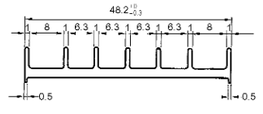
*Average value

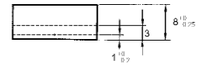
PCB Dimensions (Bottom View)



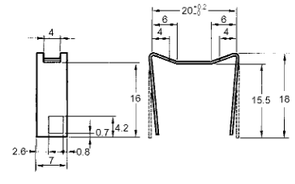
Heat Sink Y92B-S08N



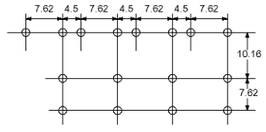




Mounting Bracket



PCB Dimensions (Bottom View)



■ Ratings

Input

Rated voltage	Operating voltage	Impedance		Voltage level	
		G3S-201PL-US/ 201PL-PS-US	G3SD-Z01P-US/ Z01P-PD-US	Must operate voltage	Must release voltage
5 VDC	4 to 6 VDC	450 Ω±20%	630 Ω±20%	4 VDC max.	1 VDC min.
12 VDC	9.6 to 14.4 VDC	1.1 kΩ±20%	1.5 kΩ±20%	9.6 VDC max.	
24 VDC	19.2 to 28.8 VDC	2.2 kΩ±20%	2.8 kΩ±20%	19.2 VDC max.	

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

Output

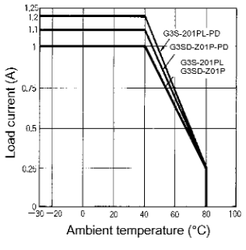
Model	Applicable load			
	Rated load voltage	Rated load voltage range	Load current	Inrush current
G3S-201PL	100 to 240 VAC	75 to 264 VAC	0.1 to 1 A	15 A (60 Hz, 1 cycle)
G3S-201PL-PD			0.1 to 1.2 A	
G3SD-Z01P	4 to 24 VDC	3 to 26 VDC	0.01 to 1 A	3 A (10 ms)
G3SD-Z01P-PD			0.01 to 1.1 A	

■ Characteristics

Item	G3S-201PL-US/201PL-PS-US	G3SD-Z01P-US/Z01P-PD-US
Operate time	1 ms max.	
Release time	1/2 of load power source cycle + 1 ms max.	1 ms max.
Output ON voltage drop	1.6 V (RMS) max.	1.5 V max.
Leakage current	2 mA max.	0.1 mA max. (at 26 VDC)
Insulation resistance	100 MΩ min. (at 500 VDC)	
Dielectric strength	2,500 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 or condensation) Storage: −30°C to 100°C (with no icing or condensation)	
Ambient humidity	Operating: 45% to 85%	
Approved standards	UL508 File No. E64562/CSA C22.2 (No.0, No.14) File No. LR35535	
Weight	Approx. 13 g	

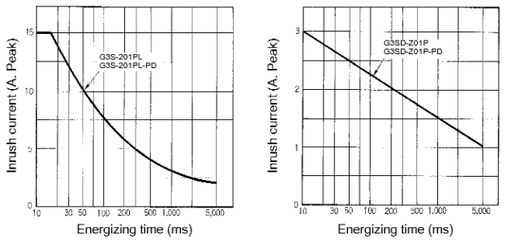
Engineering Data

Load Current vs. Ambient Temperature Characteristics



Inrush Current Resistivity

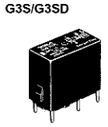
Non-repetitive (Keep the inrush current to half the rated value if it occurs repetitively.)

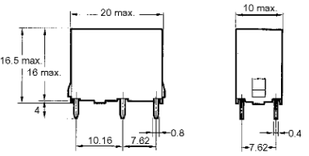


Dimensions

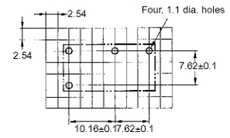
Note: All units are in millimeters unless otherwise indicated.

G3S/G3SD

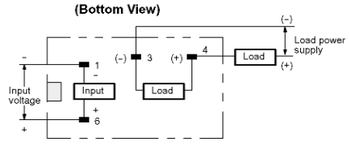




PCB Dimensions (Bottom View)

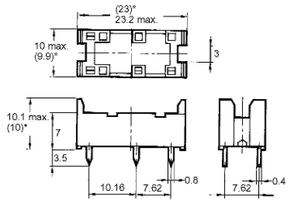


Terminal Arrangement/ Internal Connections (Bottom View)



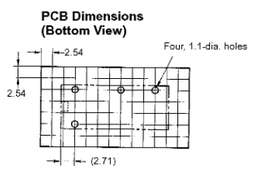
Note: Values in parentheses apply to the DC-load versions.

Connecting Socket P6B-04P

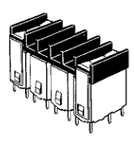


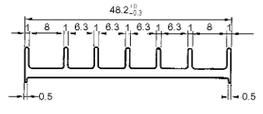
*Average value

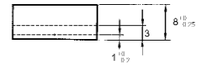
PCB Dimensions (Bottom View)



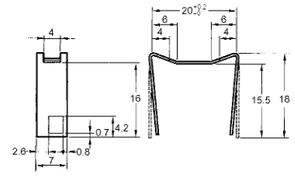
Heat Sink Y92B-S08N



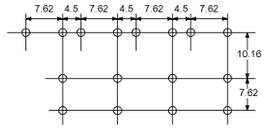




Mounting Bracket



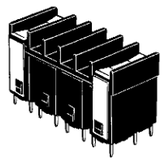
PCB Dimensions (Bottom View)



Precautions

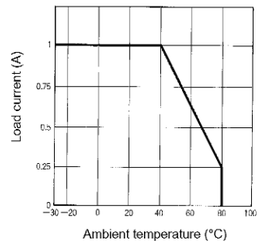
Close Mounting

G3S-201PL-PD and G3SD-Z01-PD SSRs can be closely mounted side by side. Attach the Y92B-S08N Heat Sink to the SSRs mounted closely side by side. When these SSRs are mounted side by side, the load current vs. ambient temperature characteristic declines as shown on the right.



Load Current vs. Ambient Temperature Characteristics

(When four SSRs are mounted side by side and each of them is switched to the same load current.)



Connection

With the SSR for DC switching, the load can be connected to either positive or negative output terminal of the SSR.

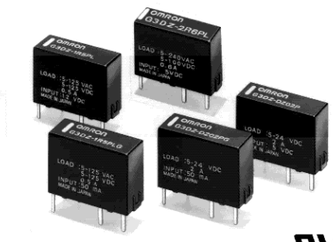
Protective Component

Since the SSR does not incorporate an overvoltage absorption component, be sure to connect an overvoltage absorption component when using the SSR under an inductive load.

ALL DIMENSIONS SHOWN ARE IN MILLIMETRES.
To convert millimetres into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

SSR Identical to the G6D in Size with a Maximum AC/DC Switching Current of 0.6 A

- Switching 0.6 A at 240 VAC or 100 VDC.
- 10-μA current leakage max. between open output terminals.
- 2,500-VAC dielectric strength ensured between input and output terminals.
- Input resistor and varistor incorporated models available.
- Switching full- and half-wave rectified alternating currents.
- Approved by UL and CSA.



Ordering Information

Contact form	Insulation	Zero cross function	Indicator	Applicable output load	Rated input voltage	Model
SPST-NO	Photo-voltage coupler	No	No	0.6 A at 3 to 264 VAC 3 to 125 VDC	5 VDC 12 VDC 24 VDC	G3DZ-2R6PL

■ Accessories (Order Separately)

See *Dimensions* for details.

Connecting socket	P6D-04P

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