

TOSHIBA SOLID STATE AC RELAY

TSS5G45S, TSS5J45S

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

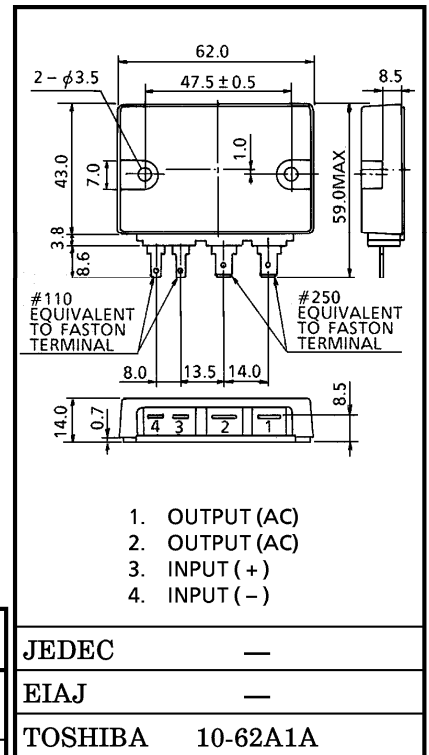
Unit in mm

COMPUTER PERIPHERALS
MACHINE TOOL CONTROLS
PROCESS CONTROL SYSTEMS
TRAFFIC CONTROL SYSTEMS

- R.M.S On-State Current : $I_T(\text{RMS}) = 5\text{A}$
- 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	TSS5G45S	V_{DRM}	400	V
	TSS5J45S		600	
Nominal AC Line Voltage	TSS5G45S	V_{AC}	120	V
	TSS5J45S		240	
R.M.S On-State Current		$I_T(\text{RMS})$	5	A
Peak One Cycle Surge On-State Current (Non-Repetitive)		I_{TSM}	70 (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.

**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	TSS5G45S	I_{OL}	$V_{AC} = 100V_{rms}, f = 50Hz$	—	—	7	mA
	TSS5J45S		$V_{AC} = 200V_{rms}, f = 50Hz$	—	—	14	
Peak On-State Voltage	V_{TM}	$I_{TM} = 12A$	—	—	1.9	V	
Peak Turn-On Voltage	V_{ON}	$V_{AC} = 100V_{rms}, f = 50Hz$ (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	$V_{DRM} = 0.7 \times \text{Rated}, I_T = 8A$	2	—	—	V / μs	
Turn-On Time	t_{on}	$V_{AC} = 100V_{rms}$ Resistive Load ($R_L = 100\Omega$)	—	—	1 / 2	Cycle	
Turn-Off Time	t_{off}		—	—	1 / 2		
Isolation Resistance	R_S	$V = 1kV, R.H = 40 \sim 60\%$	—	10^9	—	Ω	
Thermal Resistance	$R_{th(j-c)}$	AC	—	—	5	$^{\circ}C / W$	

EQUIVALEN CIRCUIT

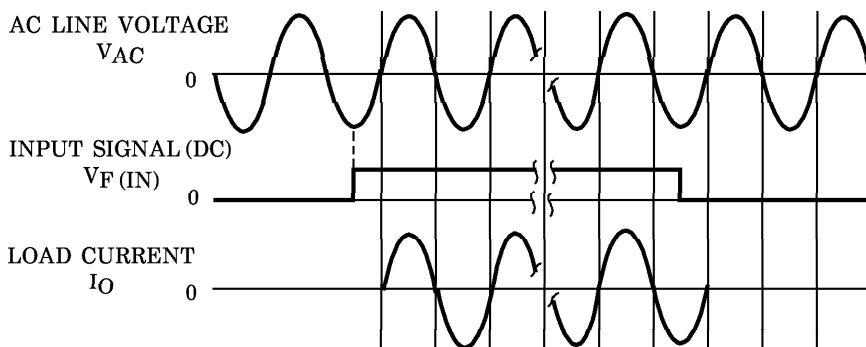
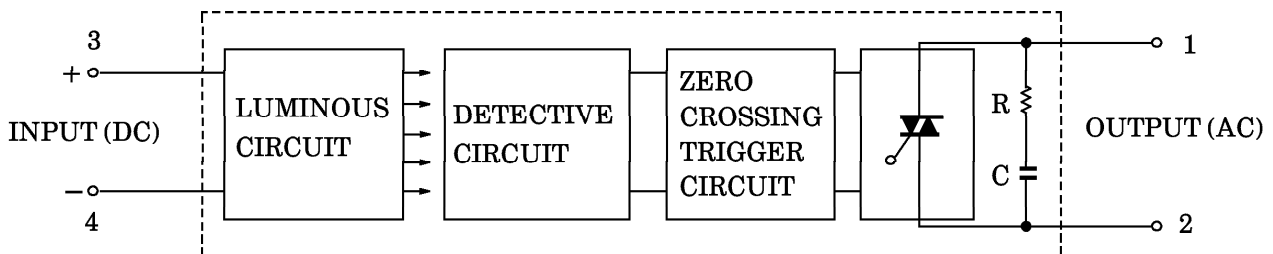


