

TOSHIBA SOLID STATE AC RELAY

TSZ12G48S, TSZ12J48S

○ OPTICALLY ISOLATED, NORMALLY OPEN SSR.

Unit in mm

COMPUTOR PERIPHERALS
MACHINE TOOL CONTROLS
PROCESS CONTROL SYSTEMS
TRAFFIC CONTROL SYSTEMS

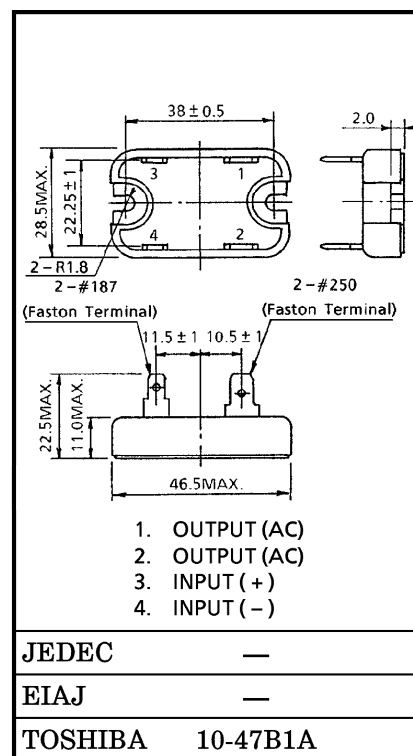
- R. M. S On-State Current : $I_T(\text{RMS}) = 12\text{A}$
- Non-Repetitive Peak Off-State Voltage : $V_{\text{DSM}} = 400, 600\text{V}$
- TTL Compatible
- Including Snubber Network
- Isolation Voltage ($t=1\text{min.}$) : 2500V AC (Input to Output)
: 1500V AC (Input / Output to Base)

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	TSZ12G48S	V_{DSM}	400	V
	TSZ12J48S		600	
Nominal AC Line Voltage	TSZ12G48S	V_{AC}	120	V
	TSZ12J48S		240	
R. M. S On-State Current		$I_T(\text{RMS})$	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 ($t=1\text{min.}$)	Input to Output	BV_S / AC	2500	V
	Input / Output to Base		1500	
Operating Temperature Range		T_{opr}	-20~80	$^\circ\text{C}$
Storage Temperature Range		T_{stg}	-30~80	$^\circ\text{C}$
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} = 100Vrms	—	—	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	TSZ12G48S TSZ12J48S	I _{OL}	V _{AC} = 100Vrms, f = 50Hz V _{AC} = 200Vrms, f = 50Hz	— —	— —	3.0 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 × Rated		50	—	—	V / μs
Turn-On Time	t _{on}	V _{AC} = 100Vrms	(Fig. 1)	—	—	1	ms
Turn-Off Time	t _{off}	Resistive Load		—	—	1 / 2	Cycle
Isolation Resistance	R _s	V = 500V, RH = 40~60%		10 ¹⁰	—	—	Ω
Thermal Resistance	R _{th(j-c)}	AC		—	—	4.8	°C / W

