

TOSHIBA SOLID STATE AC RELAY

TSS12G48S, TSS12J48S

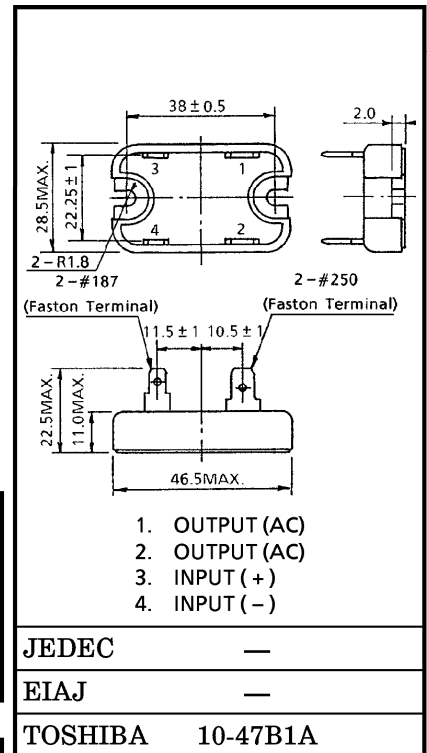
○ OPTICALLY ISOLATED, ZERO VOLTAGE TURN-ON, ZERO CURRENT TURN-OFF, NORMALLY OPEN SSR.

Unit in mm

COMPUTOR PERIPHERALS
MACHINE TOOL CONTROLS
PROCESS CONTROL SYSTEMS
TRAFFIC CONTROL SYSTEMS

- R. M. S On-State Current : I_T (RMS) = 12A
- Non-Repetitive Peak Off-State Voltage : V_{DSM} = 400, 600V
- TTL Compatible
- Including Snubber Network
- Isolation Voltage (t=1min.) : 2500V 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	TSS12G48S	V_{DSM}	400	V
	TSS12J48S		600	
Nominal AC Line Voltage	TSS12G48S	V_{AC}	120	V
	TSS12J48S		240	
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	2500	V
	Input/ Output to Base		1500	
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.

**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	—	Ω

OUTPUT (LOAD)

Off-State Leakage Current	TSS12G48S	I_{OL}	$V_{AC}=100V_{rms}, f=50Hz$	—	—	3.0	mA
	TSS12J48S		$V_{AC}=200V_{rms}, f=50Hz$	—	—	6.0	
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/ μs
Turn-On Time	t_{on}	$V_{AC}=100V_{rms}$		—	—	1/2	Cycle
Turn-Off Time	t_{off}	Resistive Load (Fig. 1)		—	—	1/2	Cycle
Isolation Resistance	R_s	$V=500V, RH=40\sim 60\%$		10^{10}	—	—	Ω
Thermal Resistance	$R_{th(j-c)}$	AC		—	—	4.8	$^{\circ}C/W$

