FEATURES

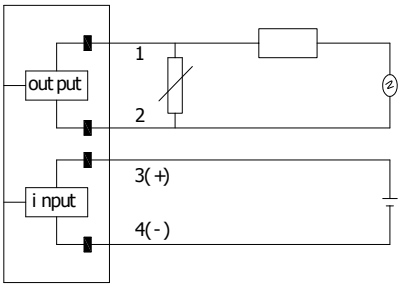
- DC input – AC output for 2A load at 25℃
- 600V blocking voltage
- Zero cross or random turn-on
- Built-in snubber
- Photo isolation

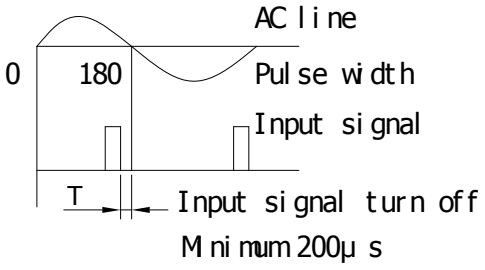
DESCRIPTION

This SPST-NO printed circuit board mount SIP SSR provides AC output switching in a high density package. The MS4's DC input is compatible with 5, 12 and 24V logic systems. All models include an internal snubber. The relays provide 2000Vrms opto-isolation, between input and output. Encapsulation, thermally conductive epoxy.

PRECAUTIONS

1. Terminal arrangement





2. Soldering must be completed within 10 seconds at 260℃ or less or within 5 seconds at 350℃ or less.
3. The SSR case serves to dissipate heat. Install the relays so that they are adequately ventilated. If poor ventilation is unavoidable, reduce the load current by half.
4. The input circuitry does not incorporate a circuit protecting the SSR from being damaged due to a reversed connection. Make sure that the polarity is correct when connecting the input lines.
5. When using the MS4 series for an AC load with a peak voltage of more than 450V, connect the load terminals of the relay to an inrush absorber (varistor). The recommended varistor voltage, 440 to 470V.
6. The load terminals are internally connected to a snubber circuit that absorb noise. However, if wiring from these terminals is laid with or placed in the same duct as high-voltage or power lines, noise may be induced, causing the SSR to operate irregularly or malfunction.
7. When using the MS4 series in phase control applications, at a phase control angle close to 180 degrees the relay's input signal turn off at the trailing edge of the AC sine wave must be limited to end 200μs before AC zero cross. This assures that the relay has time to switch off. Shorter times may cause loss of control at the following half cycle.

MS4 MASSUSE RELAY

INPUT (TA= 25℃)

Control voltage Range	05D	4 - 6VDC
	12D	9.6 – 14.4VDC
	24D	19.2 – 28.8VDC
Must operate voltage	05D	4VDC max.
	12D	9.6VDC max.
	24D	19.2VDC max.
Must release Voltage	1.0VDC max.	
Max. input current	10mA	

GENERAL

Insulation resistance	1000MΩ min. (at 500VDC)
Dielectric strength (input to output)	2000VAC min. 50/60Hz 1 min.
Max. capacitance	5pF (input to output)
Vibration durability	10 to 55Hz, 1.5mm
Shock durability	1000m/s^2
Ambient temperature	Operating: -30℃ to +80℃ Storage: -30℃ to +100℃
Ambient humidity	45% to 85%

OUTPUT

Load voltage range	75 to 264VAC (@47 to 63Hz)
Load current range	0.1 to 2A
Max. surge current (10ms)	25Apk
Max. leakage current	1.5mA
Max. on-state voltage drop	1.5VAC
Max. turn-on time	Zero cross turn-on: 10ms Random turn-on: 1ms
Max. turn-off time	10ms
Transient overvoltage	600Vpk max.
Min. off-state dv/dt	100V/μs min.
Zero-crossover voltage	*15V max.
Min. power factor	0.5

ORDERING INFORMATION

MS4 - 12 D 1 T

Model No.	Input Voltage	Input Form	Zero Cross Function	Termination
MS4	05: 4 to 6VDC 12: 9.6 to 14.4VDC 24: 19.2 to 28.8VDC	D: DC	0: Zero cross turn-on 1: Random turn-on	T: Same as Toshiba TSZXX48S M: Same as Omron G3MB

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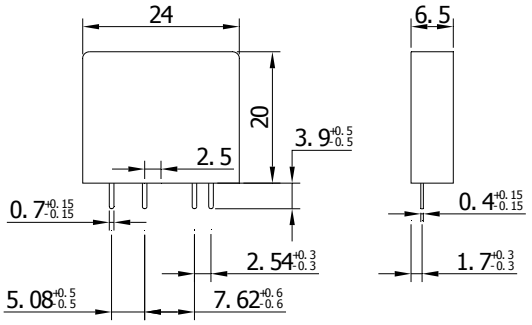
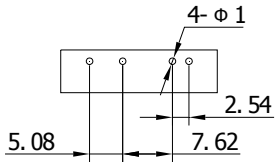
Dimensions(unit: mm)

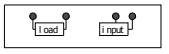
Termination T



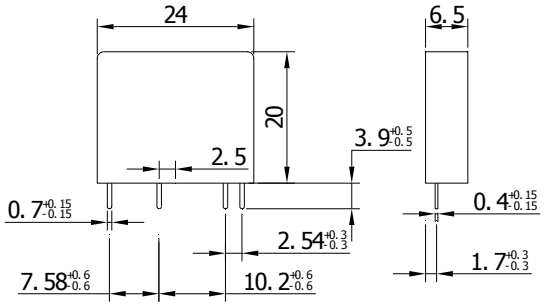
PCB Layout



Schematic



Termination M



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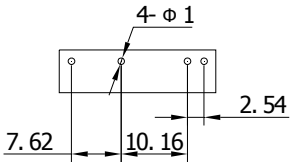

Schematic