EQUIVALENT CIRCUIT

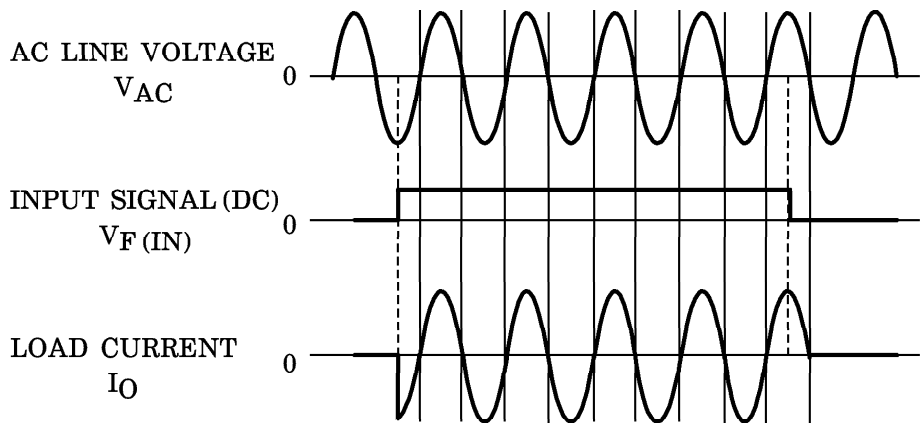
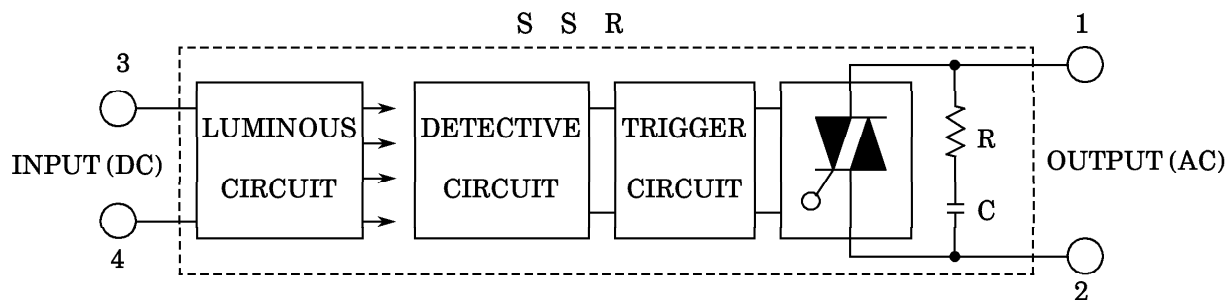
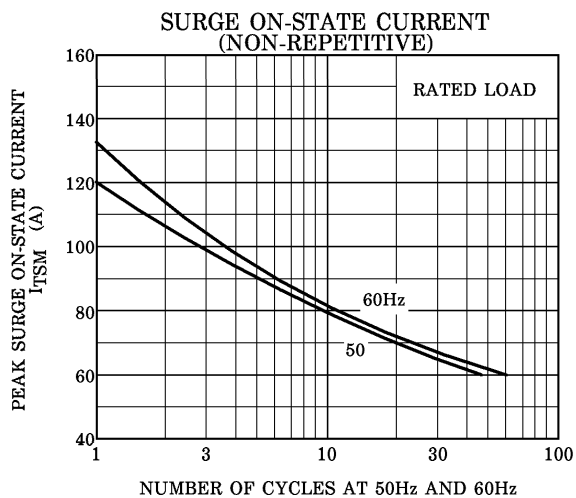
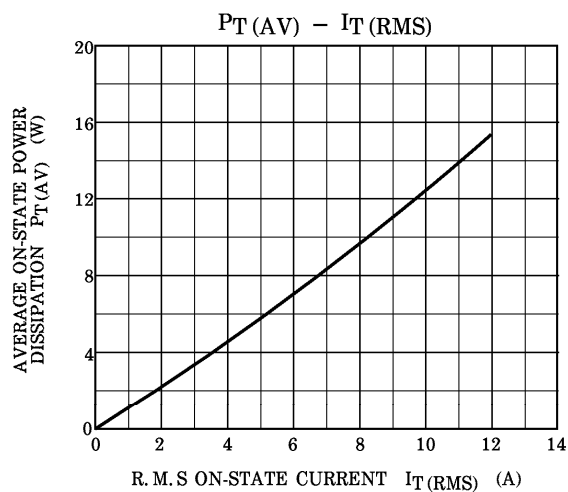
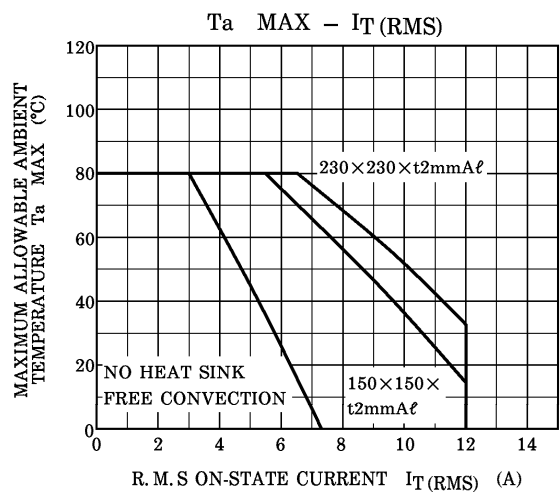


Fig. 1. SWITCHING WAVEFORM



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