

TOSHIBA BI-DIRECTIONAL TRIODE THYRISTOR SILICON PLANAR TYPE

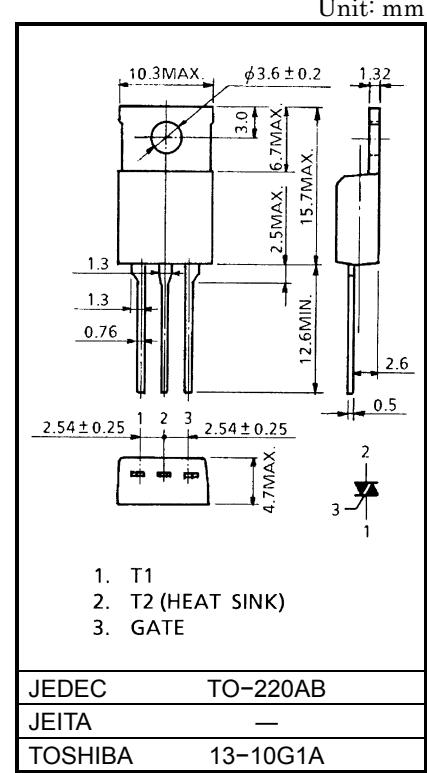
SM3G45,SM3J45

AC POWER CONTROL APPLICATIONS

- Repetitive Peak Off-State Voltage : $V_{DRM} = 400, 600V$
- R.M.S ON-State Current : $I_T (\text{RMS}) = 3A$
- High Commutating (dv / dt)

MAXIMUM RATINGS

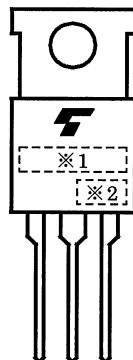
CHARACTERISTIC		SYMBOL	RATING	UNIT
Repetitive Peak Off-State Voltage	SM3G45	V_{DRM}	400	V
	SM3J45		600	
R.M.S On-State Current (Full Sine Waveform $T_c = 111^\circ\text{C}$)		$I_T (\text{RMS})$	3	A
Peak One Cycle Surge On-State Current (Non-Repetitive)		I_{TSM}	30 (50Hz)	A
			33 (60Hz)	
I^2t Limit Value		I^2t	4.5	A^2s
Critical Rate of Rise of On-State Current		di / dt	50	$\text{A} / \mu\text{s}$
Peak Gate Power Dissipation		P_{GM}	5	W
Average Gate Power Dissipation		$P_G (\text{AV})$	0.5	W
Peak Gate Voltage		V_{GM}	10	V
Peak Gate Current		I_{GM}	2	A
Junction Temperature		T_j	-40~125	$^\circ\text{C}$
Storage Temperature Range		T_{stg}	-40~125	$^\circ\text{C}$

