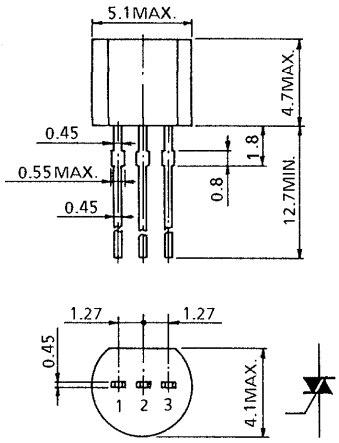
TOSHIBA BI-DIRECTIONAL TRIODE THYRISTOR SILICON PLANAR TYPE

SM08G43

AC POWER CONTROL APPLICATIONS

Unit in mm

- Repetitive Peak Off-State Voltage : V_{DRM} = 400V
- R.M.S On-State Current : $I_{T\,(RMS)}$ = 0.8A



1. T1
2. GATE
3. T2

JEDEC	TO-92
EIAJ	SC-43
TOSHIBA	13-5A1E

Weight : 0.2g

MAXIMUM RATINGS

CHARACTERISTIC	SYMBOL	RATING	UNIT
Repetitive Peak Off-State Voltage	V_{DRM}	400	V
R.M.S On-State Current (Full Sine Waveform Tc = 65°C)	$I_{T\,(RMS)}$	0.8	A
Peak One Cycle Surge On-State Current (Non-Repetitive)	I_{TSM}	6 (50Hz)	A
		6.6 (60Hz)	
I^2t Limit Value	I^2t	0.18	A^2s
Peak Gate Power Dissipation	P_{GM}	0.5	W
Average Gate Power Dissipation	$P_{G\,(AV)}$	0.05	W
Peak Gate Voltage	V_{GM}	5	V
Peak Gate Current	I_{GM}	0.3	A
Junction Temperature	T_j	−40~125	°C
Storage Temperature Range	T_{stg}	−40~125	°C

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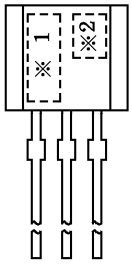
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

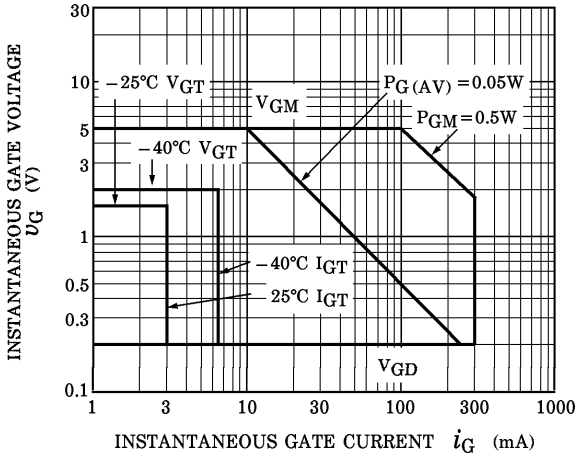
CHARACTERISTIC			SYMBOL	TEST CONDITION		MIN.	TYP.	MAX.	UNIT
Repetitive Peak Off-State Current			I_{DRM}	V_{DRM} = Rated		—	—	10	μA
Gate Trigger Voltage	Ⅰ	(1+)	V_{GT}	V_D = 12V, R_L = 20Ω	T2(+), Gate(+)	—	—	—	V
	Ⅱ	(1−)			T2(+), Gate(−)	—	—	1.5	
	Ⅲ	(3−)			T2(−), Gate(−)	—	—	1.5	
	Ⅳ	(3+)			T2(−), Gate(+)	—	—	—	
Gate Trigger Current	Ⅰ	(1+)	I_{GT}		T2(+), Gate(+)	—	—	—	mA
	Ⅱ	(1−)			T2(+), Gate(−)	—	—	3	
	Ⅲ	(3−)			T2(−), Gate(−)	—	—	3	
	Ⅳ	(3+)			T2(−), Gate(+)	—	—	—	
Peak On-State Voltage			V_{TM}	I_{TM} = 1.2A		—	—	1.5	V
Gate Non-Trigger Voltage			V_{GD}	V_D = Rated, Tc = 125°C		0.2	—	—	V
Holding Current			I_H	V_D = 12V, Gate Open		—	—	10	mA
Thermal Resistance			$R_{th\ (j\text{-}c)}$	Junction to Case		—	—	50	°C / W
Thermal Resistance			$R_{th\ (j\text{-}a)}$	Junction to Ambient		—	—	220	°C / W

