

**TOSHIBA**

**TSS16J48SR**

TOSHIBA SOLID STATE AC RELAY

# TSS16J48SR

OPTICALLY ISOLATED, ZERO VOLTAGE TURN-ON,  
ZERO CURRENT TURN-OFF, NORMALLY OPEN SSR

Unit in mm

- COMPUTOR PERIPHERALS
- MACHINE TOOL CONTROLS
- PROCESS CONTROL SYSTEMS
- TRAFFIC CONTROL SYSTEMS

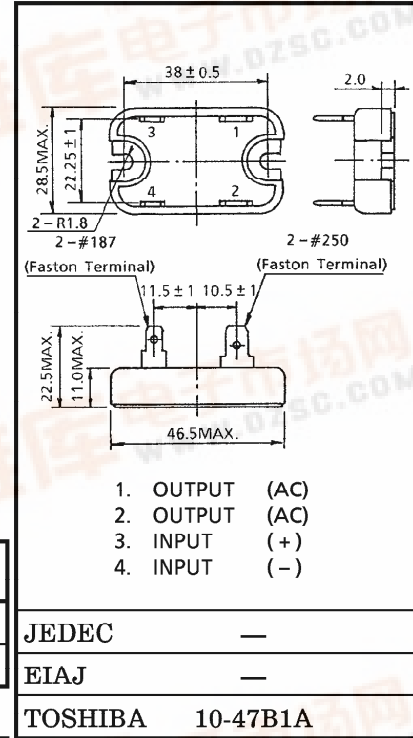
- R.M.S On-State Current :  $I_T$  (RMS) = 16A
- Non-Repetitive Peak Off-State Voltage :  $V_{DSM}$  = 600V
- TTL Compatible
- Including Snubber Network
- Isolation Voltage (t=1min.) : 3750V AC (Input to Output)  
: 1500V AC (Input/Output to Base)

MAXIMUM RATINGS (Ta = 25°C)  
INPUT (CONTROL)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Control Input Voltage (DC) (Note 1)	$V_F$ (IN)	5.5	V
Control Input Current (DC)	$I_F$ (IN)	30	mA

OUTPUT (LOAD)

Non-Repetitive Peak Off-State Voltage	$V_{DSM}$	600	V
Nominal AC Line Voltage	$V_{AC}$	240	V
R.M.S On-State Current	$I_T$ (RMS)	16	A
Peak One Cycle Surge On-State Current (Non-Repetitive)	$I_{TSM}$	150 (50Hz)	A
		165 (60Hz)	
Operating Frequency Range	f	45~65	Hz
Isolation Voltage (t=1min.)	Input to Output	$BV_S$ / AC	V
	Input / Output to Base		
Operating Temperature Range	$T_{opr}$	-20~80	°C
Storage Temperature Range	$T_{stg}$	-30~80	°C
Screw Torque (M3)		0.6	N·m



- Note 1 : Driving input rating: Insert an external resistance into SSR when the power supply over 5.5V is used.
- 2 : Don't dip the SSR body into the organic solvent like Trichloroethylene, when washing the flux on the terminal.
- 3 : For installation of SSR, use spring-washers, etc., to prevent screws from loosening.

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TOSHIBA is continually working to improve the quality and the reliability of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing TOSHIBA products, to observe standards of safety, and to avoid situations in which a malfunction or failure of a TOSHIBA product could cause loss of human life, bodily injury or damage to property. In developing your designs, please ensure that TOSHIBA products are used within specified operating ranges as set forth in the most recent products specifications. Also, please keep in mind the precautions and conditions set forth in the TOSHIBA Semiconductor Reliability Handbook.

