

TOSHIBA BI-DIRECTIONAL TRIODE THYRISTOR SILICON PLANAR TYPE

SM1L43

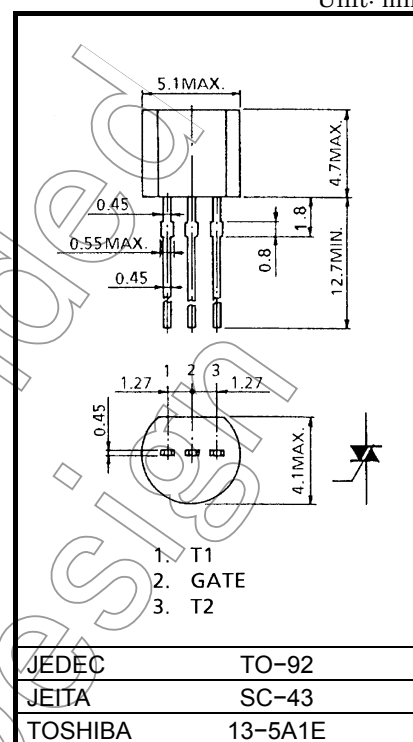
Unit: mm

AC POWER CONTROL APPLICATIONS

- Repetitive Peak Off-State Voltage : $V_{DRM} = 800V$
- R.M.S. On-State Current : $I_T (RMS) = 1A$

ABSOLUTE MAXIMUM RATINGS

CHARACTERISTIC	SYMBOL	RATING	UNIT
Repetitive Peak Off-State Voltage	V_{DRM}	800	V
R.M.S. On-State Current (Full Sine Waveform $T_c = 74^\circ C$)	$I_T (RMS)$	1.0	A
Peak One Cycle Surge On-State Current (Non-Repetitive)	I_{TSM}	8 (50Hz) 8.8 (60Hz)	A
I^2t Limit Value ($t = 1 \sim 10ms$)	I^2t	0.32	A^2s
Peak Gate Power Dissipation	P_{GM}	1	W
Average Gate Power Dissipation	$P_G (AV)$	0.1	W
Peak Gate Voltage	V_{GM}	6	V
Peak Gate Current	I_{GM}	0.5	A
Junction Temperature	T_j	$-40 \sim 125$	$^\circ C$
Storage Temperature Range	T_{stg}	$-40 \sim 125$	$^\circ C$



Weight: 0.2g

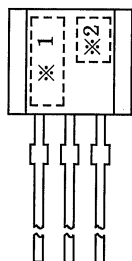
Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings.

Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/Derating Concept and Methods) and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

