

TOSHIBA SOLID STATE AC RELAY

TSZ3G45S, TSZ3J45S, TSZ3G47S, TSZ3J47S

OPTICALLY ISOLATED, NORMALLY OPEN SSR

Unit in mm

COMPUTER PERIPHERALS
MACHINE TOOL CONTROLS
PROCESS CONTROL SYSTEMS
TRAFFIC CONTROL SYSTEMS

- R.M.S On-State Current : $I_T(\text{RMS}) = 3\text{A}$
- 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 Sunbber Network

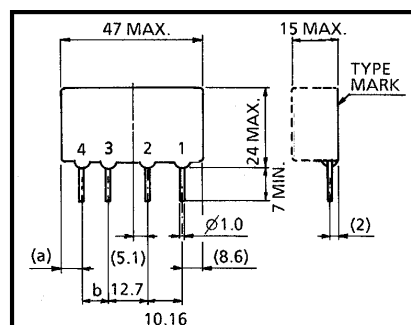
MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$)

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	TSZ3G45S TSZ3G47S	V_{DRM}	400	V
	TSZ3J45S TSZ3J47S		600	
Nominal AC Line Voltage	TSZ3G45S TSZ3G47S	V_{AC}	120	V
	TSZ3J45S TSZ3J47S		240	
R.M.S On-State Current (with air velocity 5m/s)		$I_T(\text{RMS})$	3	A
Peak One Cycle Surge On-State Current (Non-Repetitive)		I_{TSM}	70 (50Hz)	A
Operating Frequency Range		f	45~65	Hz
Isolation Voltage ($t = 1\text{min.}$, Input to Output)		BV_S / AC	2060	V
Operating Temperature Range		T_{opr}	-30~80	$^\circ\text{C}$
Storage Temperature Range		T_{stg}	-30~80	$^\circ\text{C}$



TYPE	a	b
TSZ3G45S TSZ3J45S	7.2	7.62
TSZ3G47S TSZ3J47S	9.7	5.08

1. OUTPUT (AC)
2. OUTPUT (AC)
3. INPUT (+)
4. INPUT (-)

JEDEC

EIAJ

TOSHIBA	TSZ3G45S TSZ3J45S	10-47C1A
	TSZ3G47S TSZ3J47S	10-47C2A

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

OUTPUT (LOAD)

Off-State Leakage Current	TSZ3G45S TSZ3G47S	I_{OL}	$V_{AC} = 100V_{rms}, f = 50Hz$	—	—	2	mA
	TSZ3J45S TSZ3J47S		$V_{AC} = 200V_{rms}, f = 50Hz$	—	—	4	
Peak On-State Voltage	V_{TM}	$I_{TM} = 12A$		—	—	1.9	V
Peak Turn-On Voltage	V_{ON}	$V_{AC} = 100V_{rms}$ (Fig.2)		—	—	10	V
dv / dt (Off-State)	dv / dt	$V_{DRM} = 0.7 \times \text{Rated}$		10	—	—	V / μs
dv / dt (Commutating)	(dv / dt) c	$V_{DRM} = 0.7 \times \text{Rated}, I_T = 3A$		2	—	—	V / μs
Turn-On Time	t_{on}	$V_{AC} = 100V_{rms}$ Resistive Load ($R_L = 100\Omega$)		—	—	1	ms
Turn-Off Time	t_{off}			—	—	1 / 2	Cycle
Isolation Resistance	R_S	$V = 1kV, R.H = 40 \sim 60\%$		—	10^9	—	Ω