MARKING

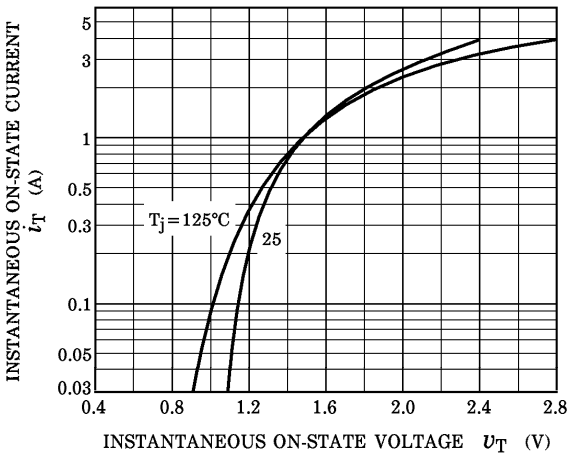


NUMBER	SYMBOL		MARK
※1	TYPE	SM08G43	M08G
※2	Lot Number □ □ Month (Starting from Alphabet A) Year (Last Decimal Digit of the Current Year)		Example 8A : January 1998 8B : February 1998 8L : December 1998

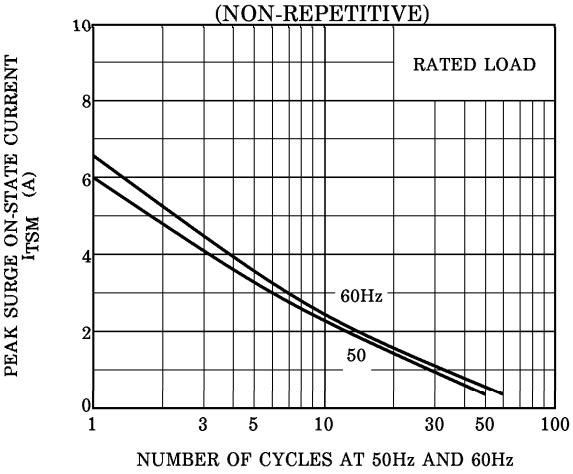
GATE TRIGGER CHARACTERISTIC



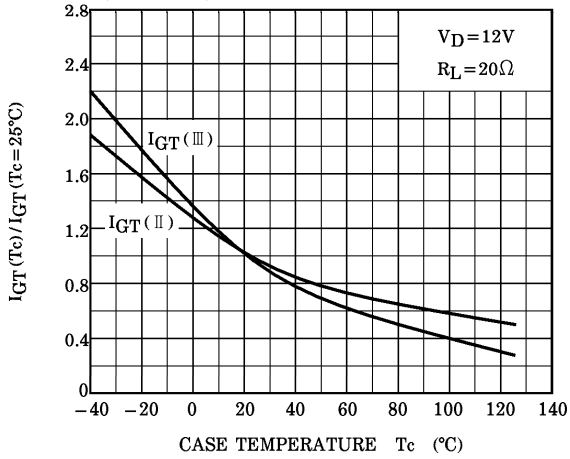
i_T – v_T



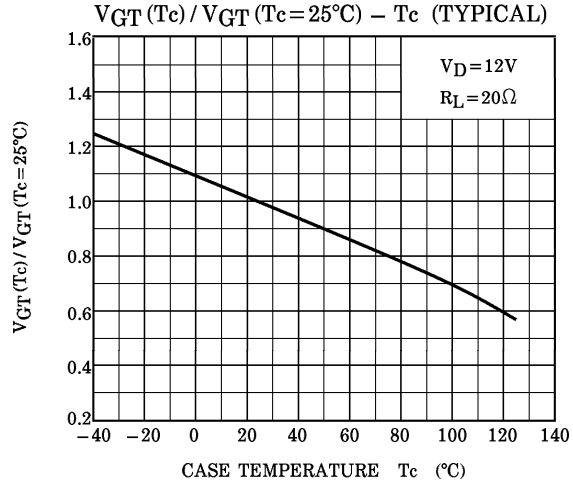
SURGE ON-STATE CURRENT
(NON-REPETITIVE)



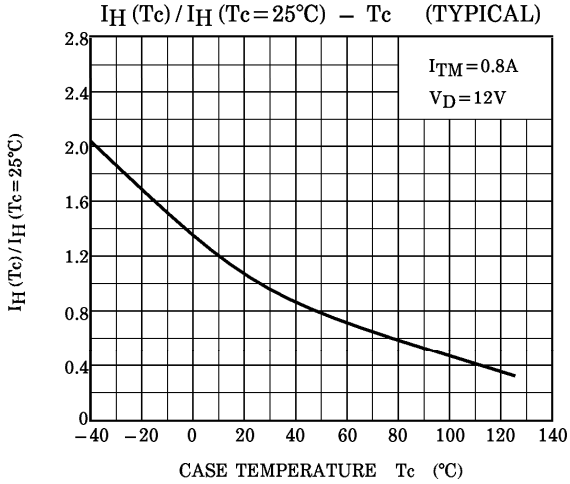
I_{GT} (Tc) / I_{GT} (Tc = 25°C) – Tc (TYPICAL)



