

TOSHIBA SOLID STATE AC RELAY

**TSS12J48SR**

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

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

- R.M.S On-State Current :  $I_T(RMS) = 12A$
- Non-Repetitive Peak Off-State Voltage :  $V_{DSM} = 600V$
- TTL Compatible
- Isolation Voltage (t=1min.): 3750V AC (Input to Output)  
: 1500V AC (Input/Output to Base)

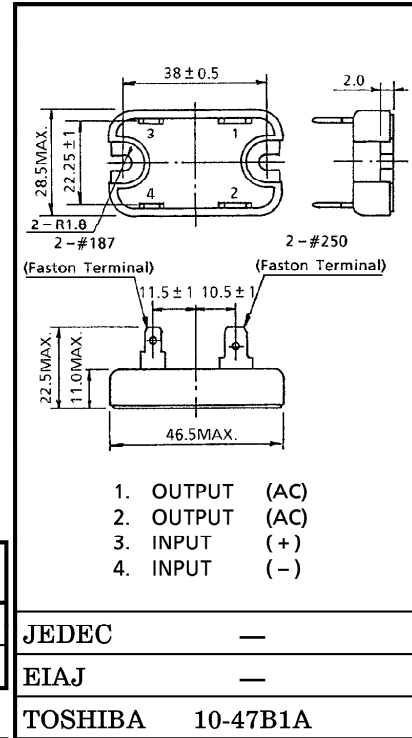
MAXIMUM RATINGS (Ta = 25°C)  
INPUT (CONTROL)

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	$I_T(RMS)$	12	A
Peak One Cycle Surge On-State Current (Non-Repetitive)	$I_{TSM}$	120 (50Hz)	A
		132 (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

Unit in mm



- 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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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 <sub>(IN)</sub>		—	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 (RMS)</sub> = 12A	—	—	1.5	V
dv / dt (Off-State)	dv / dt	V <sub>DSM</sub> = 0.7 × Rated	50	—	—	V / μs
Turn-On Time	t <sub>on</sub>	V <sub>AC</sub> = 100Vrms	—	—	1 / 2	ms
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	—	—	4.8	°C / W

EQUIVALENT CIRCUIT

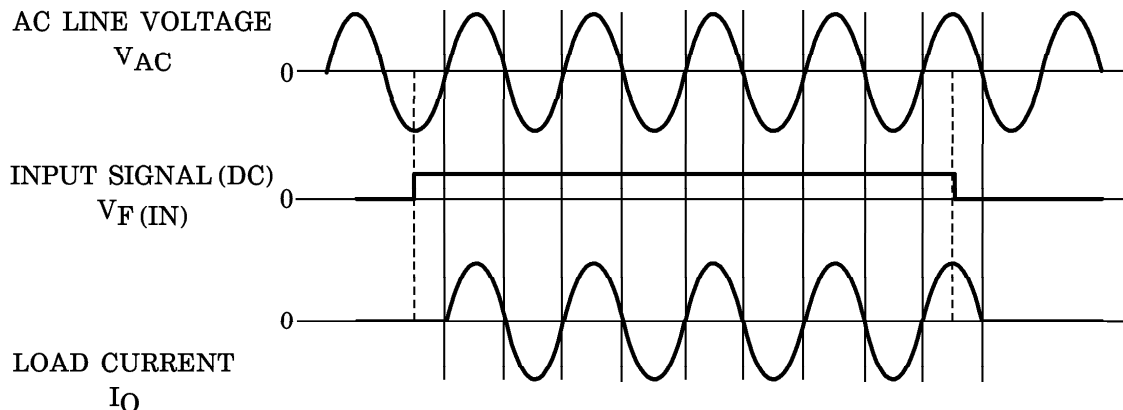
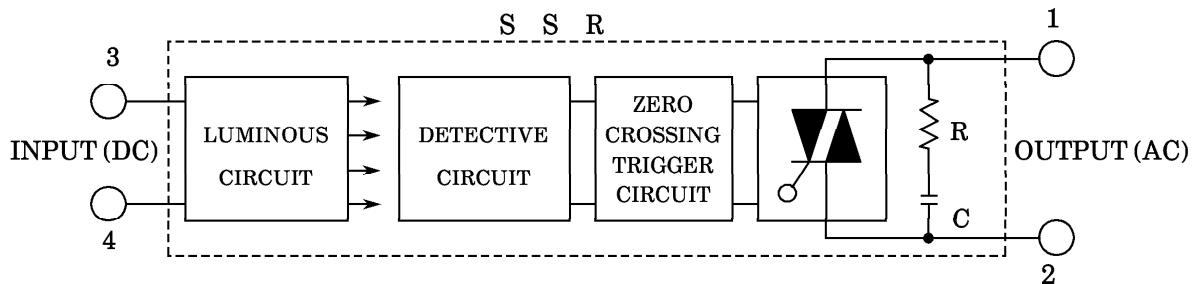


Fig. 1. ZERO VOLTAGE SWITCHING WAVEFORM

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