

TOSHIBA BI-DIRECTIONAL TRIODE THYRISTOR SILICON PLANAR TYPE

SM1G43, SM1J43

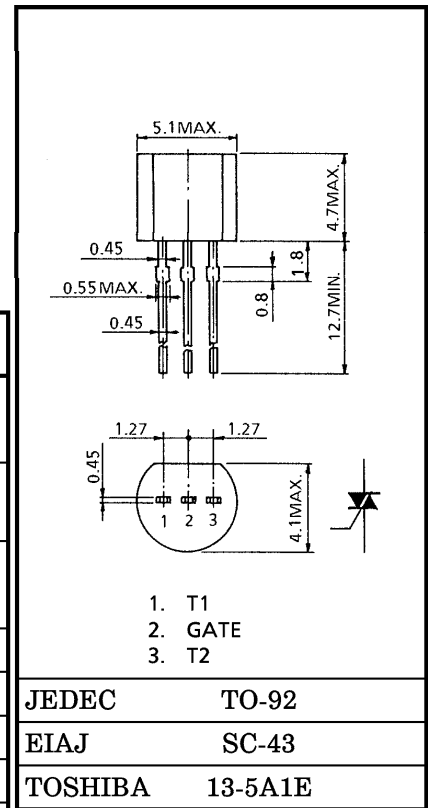
AC POWER CONTROL APPLICATIONS

Unit in mm

- Repetitive Peak Off-State Voltage : $V_{DRM} = 400, 600V$
- R.M.S On-State Current : $I_T (RMS) = 1A$
- Higt Commutating (dv / dt)

MAXIMUM RATINGS

CHARACTERISTIC		SYMBOL	RATING	UNIT
Repetitive Peak Off-State Voltage	SM1G43	V_{DRM}	400	V
	SM1J43		600	
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)	A
			8.8 (60Hz)	
I ² t Limit Value		I^2t	0.32	A ² s
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	-40~125	°C
Storage Temperature Range		T_{stg}	-40~125	°C



Weight : 0.2g

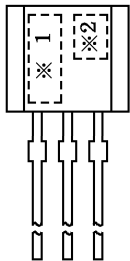
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ELECTRICAL CHARACTERISTICS (Ta = 25°C)

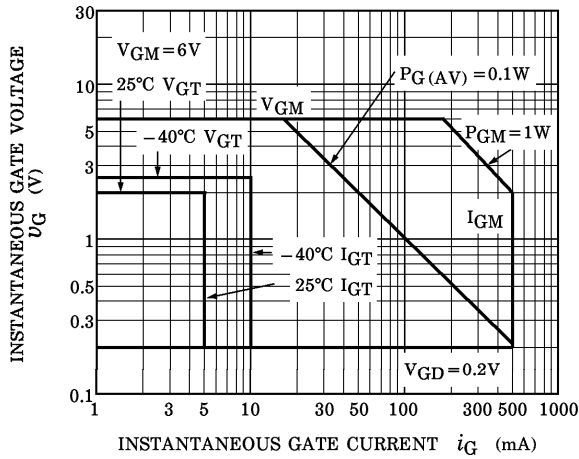
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT	
Repetitive Peak Off-State Current	I_{DRM}	$V_{DRM} = \text{Rated}$	—	—	10	μA	
Gate Trigger Voltage	I II III IV V_{GT}	$V_D = 12V,$ $R_L = 20\Omega$	T2 (+), Gate (+)	—	—	2	V
			T2 (+), Gate (-)	—	—	2	
			T2 (-), Gate (-)	—	—	2	
			T2 (-), Gate (+)	—	2	—	
Gate Trigger Current	I II III IV I_{GT}	$V_D = 12V,$ $R_L = 20\Omega$	T2 (+), Gate (+)	—	—	5	mA
			T2 (+), Gate (-)	—	—	5	
			T2 (-), Gate (-)	—	—	5	
			T2 (-), Gate (+)	—	10	—	
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