Fig.1 ZERO VOLTAGE SWITCHING WAVEFORM

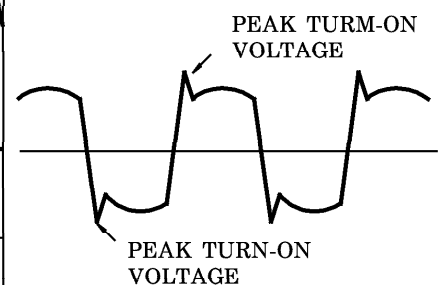
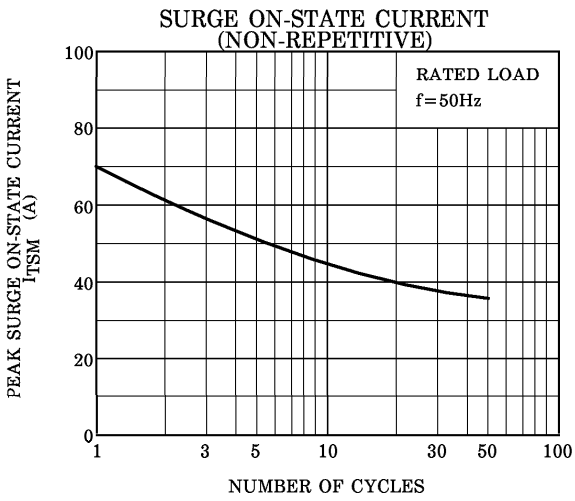
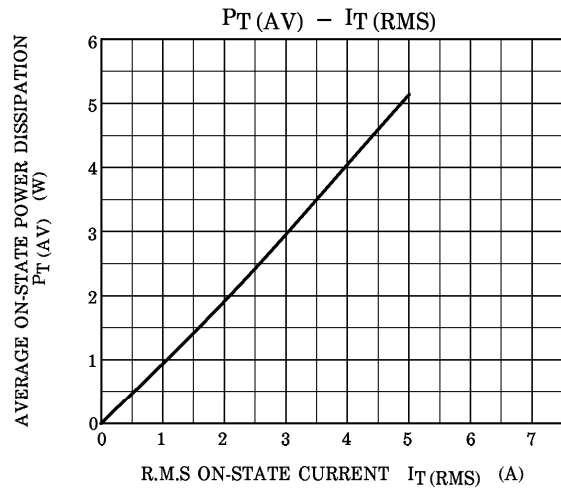
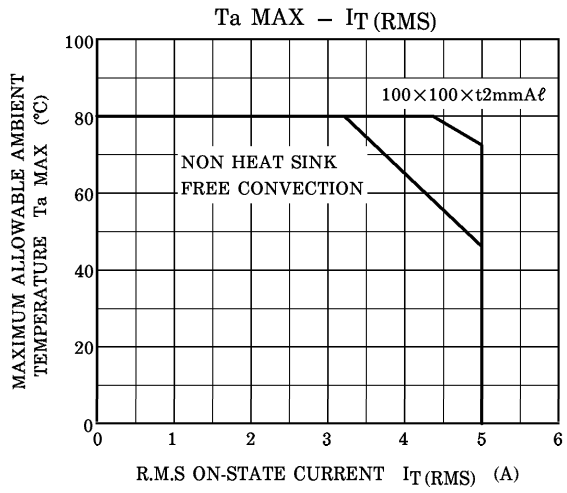


Fig.2 PEAK TURN-ON VOLTAGE WAVEFORM



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