EQUIVALEN CIRCUIT

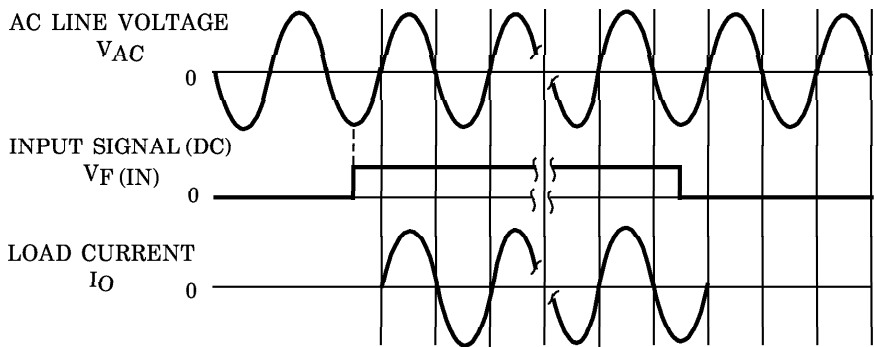
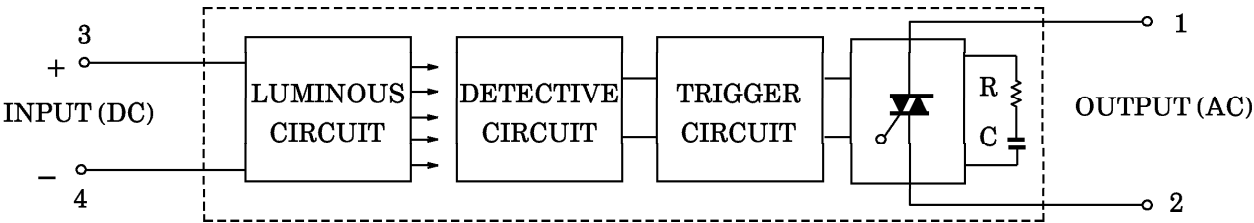


Fig.1 SWITCHING WAVEFORM

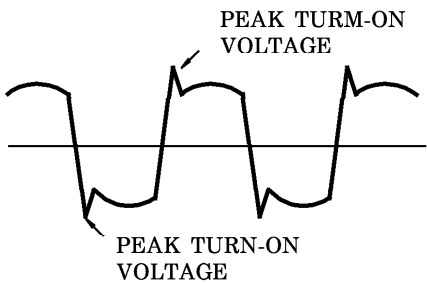
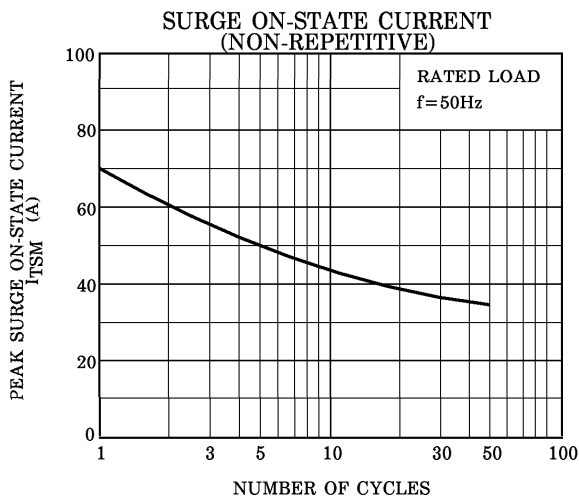
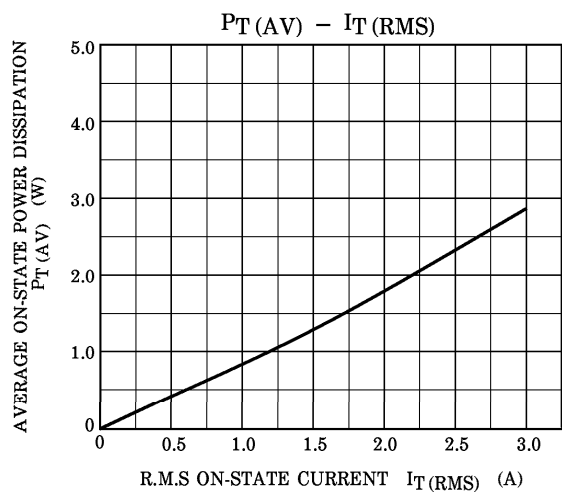
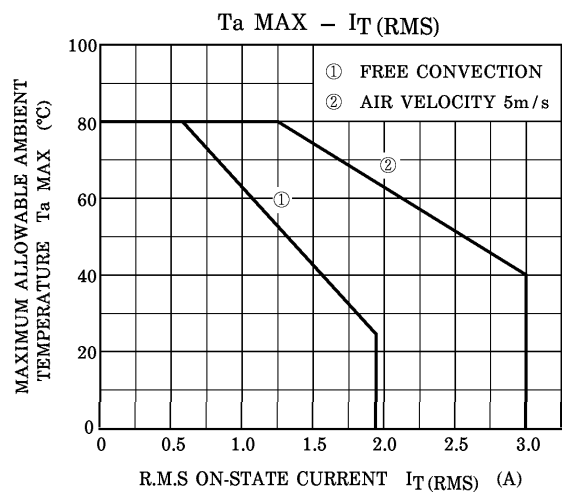


Fig.2 PEAK TURN-ON VOLTAGE WAVEFOM



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