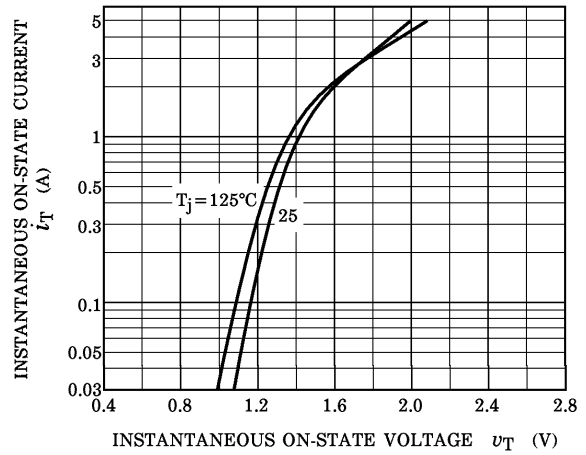


NUMBER	SYMBOL	MARK
※1	TYPE	SM1G43 M1G43
		SM1J43 M1J43
※2	Lot Number 	Example 8A : January 1998 8B : February 1998 8L : December 1998

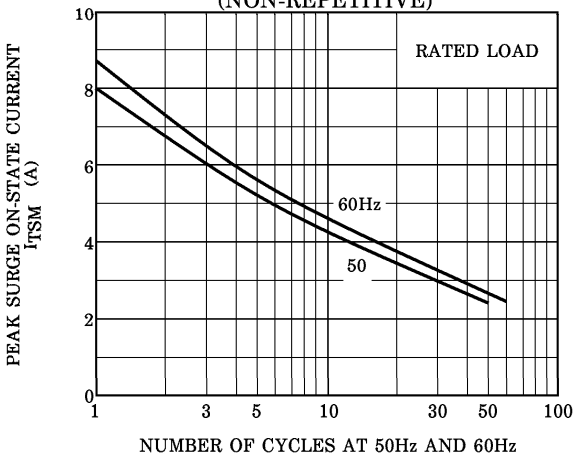
GATE TRIGGER CHARACTERISTIC



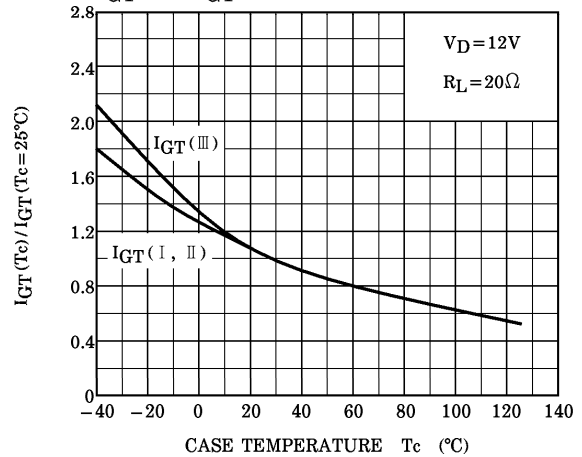
$i_T - v_T$



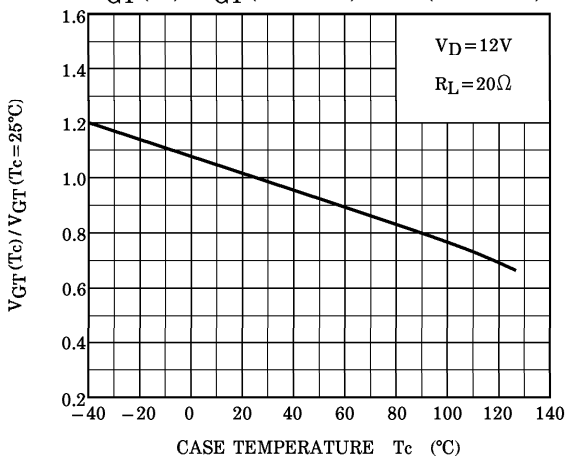
SURGE ON-STATE CURRENT (NON-REPETITIVE)



$I_{GT}(T_c) / I_{GT}(T_c = 25^\circ C) - T_c$ (TYPICAL)



$V_{GT}(T_c) / V_{GT}(T_c = 25^\circ C) - T_c$ (TYPICAL)



$I_H(T_c) / I_H(T_c = 25^\circ C) - T_c$ (TYPICAL)

