

TOSHIBA SOLID STATE AC RELAY

TSS1G48, TSS1J48

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

Unit in mm

COMPUTER PERIPHERALS
MACHINE TOOL CONTROLS
PROCESS CONTROL SYSTEMS
TRAFFIC CONTROL SYSTEMS

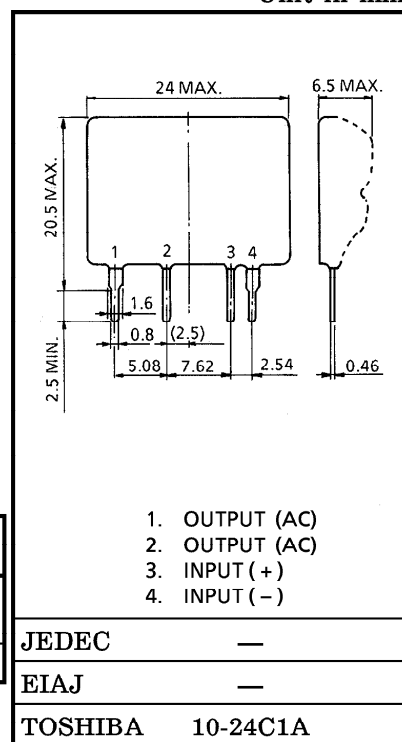
- R.M.S On-State Current : $I_T(\text{RMS}) = 1\text{A}$
- Non-Repetitive Peak Off-State Voltage : $V_{\text{DSM}} = 400, 600\text{V}$
- TTL Compatible
- Isolation Voltage : $2000\text{V AC (}t = 1\text{min.)}$

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	TSS1G48	V _{DSM}	400	V
	TSS1J48		600	
Nominal AC Line Voltage	TSS1G48	V _{AC}	120	V
	TSS1J48		240	
R.M.S On-State Current		I _T (RMS)	1	A
Peak One Cycle Surge On-State Current (Non-Repetitive)		I _{TSM}	20 (50Hz)	A
			22 (60Hz)	
Operating Frequency Range		f	45~65	Hz
Isolation Voltage (t=1min., Input to Output)		BV _S / AC	2000	V
Operating Temperature Range		T _{opr}	−20~80	°C
Storage Temperature Range		T _{stg}	−30~80	°C



Weight : 5g

Note 1 : Driving input rating : Insert an external resistance into SSR when the power supply over 5.5V is used.

Note 2 : Snubber network (C-R) is necessary to protect from surge voltage and dv/dt fire. Snubber network is to be connected between #1 #2 terminal.

Note 3 : Mounting : Soldering of printed wiring board should be used under 260°C and 10 second.

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}	$V_{AC}=100V_{rms}$ Resistive Load	—	—	4.0	V
Drop Out Voltage	V_{FD}		0.5	—	—	V
Input Resistance	$R(IN)$		—	160	—	Ω

OUTPUT (LOAD)

Off-State Leakage Current	TSS1G48	I_{OL}	$V_{AC}=100V_{rms}, f=50Hz$	—	—	0.1	mA
	TSS1J48		$V_{AC}=200V_{rms}, f=50Hz$	—	—	0.2	
Peak On-State Voltage	V_{TM}	$I_T(RMS)=1A$		—	—	1.5	V
dv / dt (Off-State)	dv / dt	$V_{DSM}=0.7\times\text{Rated}$		50	—	—	V / μs
Minimum Load Current	—			100	—	—	mA
Turn-On Time	t_{on}	$V_{AC}=100V_{rms}$ Resistive Load (Fig.1)		—	—	1 / 2	Cycle
Turn-Off Time	t_{off}			—	—	1 / 2	Cycle
Isolation Resistance	R_S	$V=500V, R.H=40\sim60\%$		10^{10}	—	—	Ω

EQUIVALEN CIRCUIT

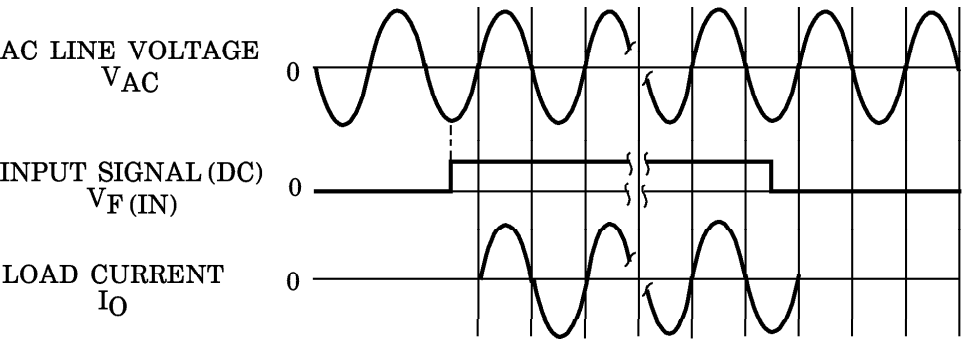
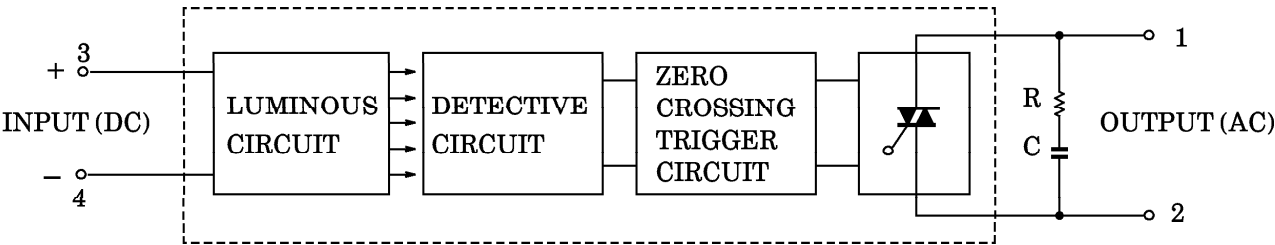


Fig.1 ZERO VOLTAGE SWITCHING WAVEFORM

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.

