

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

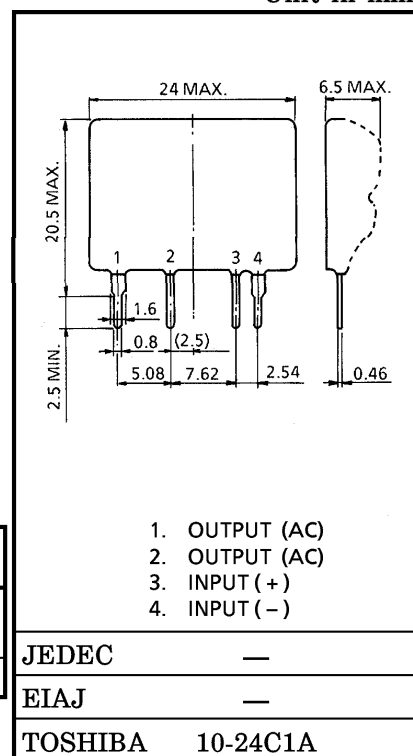
- R.M.S On-State Current : $I_T(\text{RMS}) = 1\text{A}$
- Non-Repetitive Peak Off-State Voltage : $V_{\text{DSM}} = 400, 600\text{V}$
- TTL Compatible
- Isolation Voltage : $2000\text{V AC (}t=1\text{min.)}$

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.

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	$V = 500V, R.H = 40 \sim 60\%$		10^{10}	—	—	Ω

EQUIVALEN CIRCUIT

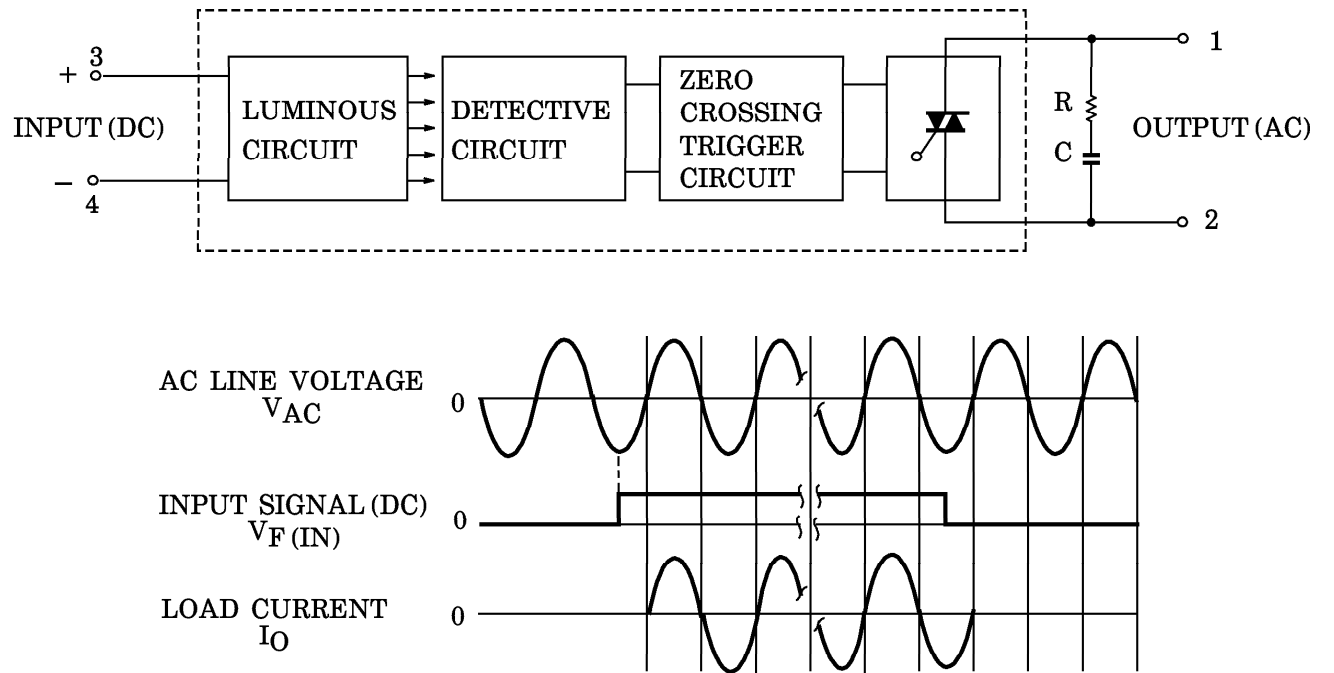
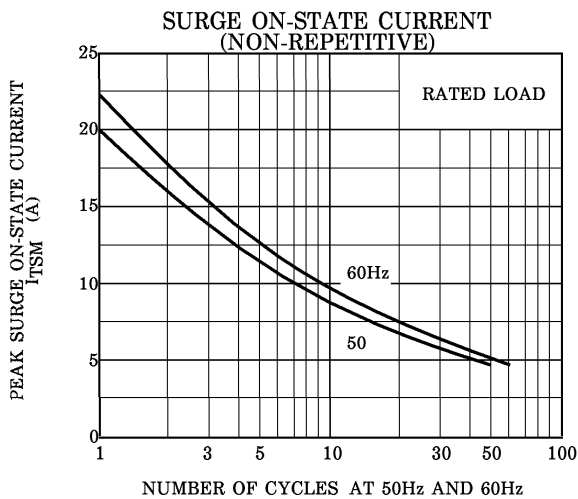
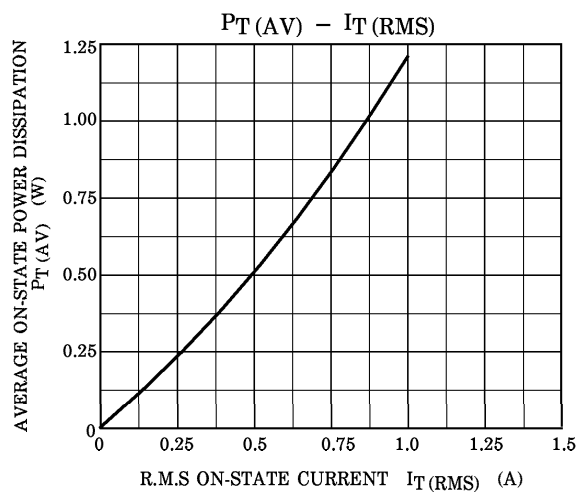
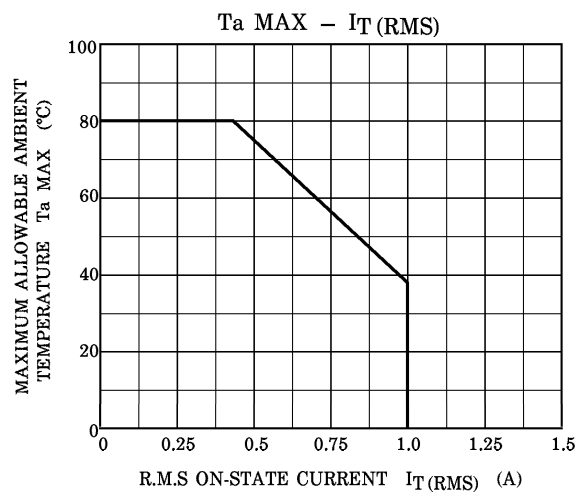


Fig.1 ZERO VOLTAGE SWITCHING WAVEFORM



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