

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

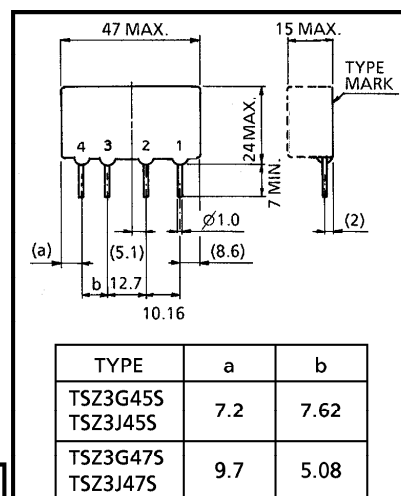
- R.M.S On-State Current : $I_T(\text{RMS}) = 3\text{A}$
- Repetitive Peak Off-State Voltage : $V_{\text{DRM}} = 400, 600\text{V}$
- TTL Compatible
- Isolation Voltage : 2060V AC ($t = 1\text{min.}$)
- Including Sunbber Network

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} (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



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 $^\circ\text{C}$ and 10 second.

961001EBA2

● TOSHIBA is continually working to improve the quality and the reliability of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing TOSHIBA products, to observe standards of safety, and to avoid situations in which a malfunction or failure of a TOSHIBA product could cause loss of human life, bodily injury or damage to property. In developing your designs, please ensure that TOSHIBA products are used within specified operating ranges as set forth in the most recent products specifications. Also, please keep in mind the precautions and conditions set forth in the TOSHIBA Semiconductor Reliability Handbook.

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	$V_{DRM}=0.7\times Rated$		10	—	—	V / μs
dv / dt (Commutating)	(dv / dt) c	$V_{DRM}=0.7\times Rated, I_T=3A$		2	—	—	V / μs
Turn-On Time	t_{on}	$V_{AC}=100V_{rms}$		—	—	1	ms
Turn-Off Time	t_{off}	Resistive Load ($R_L=100\Omega$)		—	—	1 / 2	Cycle
Isolation Resistance	R_S	$V=1kV, R.H=40\sim60\%$		—	10^9	—	Ω

EQUIVALEN CIRCUIT

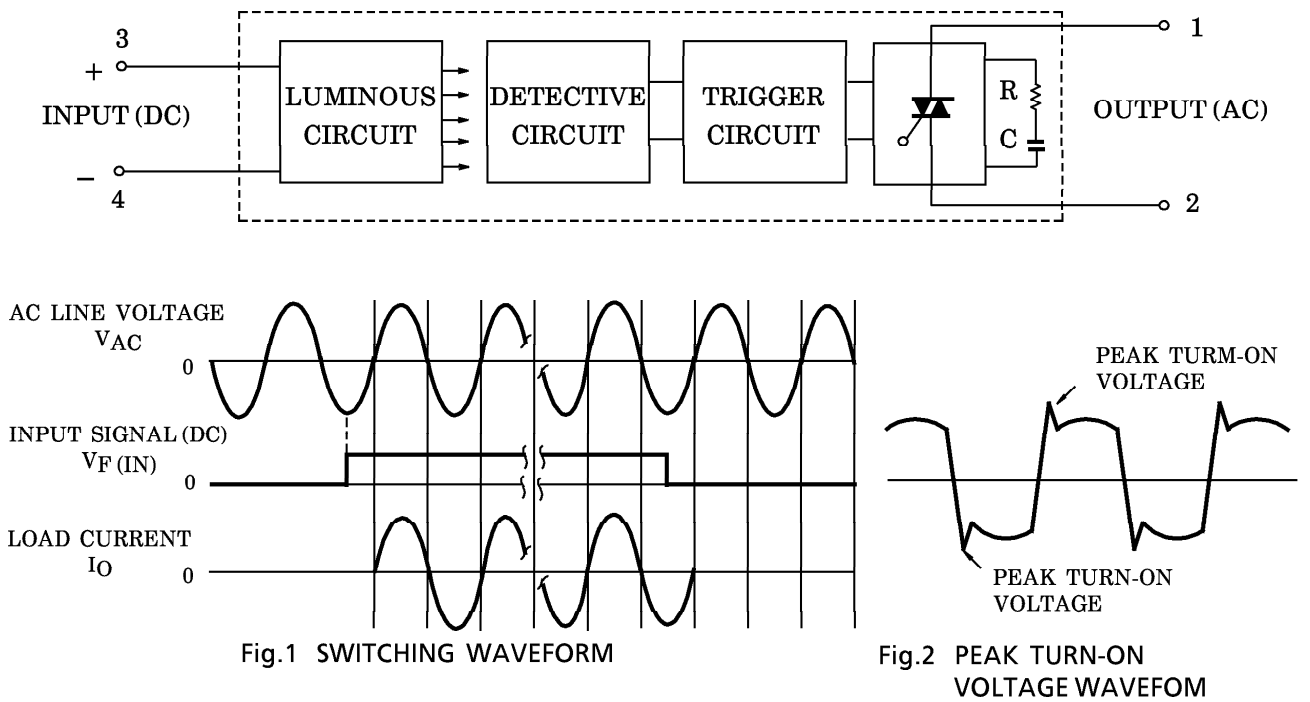


Fig.1 SWITCHING WAVEFORM

Fig.2 PEAK TURN-ON
VOLTAGE WAVEFOM

961001EBA2'

● The products described in this document are subject to foreign exchange and foreign trade control laws.
● The information contained herein is presented only as a guide for the applications of our products. No responsibility is assumed by TOSHIBA CORPORATION for any infringements of intellectual property or other rights of the third parties which may result from its use. No license is granted by implication or otherwise under any intellectual property or other rights of TOSHIBA CORPORATION or others.
● The information contained herein is subject to change without notice.