EQUIVALENT CIRCUIT

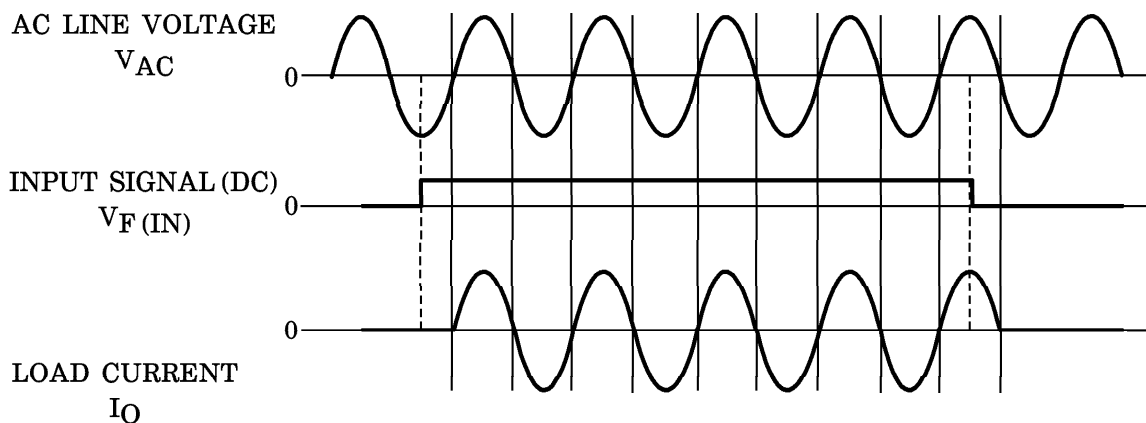
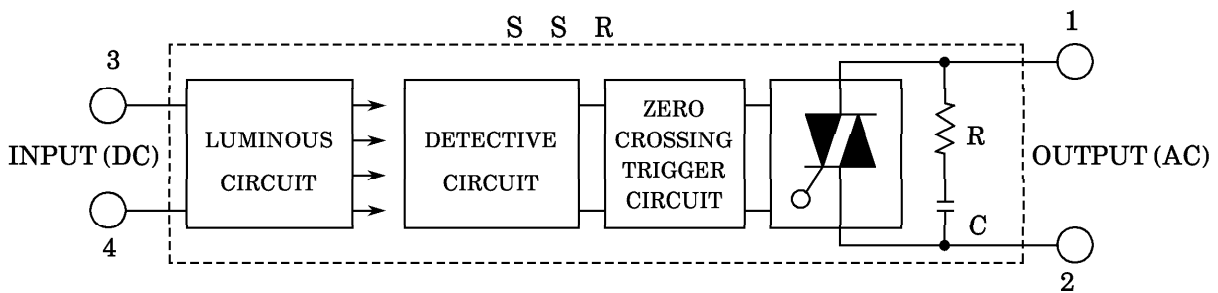
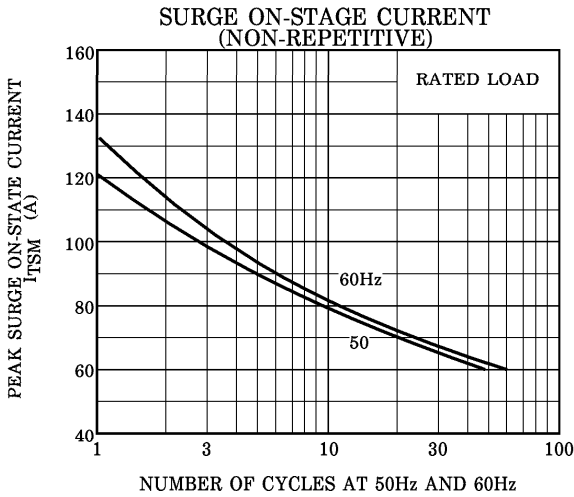
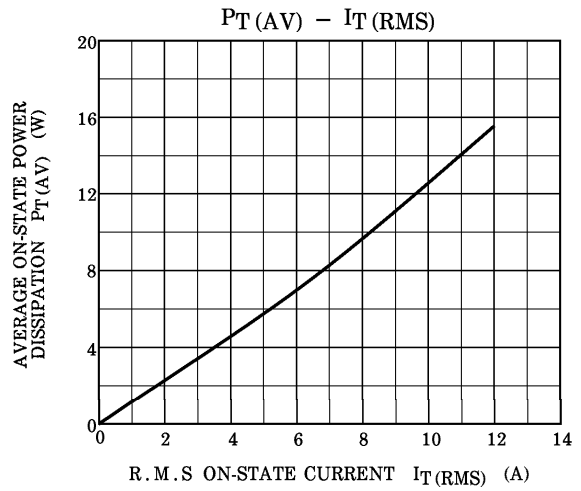
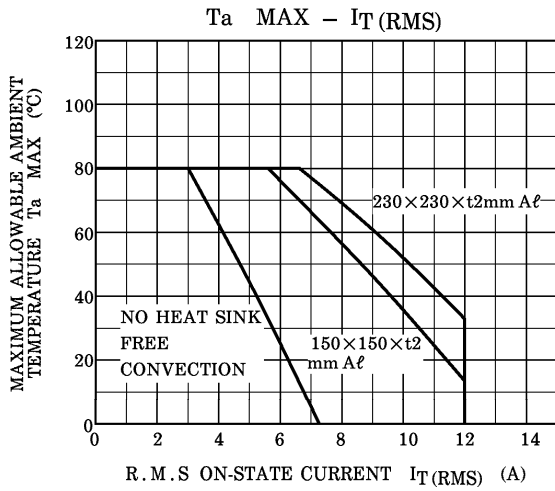


Fig. 1. ZERO VOLTAGE SWITCHING WAVEFORM



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