

TOSHIBA SOLID STATE AC RELAY

TSS2G45S, TSS2J45S, TSS2G47S, TSS2J47S

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

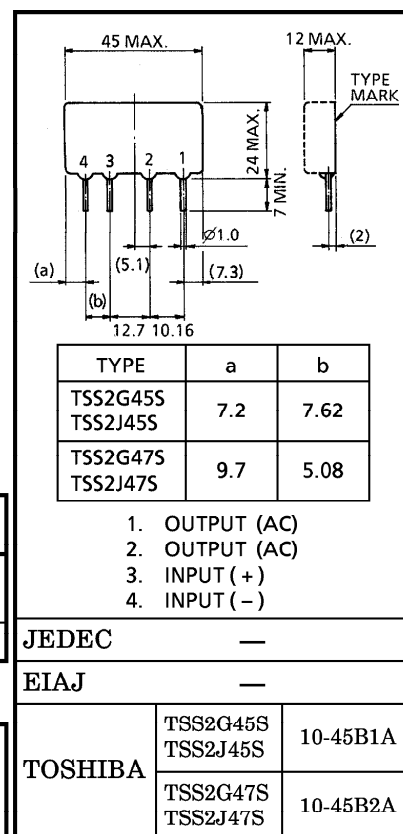
- R.M.S On-State Current : $I_T(\text{RMS}) = 2\text{A}$
- Repetitive Peak Off-State Voltage : $V_{\text{DRM}} = 400, 600\text{V}$
- TTL Compatible
- Isolation Voltage : $2060\text{V AC (}t=1\text{min.)}$
- Including Snubber Network

MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$)
INPUT (CONTROL)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Control Input Voltage (DC) (Note 1)	$V_F(\text{IN})$	6	V
Control Input Current (DC)	$I_F(\text{IN})$	20	mA

OUTPUT (LOAD)

Repetitive Peak Off-State Voltage	TSS2G45S TSS2G47S	V _{DRM}	400	V
	TSS2J45S TSS2J47S		600	
Nominal AC Line Voltage	TSS2G45S TSS2G47S	V _{AC}	120	V
	TSS2J45S TSS2J47S		240	
R.M.S On-State Current (with air velocity 5m / s)		I _T (RMS)	2	A
Peak One Cycle Surge On-State Current (Non-Repetitive)		I _{TSM}	27 (50Hz)	A
Operating Frequency Range		f	45~65	Hz
Isolation Voltage (t=1min., Input to Output)		BV _S / AC	2060	V
Operating Temperature Range		T _{opr}	−30~80	°C
Storage Temperature Range		T _{stg}	−30~80	°C



Weight : 11g

Note 1 : Driving input rating : Insert an external resistance into SSR when the power supply over 6V is used.

Note 2 : Mounting : Soldering of printed wiring board should be used under 260 $^\circ\text{C}$ and 10 second.

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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 ($R_L=100\Omega$)	—	—	4.5	V
Drop Out Voltage	V_{FD}		1.0	—	—	V
Input Resistance	$R(IN)$		—	300	—	Ω

OUTPUT (LOAD)

Off-State Leakage Current	TSS2G45S TSS2G47S	I _{OL}	V _W (RMS)=100V _{rms} , f=50Hz	—	—	1	mA
	TSS2J45S TSS2J47S		V _W (RMS)=200V _{rms} , f=50Hz	—	—	2	
Peak On-State Voltage		V _{TM}	I _{TM} =4.5A	—	—	1.5	V
Peak Turn-On Voltage		V _{ON}	V _{AC} =100V _{rms} (Fig.2)	—	—	5	V
dv / dt (Off-State)		dv / dt	V _{DRM} =0.7×Rated	50	—	—	V / μs
dv / dt (Commutating)		(dv / dt) c	V _{DRM} =0.7×Rated, I _T =2A	2	—	—	V / μs
Turn-On Time		t _{on}	V _{AC} =100V _{rms} Resistive Load (R _L =100Ω)	—	—	1 / 2	Cycle
Turn-Off Time		t _{off}		—	—	1 / 2	Cycle
Isolation Resistance		R _S	V=1kV, R.H=40~60%	—	10 ⁹	—	Ω

EQUIVALEN CIRCUIT

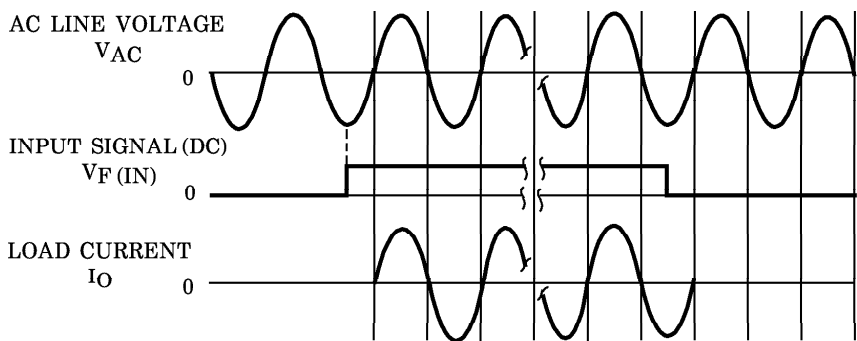
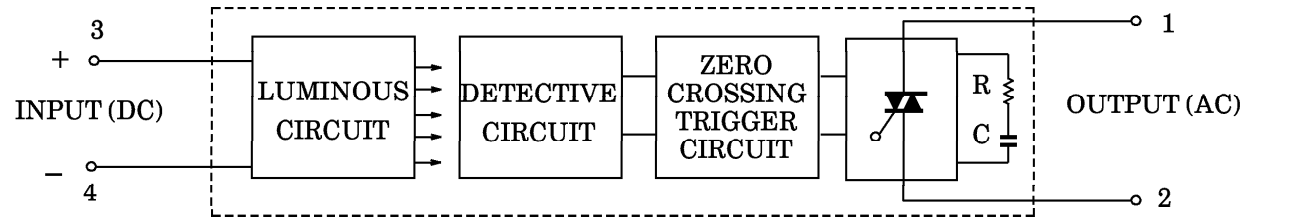


Fig.1 ZERO VOLTAGE SWITCHING WAVEFORM

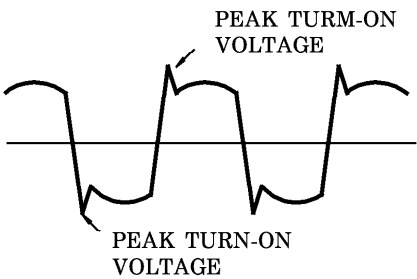


Fig.2 PEAK TURN-ON VOLTAGE WAVEFORM

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