

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)

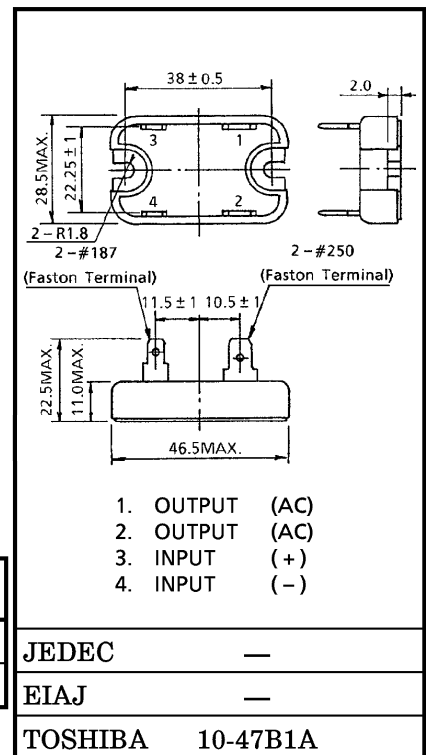
MAXIMUM RATINGS (Ta = 25°C)  
 INPUT (CONTROL)

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.

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

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Pick Up Voltage	$V_{FT}$	$V_{AC} = 100V_{rms}$	—	—	4.0	V
Drop Out Voltage	$V_{FD}$	Resistive Load	0.5	—	—	V
Input Resistance	$R_{(IN)}$		—	160	—	$\Omega$

INPUT (CONTROL)

Off-State Leakage Current	$I_{OL}$	$V_{AC} = 200V_{rms}, f = 50Hz$	—	—	6.0	mA
Peak On-State Voltage	$V_{TM}$	$I_T (RMS) = 12A$	—	—	1.5	V
dv/dt (Off-State)	dv/dt	$V_{DSM} = 0.7 \times \text{Rated}$	50	—	—	V / $\mu s$
Turn-On Time	$t_{on}$	$V_{AC} = 100V_{rms}$	—	—	1 / 2	ms
Turn-Off Time	$t_{off}$	Resistive Load (Fig.1)	—	—	1 / 2	Cycle
Isolation Resistance	$R_g$	$V = 500V, RH = 40 \sim 60\%$	$10^{10}$	—	—	$\Omega$
Thermal Resistance	$R_{th(j-c)}$	AC	—	—	4.8	$^{\circ}C / W$

