



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

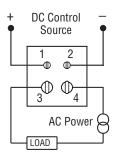
reactive loads. TTL compatible input circuitry is optically isolated to 1,500Vrms from the AC load circuit. The relay is offered in two versions: the JPS10-1Y with a maximum zero voltage turn-on

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).

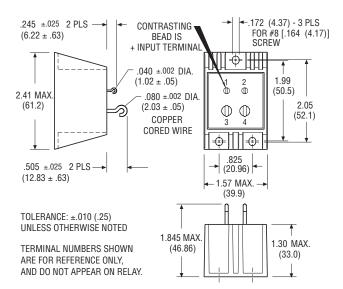
CII Part Number	Military Part Number	Zero Crossing Window
JPS10-1Y	M28750/10-001Y	15 V pk max.
JPS10-2Y	M28750/10-002Y	40 V pk max.

Circuit Diagram

Terminal View



Outline Drawing



© 2005 by Tyco Electronics Corporation. All Rights Reserved. CII and TYCO are trademarks.

www.tycoelectronics.com





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.)	16mAdc	
Must turn-on voltage	4Vdc	
Must turn-off voltage	1Vdc	
Reverse voltage protection	-32Vdc	
1/0		
Dielectric strength (min.)	1,500Vrms/60 Hz.	
Insulation resistance (min.) @ 500Vdc	10 ⁹ ohms	
Capacitance (max.)	20pF	
Output		
Output current rating (max.)	25Arms (Fig. 2, Note 1)	
Surge current (max.)	80A pk (Fig. 1, Note 2)	
Continuous load voltage (max.)	250Vrms	
Transient blocking voltage (max.)	500V pk	
Frequency range	45 - 440 Hz.	
Output voltage drop (max.) @ 25A load current	1.5Vrms	
Off-state leakage current (max.) @ 220Vrms/400 Hz.	10mArms	
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.)	4Vrms	
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

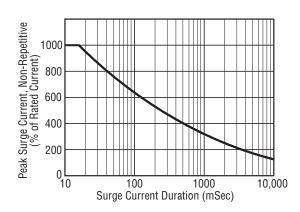
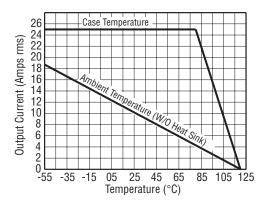


Figure 2 - Load Current vs. Temperature



9-1773439-0-PDF-KRG-4-05