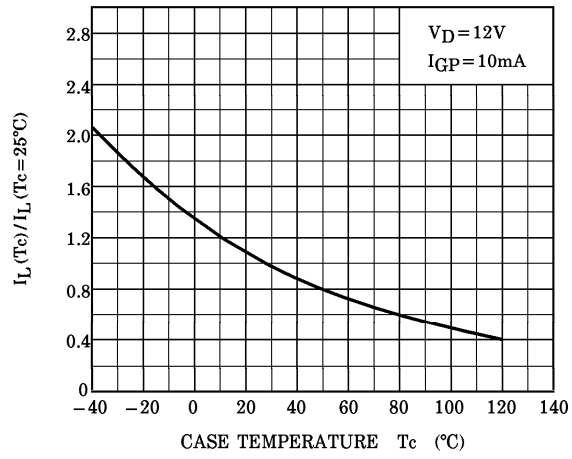
V_{GT} (Tc) / V_{GT} (Tc = 25°C) – Tc (TYPICAL)



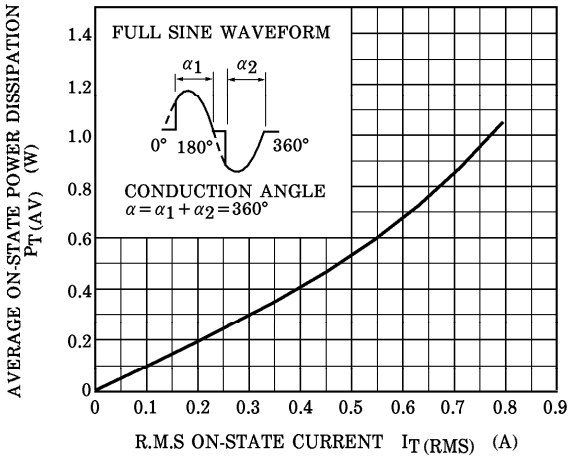
I_H (Tc) / I_H (Tc = 25°C) – Tc (TYPICAL)



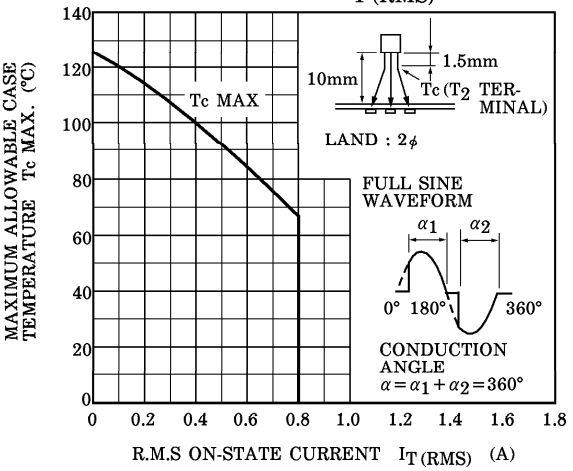
I_L (Tc) / I_L (Tc = 25°C) – Tc (TYPICAL)



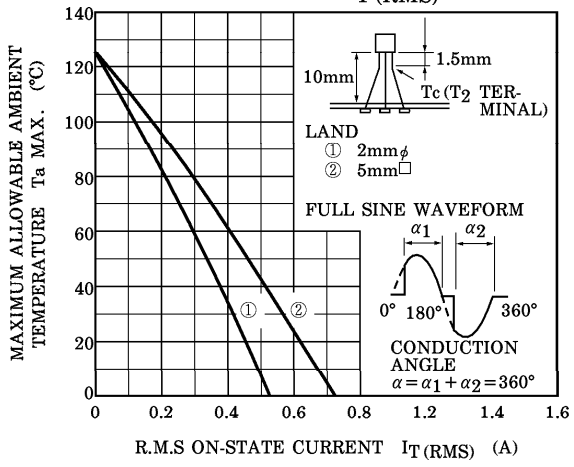
$P_{T(AV)}$ – $I_{T(RMS)}$



Tc MAX. – $I_{T(RMS)}$



Ta MAX. – $I_{T(RMS)}$



r_{th} (j-c), r_{th} (j-a) – t