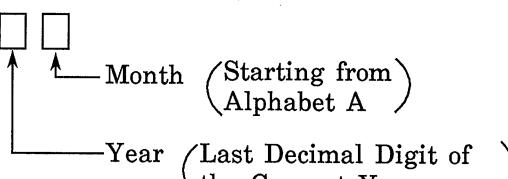


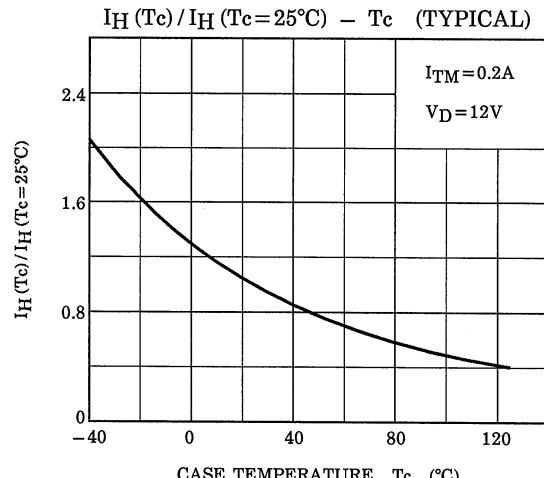
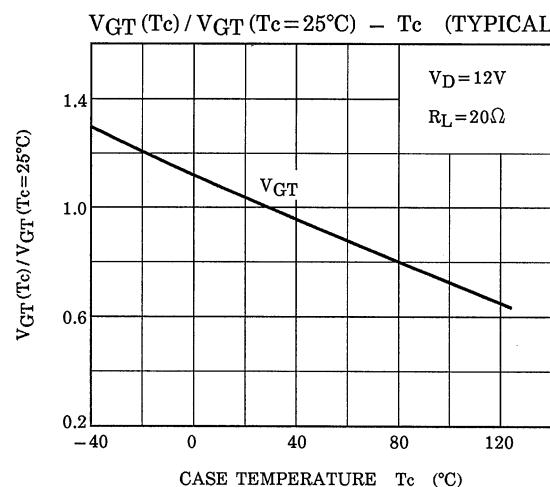
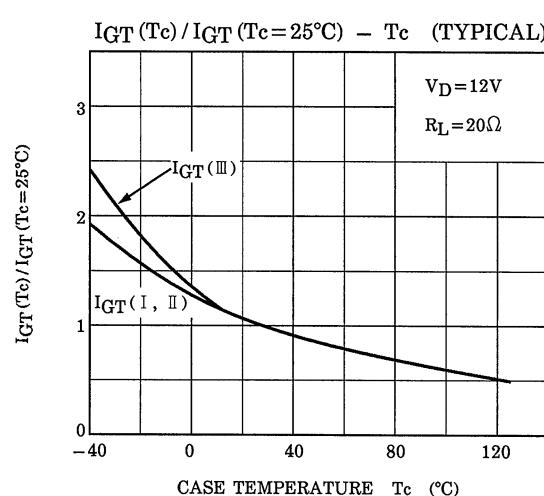
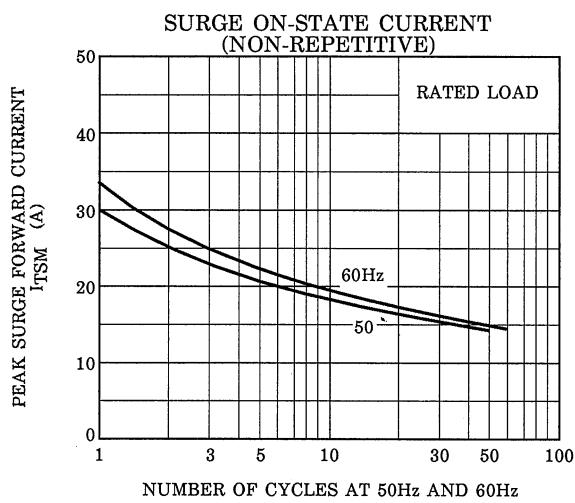
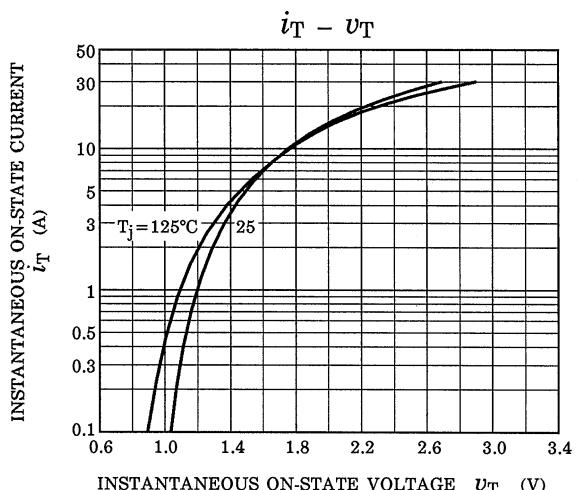
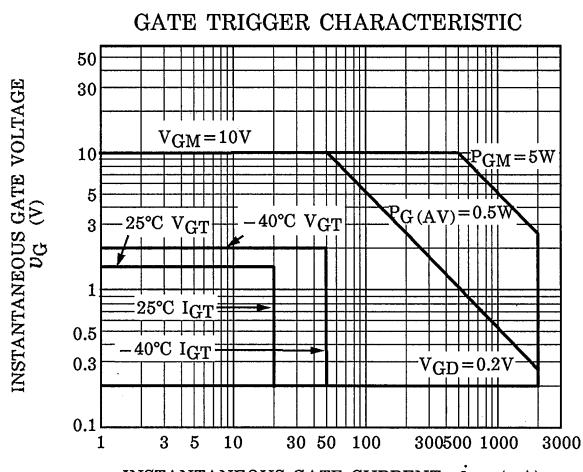
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

