TOSHIBA SOLID STATE AC RELAY

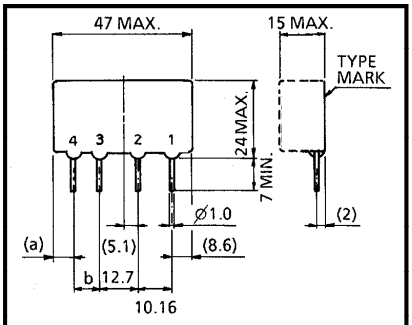
TSZ3G45S, TSZ3J45S, TSZ3G47S, TSZ3J47S

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 : $I_{T\,(RMS)}=3A$
- Repetitive Peak Off-State Voltage : $V_{DRM}=400,\ 600V$
- TTL Compatible
- Isolation Voltage : 2060V AC (t=1min.)
- Including Sunbber Network



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

MAXIMUM RATINGS (Ta = 25°C)

INPUT (CONTROL)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Control Input Voltage (DC) (Note 1)	$V_{F\,(IN)}$	6	V
Control Input Current (DC)	$I_{F\,(IN)}$	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)		$I_{T\,(RMS)}$	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=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

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.

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ELECTRICAL CHARACTERISTICS (Ta = 25°C)

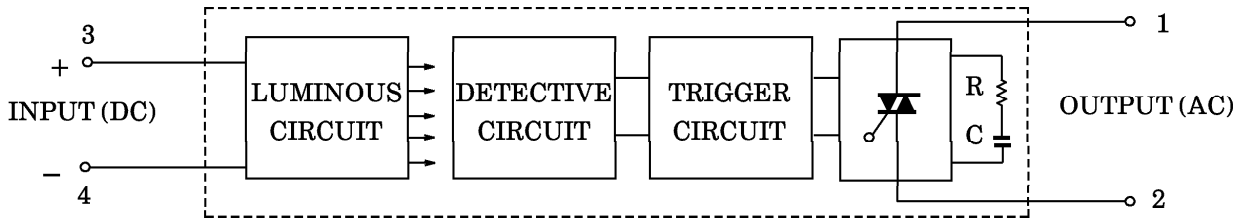
INPUT (CONTROL)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Pick Up Voltage	V_{FT}	V_{AC}=100V_{rms} Resistive Load (R_L=100Ω)	—	—	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}=100Vrms (Fig.2)	—	—	10	V
dv / dt (Off-State)		dv / dt	V_{DRM}=0.7×Rated	10	—	—	V / μs
dv / dt (Commutating)		(dv / dt) c	V_{DRM}=0.7×Rated, I_T=3A	2	—	—	V / μs
Turn-On Time		t_{on}	V_{AC}=100V_{rms} Resistive Load (R_L=100Ω)	—	—	1	ms
Turn-Off Time		t_{off}		—	—	1 / 2	Cycle
Isolation Resistance		R_S	V=1kV, R.H=40~60%	—	10^9	—	Ω

EQUIVALEN CIRCUIT



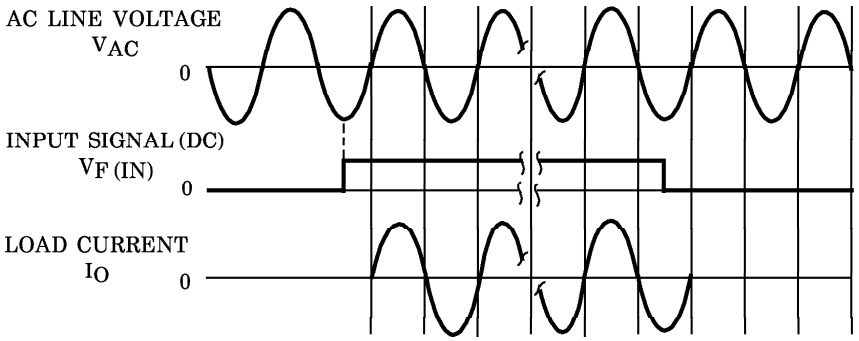


Fig.1 SWITCHING WAVEFORM

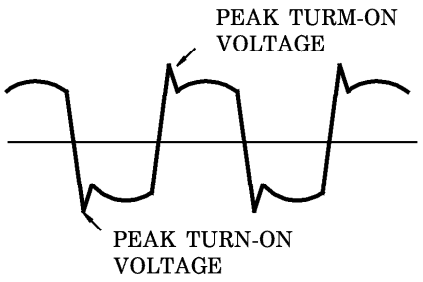


Fig.2 PEAK TURN-ON VOLTAGE WAVEFOM

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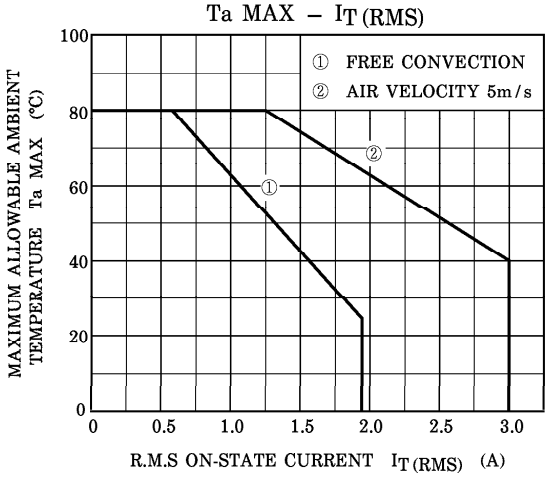
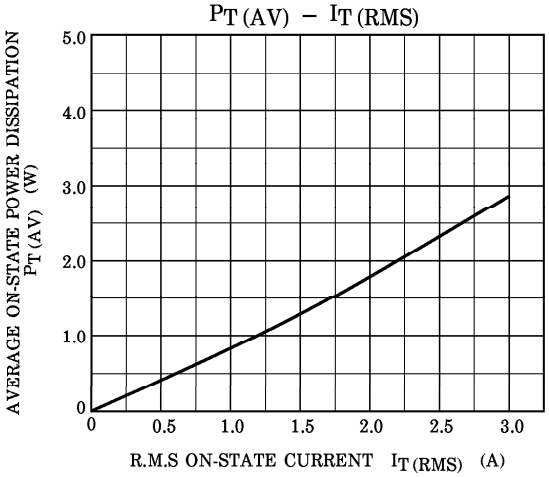
Ta MAX – $I_{T\,(RMS)}$



$P_{T\,(AV)}$ – $I_{T\,(RMS)}$



SURGE ON-STATE CURRENT (NON-REPETITIVE)