

TOSHIBA SOLID STATE AC RELAY

TSS10G45S, TSS10J45S

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

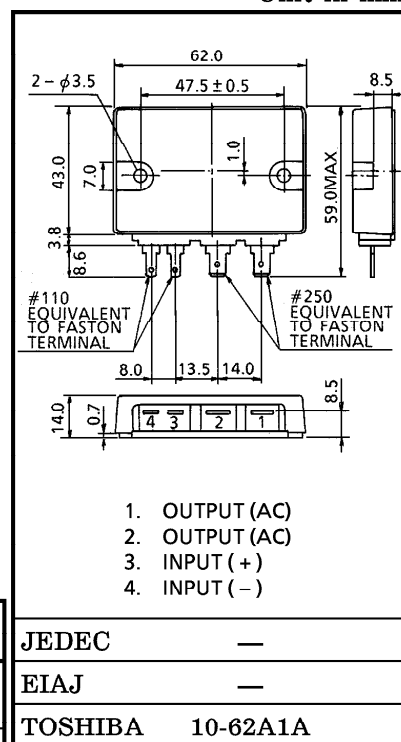
Unit in mm

COMPUTER PERIPHERALS
MACHINE TOOL CONTROLS
PROCESS CONTROL SYSTEMS
TRAFFIC CONTROL SYSTEMS

- R.M.S On-State Current : $I_T(\text{RMS}) = 10\text{A}$
- Repetitive Peak Off-State Voltage : $V_{\text{DRM}} = 400, 600\text{V}$
- TTL Compatible
- Isolation Voltage : $1500\text{V AC (t=1min.)}$
- 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



Weight : 50g

OUTPUT (LOAD)

Repetitive Peak Off-State Voltage	TSS10G45S	V _{DRM}	400	V
	TSS10J45S		600	
Nominal AC Line Voltage	TSS10G45S	V _{AC}	120	V
	TSS10J45S		240	
R.M.S On-State Current		I _T (RMS)	10	A
Peak One Cycle Surge On-State Current (Non-Repetitive)		I _{TSM}	100 (50Hz)	A
Operating Frequency Range		f	45~65	Hz
Isolation Voltage (t=1min., Input to Output and Input/Output to Base)		BV _S /AC	1500	V
Operating Temperature Range		T _{opr}	−30~80	°C
Storage Temperature Range		T _{stg}	−30~80	°C

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

Note 2 : Don't dip the SSR body into the organic solvent like Trichloroethylene, when washing the flux on the terminal.

Note 3 : For installation of SSR, use spring-wahers, etc., to prevent screws from loosening.

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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	TSS10G45S	I_{OL}	$V_{AC}=100V_{rms}, f=50Hz$	—	—	7	mA
	TSS10J45S		$V_{AC}=200V_{rms}, f=50Hz$	—	—	14	
Peak On-State Voltage	V_{TM}	$I_{TM}=17A$		—	—	1.9	V
Peak Turn-On Voltage	V_{ON}	$V_{AC}=100V_{rms}$ (Fig.2)		—	—	7	V
dv / dt (Off-State)	dv / dt	$V_{DRM}=0.7\times\text{Rated}$		50	—	—	V / μs
dv / dt (Commutaing)	(dv / dt) c	$V_{DRM}=0.7\times\text{Rated}, I_T=10A$		2	—	—	V / μs
Turn-On Time	t_{on}	$V_{AC} (RMS)=100V_{rms}$ Resistive Load ($R_L=100\Omega$)		—	—	1 / 2	Cycle
Turn-Off Time	t_{off}			—	—	1 / 2	
Isolation Resistance	R_S	$V=1kV, R.H=40\sim60\%$		—	10^9	—	Ω
Thermal Resistance	$R_{th(j-c)}$	AC		—	—	5	$^{\circ}C / W$

EQUIVALEN CIRCUIT

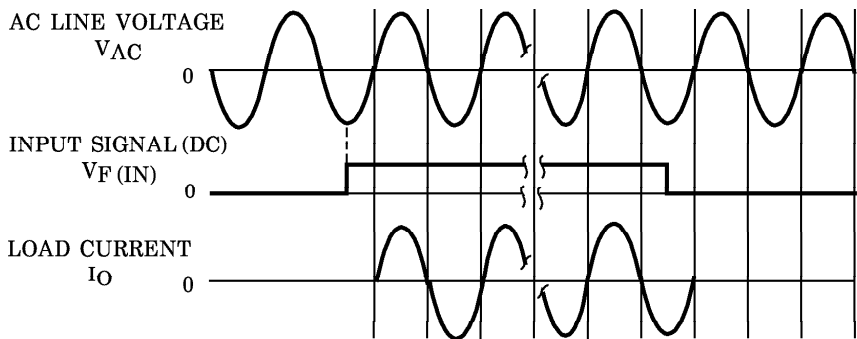
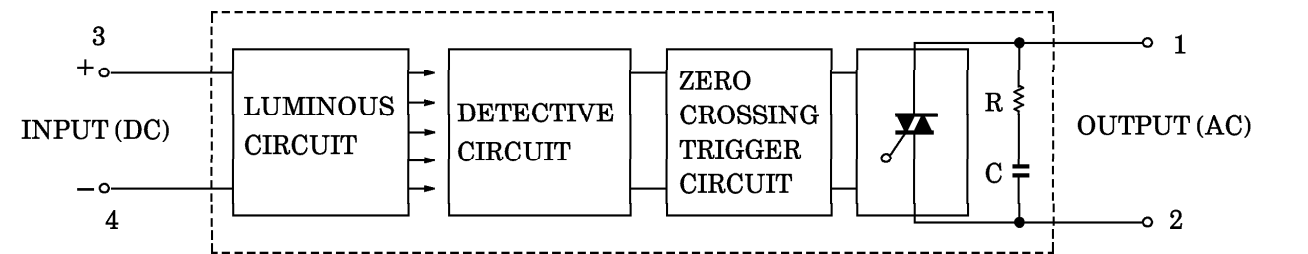


Fig.1 ZERO VOLTAGE SWITCHING WAVEFORM

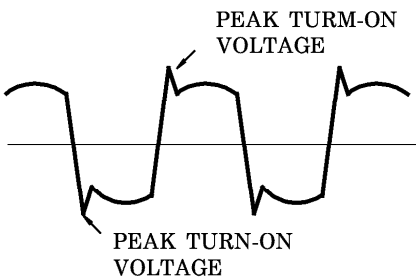


Fig.2 PEAK TURN-ON VOLTAGE WAVEFOM

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