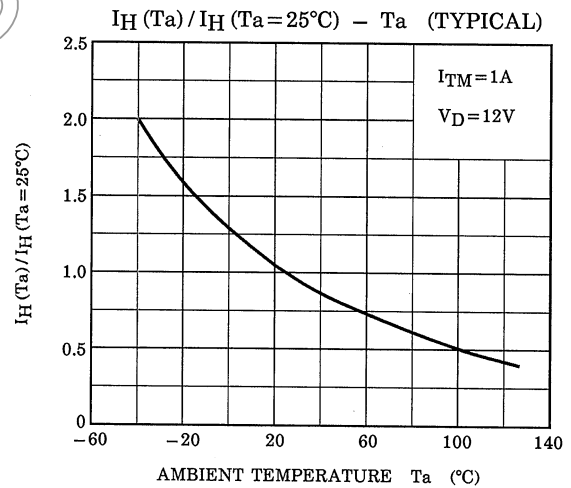
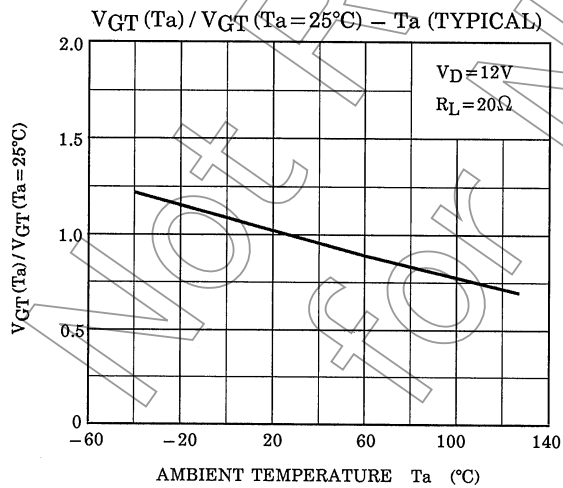
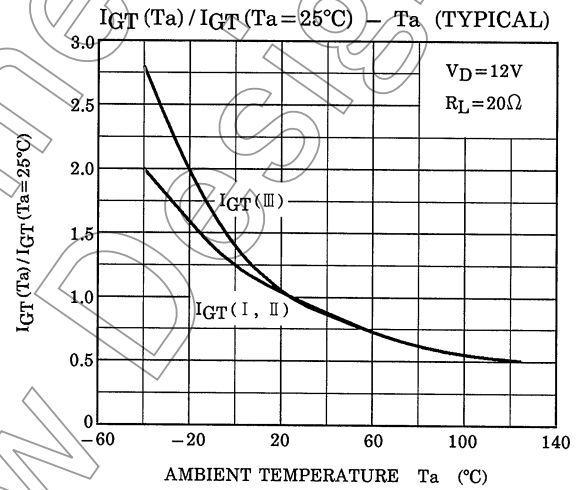
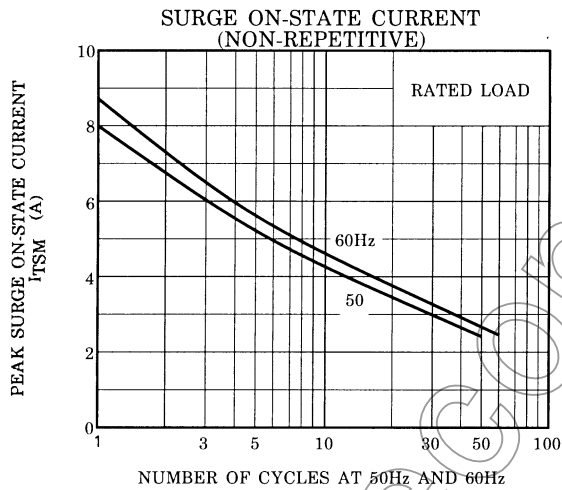
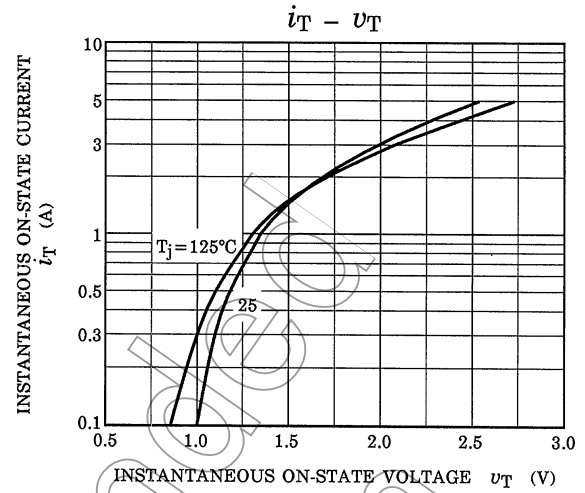
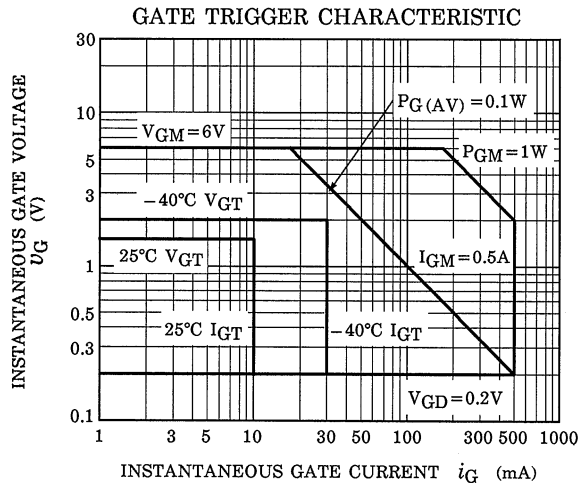
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

