

## TOSHIBA SOLID STATE AC RELAY

**TSZ12J48SR**

OPTICALLY ISOLATED, NORMALLY OPEN SSR

COMPUTOR PERIPHERALS

MACHINE TOOL CONTROLS

PROCESS CONTROL SYSTEMS

TRAFFIC CONTROL SYSTEMS

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

MAXIMUM RATINGS ( $T_a = 25^\circ\text{C}$ )

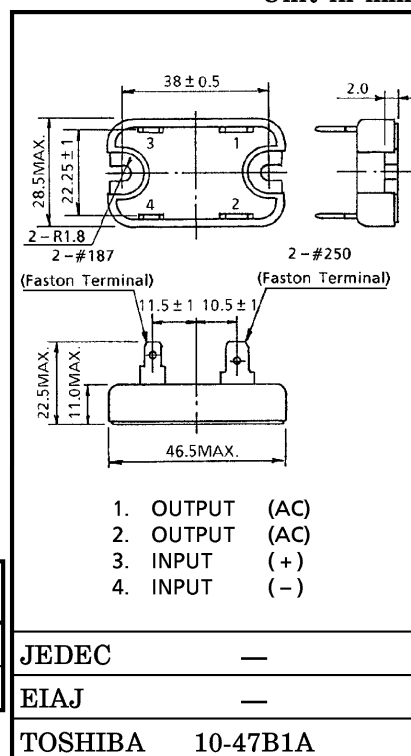
INPUT (CONTROL)

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

OUTPUT (LOAD)

Non-Repetitive Peak Off-State Voltage		$V_{\text{DSM}}$	600	V
Nominal AC Line Voltage		$V_{\text{AC}}$	240	V
R.M.S On-State Current		$I_T(\text{RMS})$	12	A
Peak One Cycle Surge On-State Current (Non-Repetitive)		$I_{\text{TSM}}$	120 (50Hz)	A
			132 (60Hz)	
Operating Frequency Range		$f$	45~65	Hz
Isolation Voltage ( $t = 1\text{min.}$ )	Input to Output	$BV_S / \text{AC}$	3750	V
	Input/Output to Base		1500	
Operating Temperature Range		$T_{\text{opr}}$	-20~80	$^\circ\text{C}$
Storage Temperature Range		$T_{\text{stg}}$	-30~80	$^\circ\text{C}$
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	$V_{FT}$	$V_{AC} = 100V_{rms}$ Resistive Load	—	—	4.0	V
Drop Out Voltage	$V_{FD}$		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	$t_{on}$	$V_{AC} = 100V_{rms}$ Resistive Load (Fig.1)	—	—	1	ms
Turn-Off Time	$t_{off}$		—	—	1 / 2	Cycle
Isolation Resistance	$R_s$	$V = 500V$ , $RH = 40 \sim 60\%$	$10^{10}$	—	—	$\Omega$
Thermal Resistance	$R_{th(j-c)}$	AC	—	—	4.8	$^{\circ}C / W$

