

TOSHIBA SOLID STATE AC RELAY

# TSS12G47S, TSS12J47S

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

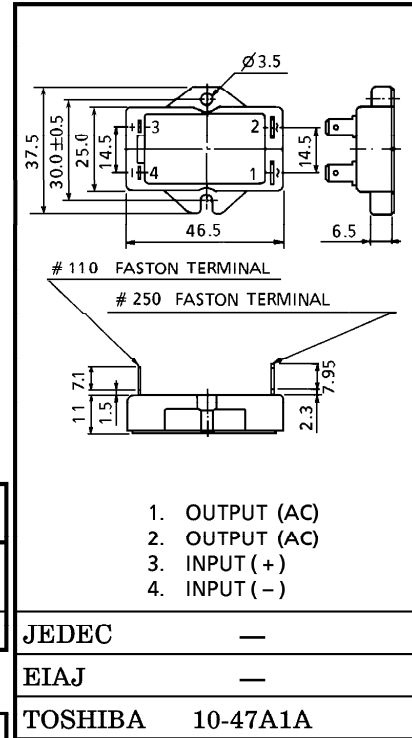
- R.M.S On-State Current :  $I_T$  (RMS) = 12A
- Repetitive Peak Off-State Voltage :  $V_{DRM}$  = 400, 600V
- TTL Compatible
- Isolation Voltage : 2060V AC (t = 1min.)
- Including Snubber Network

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)	25	mA

OUTPUT (LOAD)

Repetitive Peak Off-State Voltage	TSS12G47S	$V_{DRM}$	400	V
	TSS12J47S		600	
Nominal AC Line Voltage	TSS12G47S	$V_{AC}$	120	V
	TSS12J47S		240	
R.M.S On-State Current (with Heat Sink Rth = 1.0°C/W)	Ta = 40°C	$I_T$ (RMS)	12	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	2060	V
Operating Temperature Range		$T_{opr}$	-30~80	°C
Storage Temperature Range		$T_{stg}$	-30~80	°C
Screw Torque (M3)			6	kg·cm



JEDEC	—
EIAJ	—
TOSHIBA	10-47A1A

Weight : 31g

- 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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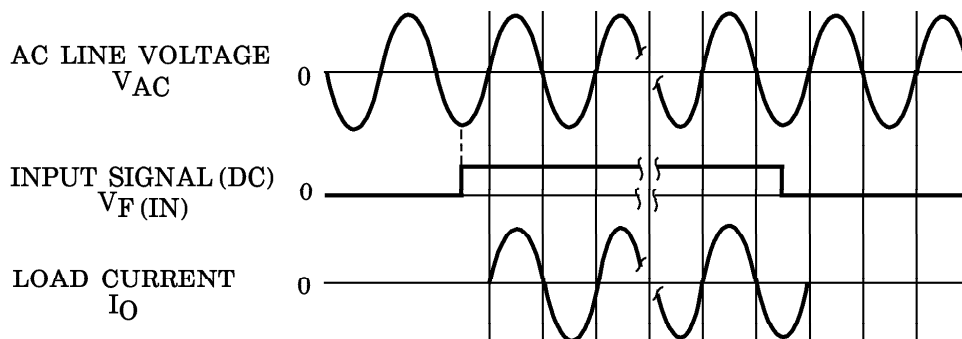
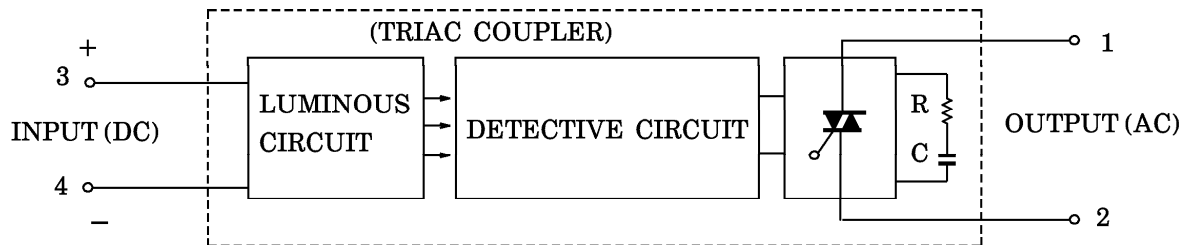
ELECTRICAL CHARACTERISTICS (Ta = 25°C)  
INPUT (CONTROL)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Pick Up Voltage	$V_{FT}$	$V_{AC} = 100V_{rms}$ Resistive Load ( $R_L = 100\Omega$ )	—	—	4.0	V
Drop Out Voltage	$V_{FD}$		1.0	—	—	V
Input Resistance	R (IN)		—	200	—	$\Omega$

OUTPUT (LOAD)

Off-State Leakage Current	TSS12G47S	$I_{OL}$	$V_{AC} = 100V_{rms}, f = 50Hz$	—	—	3.0	mA
	TSS12J47S		$V_{AC} = 200V_{rms}, f = 50Hz$	—	—	6.0	
Peak On-State Voltage	$V_{TM}$	$I_{TM} = 12A$	—	—	1.8	V	
dv / dt (Off-State)	dv / dt	$V_{DRM} = 0.7 \times \text{Rated}$	50	—	—	V / $\mu s$	
dv / dt (Commutating)	(dv / dt) c	$V_{DRM} = 0.7 \times \text{Rated}, I_T = 12A$	2	—	—	V / $\mu s$	
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 = 40~60%	$10^{10}$	—	—	$\Omega$	
Thermal Resistance	$R_{th(j-c)}$	AC	—	—	2.3	$^{\circ}C / W$	

EQUIVALEN CIRCUIT



ZERO VOLTAGE SWITCHING WAVEFORM

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