EQUIVALENT CIRCUIT

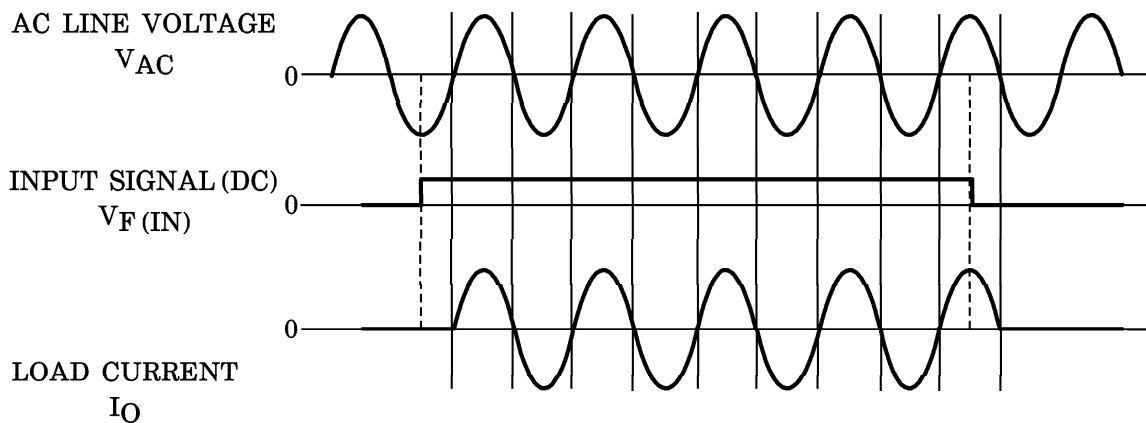
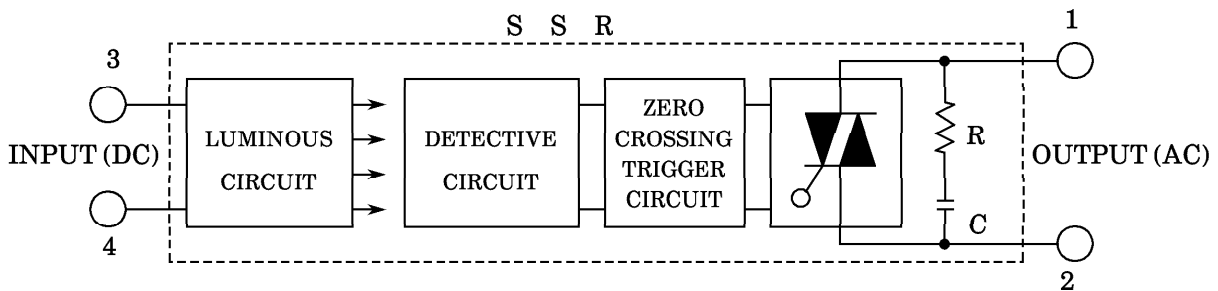
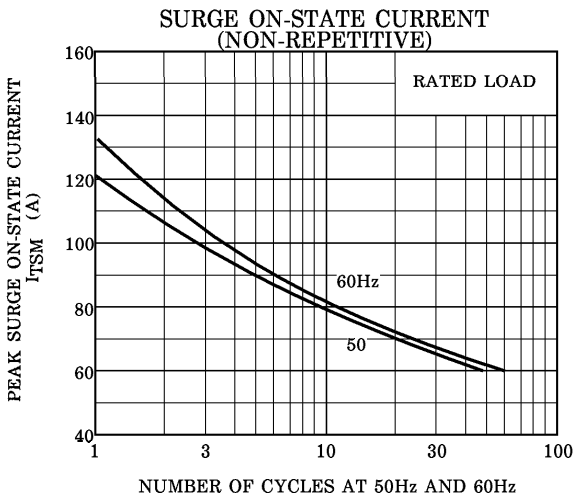
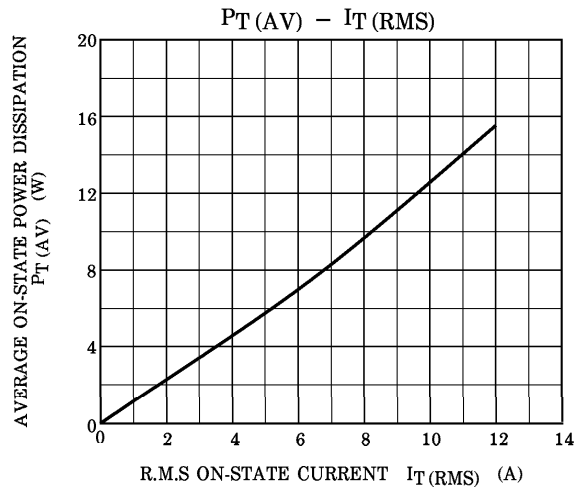
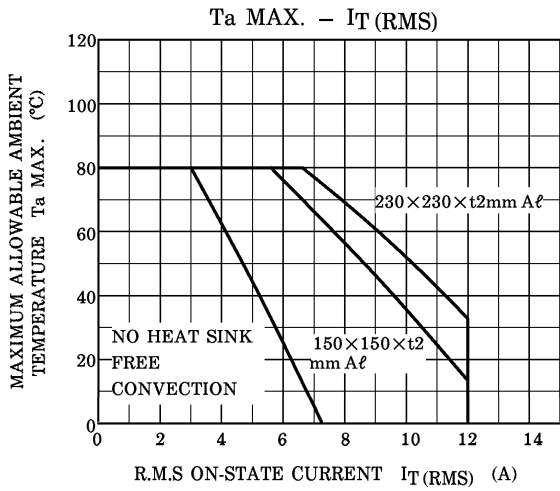


Fig. 1. ZERO VOLTAGE SWITCHING WAVEFORM



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