EQUIVALENT CIRCUIT

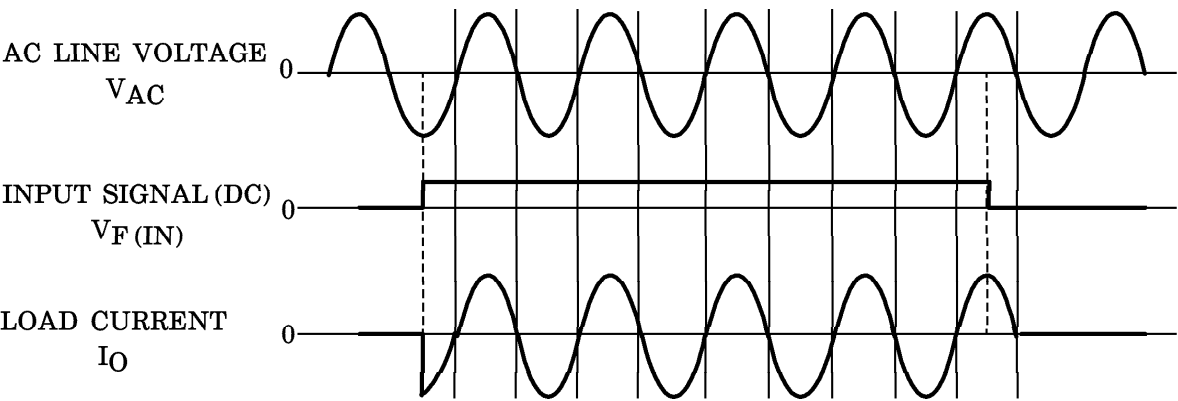
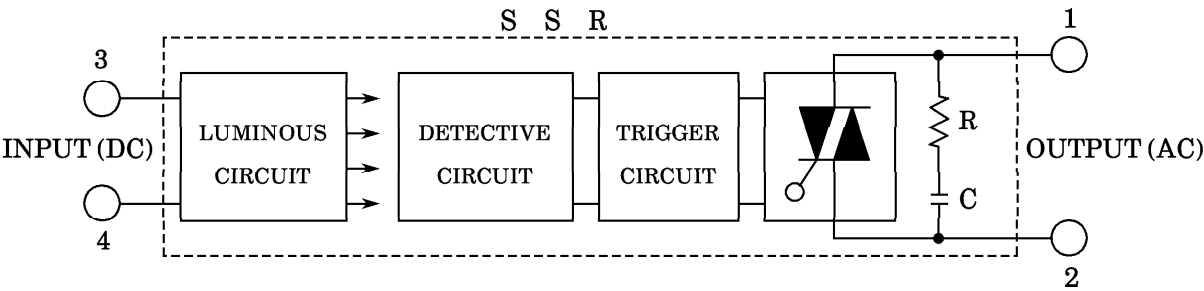
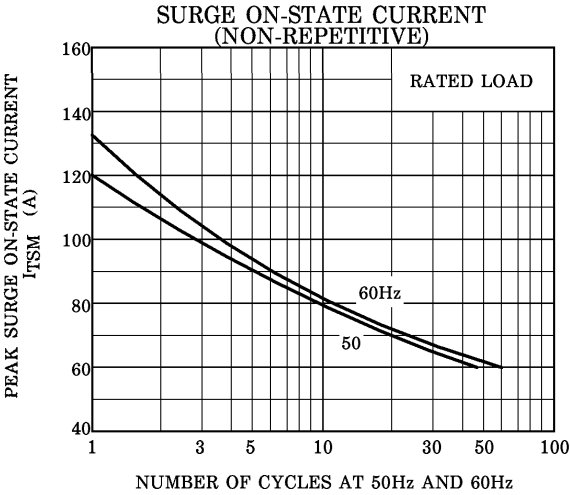
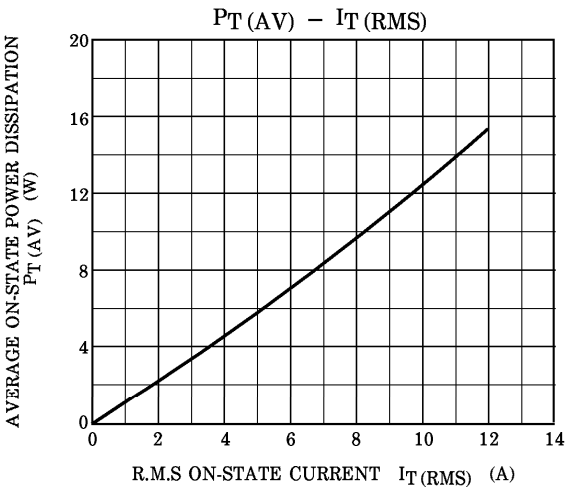
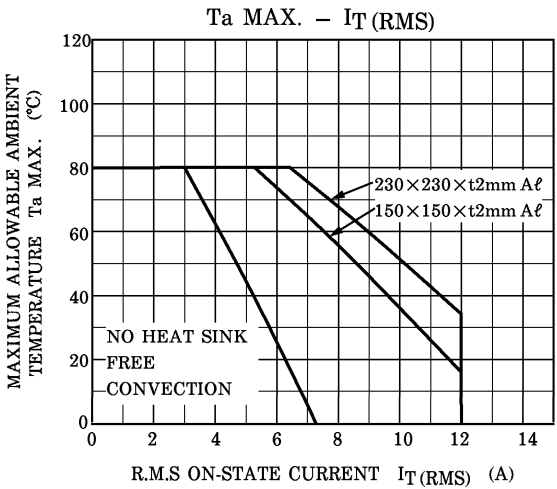


Fig.1 SWITCHING WAVEFORM



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