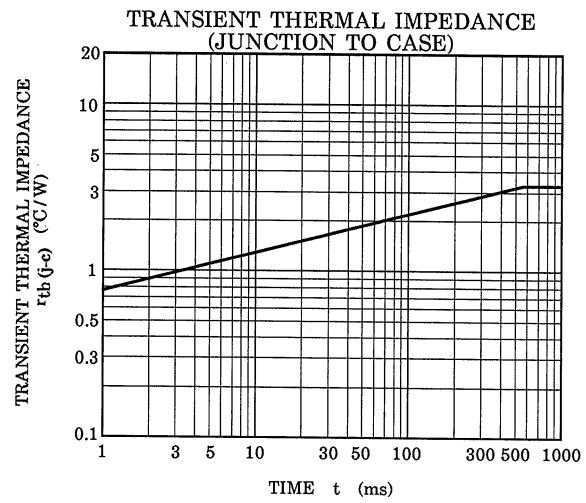
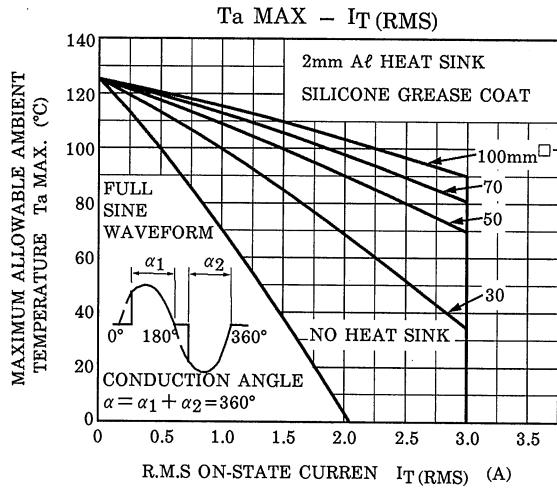
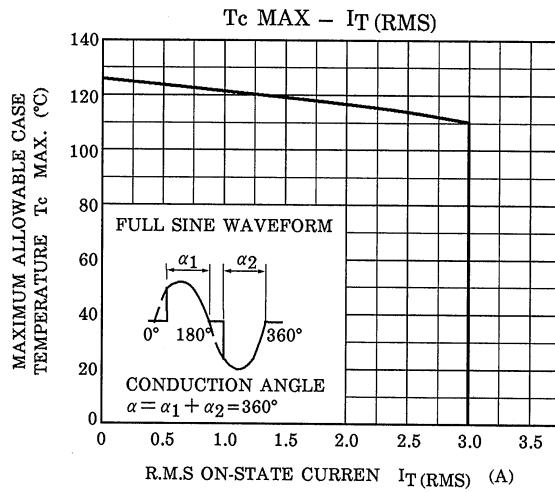
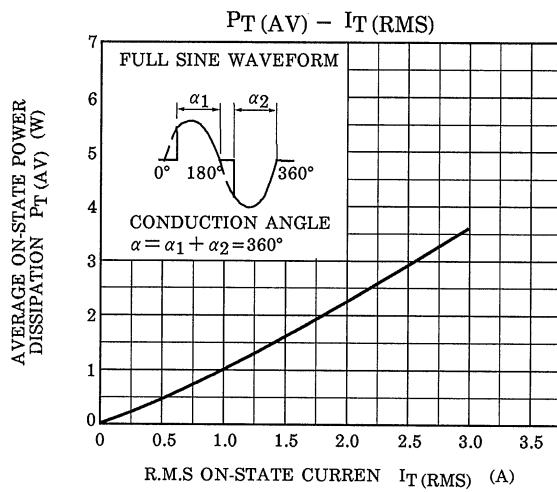
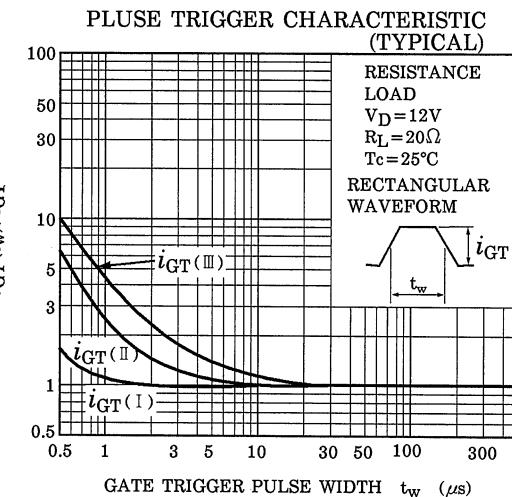
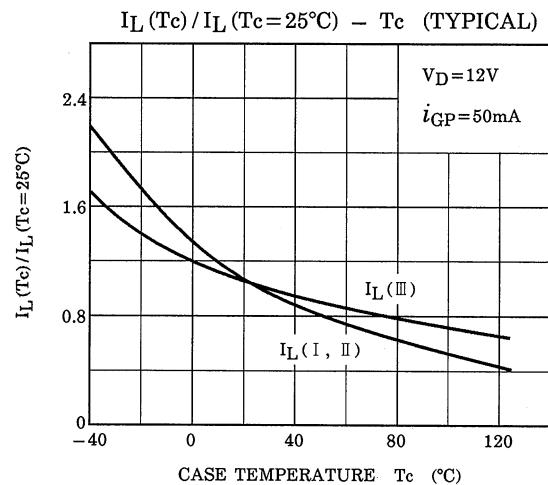
CHARACTERISTIC		SYMBOL	TEST CONDITION		MIN	TYP.	MAX	UNIT
Repetitive Peak Off-State Current		I _{DRM}	V _{DRM} = Rated		—	—	20	µA
Gate Trigger Voltage	I	V _{GT}	V _D = 12V	T2 (+), Gate (+)	—	—	1.5	V
	II			T2 (+), Gate (-)	—	—	1.5	
	III			T2 (-), Gate (-)	—	—	1.5	
	IV			T2 (-), Gate (+)	—	—	—	
Gate Trigger Current	I	I _{GT}	R _L = 20Ω	T2 (+), Gate (+)	—	—	20	mA
	II			T2 (+), Gate (-)	—	—	20	
	III			T2 (-), Gate (-)	—	—	20	
	IV			T2 (-), Gate (+)	—	—	—	
Peak On-State Voltage		V _{TM}	I _{TM} = 4.5A		—	—	1.5	V
Gate Non-Trigger Voltage		V _{GD}	V _D = Rated, T _c = 125°C		0.2	—	—	V
Holding Current		I _H	V _D = 12V, I _{TM} = 0.2A		—	—	30	mA
Critical Rate of Rise of Off-State Voltage		dv / dt	V _D = V _{DRM} , T _j = 125°C Exponential Rise		100	—	—	V / µs
Critical Rate of Rise of Off-State Voltage at Commutation		(dv / dt) c	V _{DRM} = 400V, (di / dt) c = -2A / ms T _j = 125°C		10	—	—	V / µs
Thermal Resistance		R _{th (j-c)}	Junction to Case, AC		—	—	3.3	°C / W

MARKING



NUMBER	SYMBOL		MARK
* 1	TYPE	SM3G45	M3G45
		SM3J45	M3J45
* 2		Lot Number 	Example 8A : January 1998 8B : February 1998 8L : December 1998





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