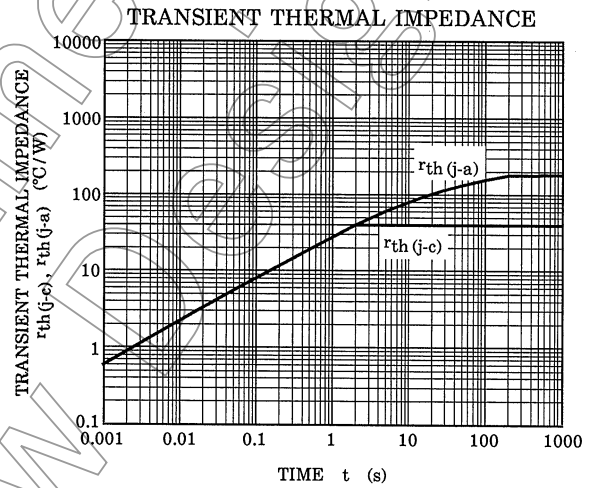
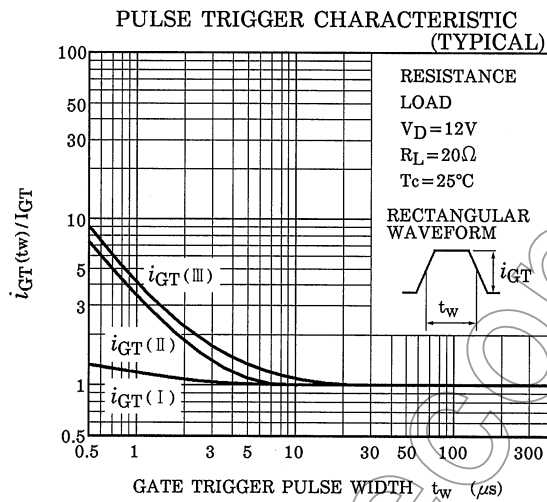
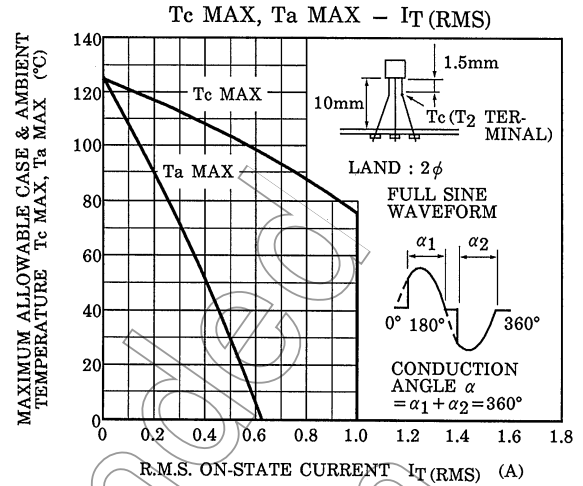
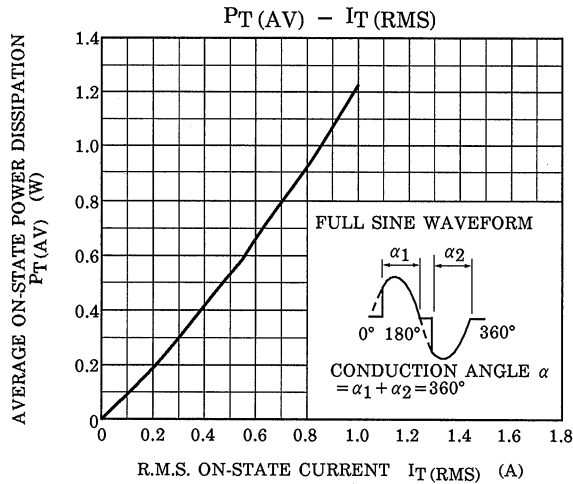
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN	TYP.	MAX	UNIT
Repetitive Peak Off-State Current	I_{DRM}	$V_{DRM} = 800V$	—	—	10	μA
Gate Trigger Voltage	I	$V_D = 12V$, $R_L = 20\Omega$	T2 (+), Gate (+)		—	V
	II		T2 (+), Gate (-)		—	
	III		T2 (-), Gate (-)		—	
Gate Trigger Current	I	$V_D = 12V$, $R_L = 20\Omega$	T2 (+), Gate (+)		—	mA
	II		T2 (+), Gate (-)		—	
	III		T2 (-), Gate (-)		—	
Peak On-State Voltage	V_{TM}	$I_{TM} = 1.5A$	—	—	1.5	V
Gate Non-Trigger Voltage	V_{GD}	$V_D = \text{Rated}$, $T_c = 125^\circ C$	0.2	—	—	V
Holding Current	I_H	$V_D = 12V$, $I_{TM} = 1A$	—	—	10	mA
Thermal Resistance	$R_{th(j-c)}$	Junction to Case, AC	—	—	40	$^\circ C / W$
Thermal Resistance	$R_{th(j-a)}$	Junction to Ambient, AC	—	—	180	$^\circ C / W$

MARKING



NUMBER	SYMBOL	MARK
*1	TYPE	SM1L43
*2	Lot Number Month (Starting from Alphabet A) Year (Last Decimal Digit of the Current Year)	Example 8A : January 1998 8B : February 1998 8L : December 1998





RESTRICTIONS ON PRODUCT USE

20070701-EN

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