

TOSHIBA SOLID STATE AC RELAY

TSS16G48S, TSS16J48S

Unit in mm

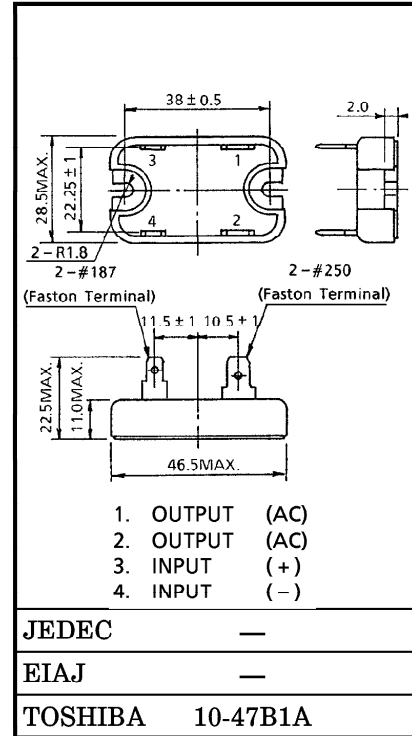
- OPTICALLY ISOLATED, ZERO VOLTAGE TURN-ON, ZERO CURRENT TURN-OFF, NORMALLY OPEN SSR.

COMPUTOR PERIPHERALS
MACHINE TOOL CONTROLS
PROCESS CONTROL SYSTEMS
TRAFFIC CONTROL SYSTEMS

- R. M. S On-State Current : $I_T(RMS) = 16A$
- 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	TSS16G48S	V_{DSM}	400	V
	TSS16J48S		600	
Nominal AC Line Voltage	TSS16G48S	V_{AC}	120	V
	TSS16J48S		240	
R. M. S On-State Current		$I_T(RMS)$	16	A
Peak One Cycle Surge On-State Current (Non-Repetitive)		I_{TSM}	150 (50Hz)	A
			165 (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.

961001EBA2

● TOSHIBA is continually working to improve the quality and the reliability of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing TOSHIBA products, to observe standards of safety, and to avoid situations in which a malfunction or failure of a TOSHIBA product could cause loss of human life, bodily injury or damage to property. In developing your designs, please ensure that TOSHIBA products are used within specified operating ranges as set forth in the most recent products specifications. Also, please keep in mind the precautions and conditions set forth in the TOSHIBA Semiconductor Reliability Handbook.

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

INPUT (CONTROL)

Off-State Leakage Current	TSS16G48S	I_{OL}	$V_{AC}=100V_{rms}, f=50Hz$	—	—	3.0	mA
	TSS16J48S		$V_{AC}=200V_{rms}, f=50Hz$	—	—	6.0	
Peak On-State Voltage	V_{TM}	$I_T(RMS)=16A$	—	—	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	$V=500V, RH=40\sim60\%$	10^{10}	—	—	Ω	
Thermal Resistance	$R_{th(j-c)}$	AC	—	—	3.5	$^{\circ}C/W$	

EQUIVALENT CIRCUIT

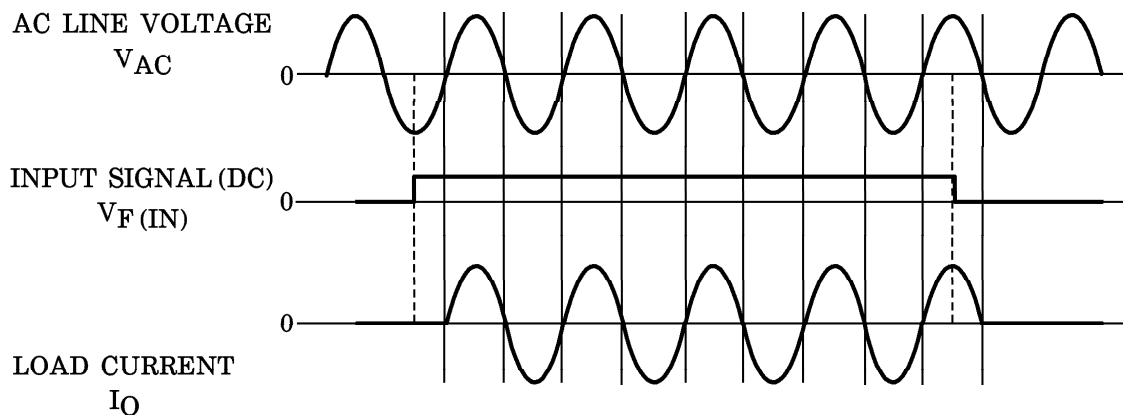
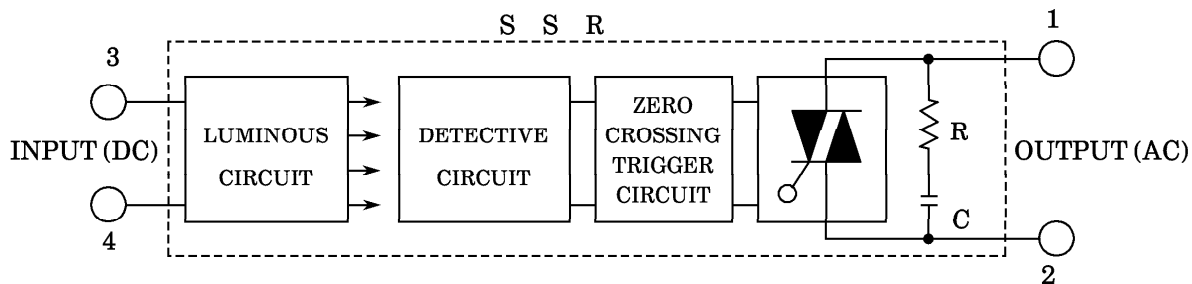


Fig. 1. ZERO VOLTAGE SWITCHING WAVEFORM

961001EBA2'

- The products described in this document are subject to foreign exchange and foreign trade control laws.
- The information contained herein is presented only as a guide for the applications of our products. No responsibility is assumed by TOSHIBA CORPORATION for any infringements of intellectual property or other rights of the third parties which may result from its use. No license is granted by implication or otherwise under any intellectual property or other rights of TOSHIBA CORPORATION or others.
- The information contained herein is subject to change without notice.

