

Product Facts

- Qualified to MIL-PRF-28750D
(Mil p/n M28750/10-001Y
and M28750/10-002Y).
- Optically coupled all solid
state relay.
- TTL compatible input.
- Zero voltage turn-on for low
EMI.
- Custom power package.



The JPS10 series solid state relay is designed for AC power switching up to 25 amps at 250Vrms. The circuit employs back-to-back photo SCRs with zero voltage turn-on for reliable switching of resistive or

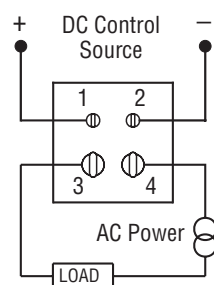
reactive loads. TTL compatible input circuitry is optically isolated to 1,500Vrms from the AC load circuit. The relay is offered in two versions: the JPS10-1Y with a maximum zero voltage turn-on

window of 15 volts (preferred version for resistive loads), and the JPS10-2Y with a maximum window of 40 volts (preferred version for reactive loads).

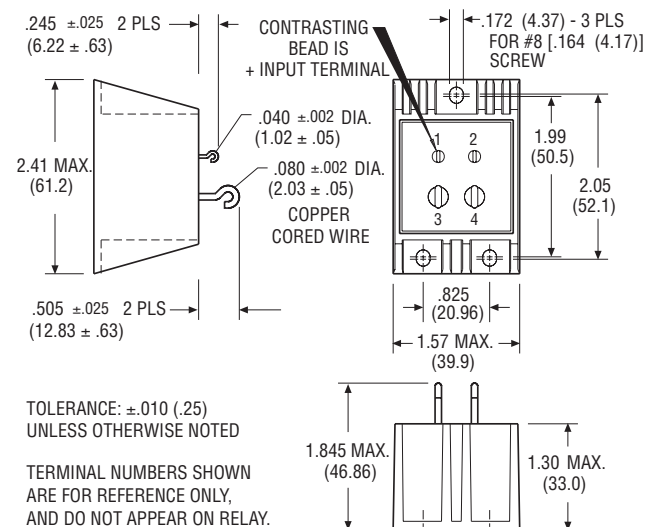
CII Part Number	Military Part Number	Zero Crossing Window
JPS10-1Y	M28750/10-001Y	15 V pk max.
JPS10-2Y	M28750/10-002Y	40 V pk max.

Circuit Diagram

Terminal View



Outline Drawing



JPS10 Series High Performance Solid State Relays (Continued)

Environmental Characteristics

Ambient Temperature Range:

Operating: -55°C to +110°C.

Storage: -55°C to +125°C.

Vibration Resistance:

30 G's, 10-3,000 Hz.

Shock Resistance:

1,500 G's, 0.5 ms pulse.

Constant Acceleration Resistance

(Y1 axis):

5,000 G's.

Mechanical Characteristics

Weight (max.):

6 oz. (170 grams)

Materials:

Case: Aluminum, hot tin dipped

Terminals: Copper cored wire, gold plated.

Electrical Specifications (-55°C to +105°C unless otherwise specified)

Input

Input supply voltage range (Vcc)	4 - 32 Vdc
Input current (max.)	16mA _{dc}
Must turn-on voltage	4V _{dc}
Must turn-off voltage	1V _{dc}
Reverse voltage protection	-32V _{dc}

I/O

Dielectric strength (min.)	1,500V _{rms} /60 Hz.
Insulation resistance (min.) @ 500V _{dc}	10 ⁹ ohms
Capacitance (max.)	20pF

Output

Output current rating (max.)	25A _{rms} (Fig. 2, Note 1)
Surge current (max.)	80A _{pk} (Fig. 1, Note 2)
Continuous load voltage (max.)	250V _{rms}
Transient blocking voltage (max.)	500V _{pk}
Frequency range	45 - 440 Hz.
Output voltage drop (max.) @ 25A load current	1.5V _{rms}
Off-state leakage current (max.) @ 220V _{rms} /400 Hz.	10mA _{rms}
Turn-on time (max.)	1/2 cycle
Turn-off time (max.)	1 cycle
Off-state dv/dt (min.), with snubber	200V /μs (Note 3)
Zero voltage turn-on window (max.), JPS10-1Y	15V _{pk}
Zero voltage turn-on window (max.), JPS10-2Y	40V _{pk}
Waveform distortion (max.)	4V _{rms}
Output chip junction temperature (max.)	125°C (Note 4)
Thermal resistance (max.), junction to ambient	6.8°C/W
Thermal resistance (max.), junction to case	1.2°C/W

Notes

1. Operation at elevated load currents up to 25 amps is dependent on the use of suitable heatsink to maintain case temperature per Fig. 2.
2. Heating of output chips during and after a surge may cause loss of output blocking capability until junction temperature falls below maximum rating.
3. Internal snubber network is provided across output chips.
4. Case temperature measurement point is center of mounting surface.

Figure 1 - Peak Surge Current vs. Surge Current Duration

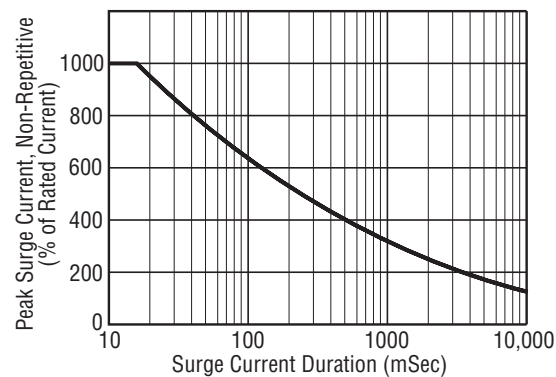
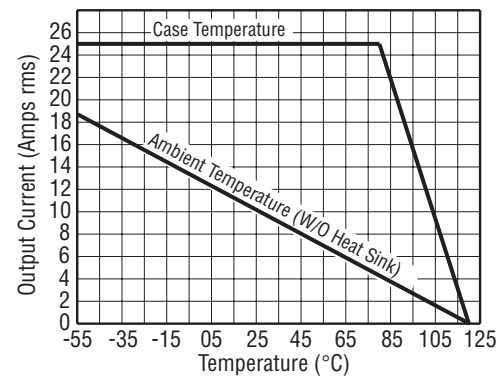


Figure 2 - Load Current vs. Temperature



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