ELECTRICAL CHARACTERISTICS (Ta = 25°C)  
INPUT (CONTROL)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Pick Up Voltage	V <sub>FT</sub>	V <sub>AC</sub> = 100Vrms	—	—	4.0	V
Drop Out Voltage	V <sub>FD</sub>	Resistive Load	0.5	—	—	V
Input Resistance	R (IN)		—	160	—	Ω

INPUT (CONTROL)

Off-State Leakage Current	I <sub>OL</sub>	V <sub>AC</sub> = 200Vrms, f = 50Hz	—	—	6.0	mA
Peak On-State Voltage	V <sub>TM</sub>	I <sub>T</sub> (RMS) = 16A	—	—	1.5	V
dv / dt (Off-State)	dv / dt	V <sub>DSTM</sub> = 0.7 × Rated	50	—	—	V / μs
Turn-On Time	t <sub>on</sub>	V <sub>AC</sub> = 100Vrms	—	—	1 / 2	Cycle
Turn-Off Time	t <sub>off</sub>	Resistive Load (Fig.1)	—	—	1 / 2	Cycle
Isolation Resistance	R <sub>s</sub>	V = 500V, RH = 40~60%	10 <sup>10</sup>	—	—	Ω
Thermal Resistance	R <sub>th(j-c)</sub>	AC	—	—	3.5	°C / W

EQUIVALENT CIRCUIT

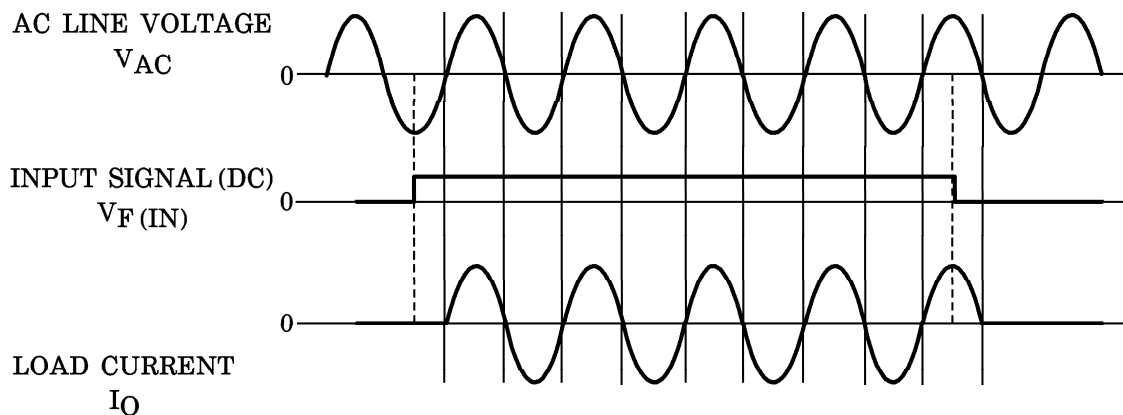
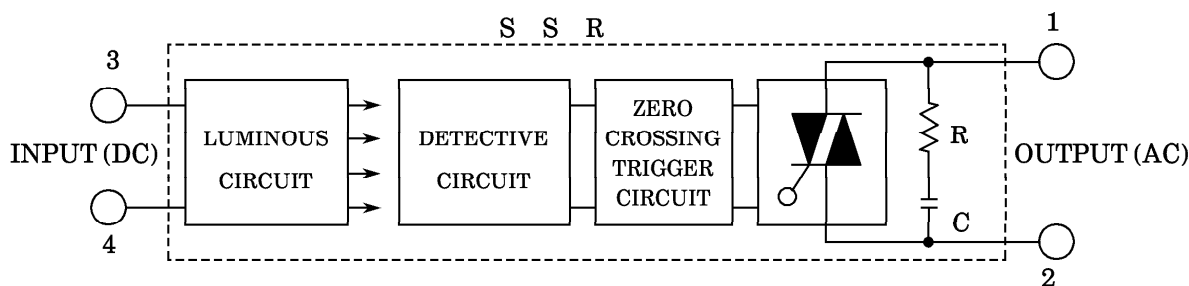


Fig.1. ZERO VOLTAGE SWITCHING WAVEFORM

