

# SM6G45, SM6J45, SM6G45A, SM6J45A

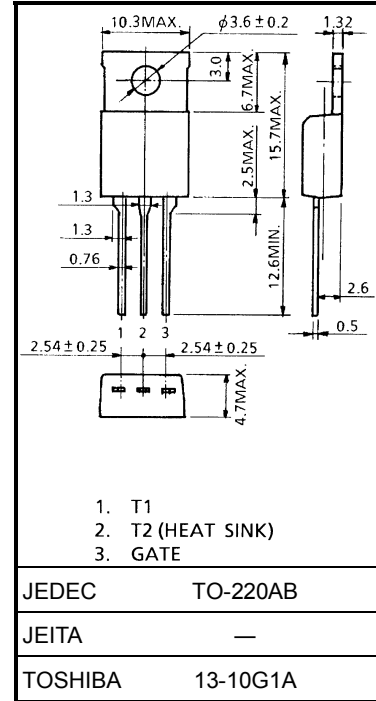
## AC POWER CONTROL APPLICATIONS

- Repetitive Peak Off-State Voltage:  $V_{DRM} = 400V, 600V$
- R.M.S On-State Current:  $I_T (RMS) = 6A$
- High Commutating ( $dv / dt$ )

## MAXIMUM RATINGS

CHARACTERISTIC	SYMBOL	RATING	UNIT
Repetitive Peak Off-State Voltage	SM6G45 SM6G45A	400	V
	SM6J45 SM6J45A	600	
R.M.S On-State Current (Full Sine Waveform $T_c = 104^\circ C$ )	$I_T (RMS)$	6	A
Peak One Cycle Surge On-State Current (Non-Repetitive)	$I_{TSM}$	60 (50Hz)	A
		66 (60Hz)	
$I^2 t$ Limit Value	$I^2 t$	18	$A^2 s$
Critical Rate of Rise of On-State Current	$di / dt$	50	A / $\mu s$
Peak Gate Power Dissipation	$P_{GM}$	5	W
Average Gate Power Dissipation	$P_G (AV)$	0.5	W
Peak Gate Voltage	$V_{GM}$	10	V
Peak Gate Current	$I_{GM}$	2	A
Junction Temperature	$T_j$	-40~125	$^\circ C$
Storage Temperature Range	$T_{stg}$	-40~125	$^\circ C$

Unit: mm

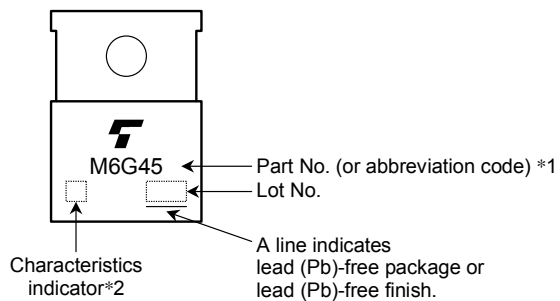


Weight: 2.0 g (typ.)

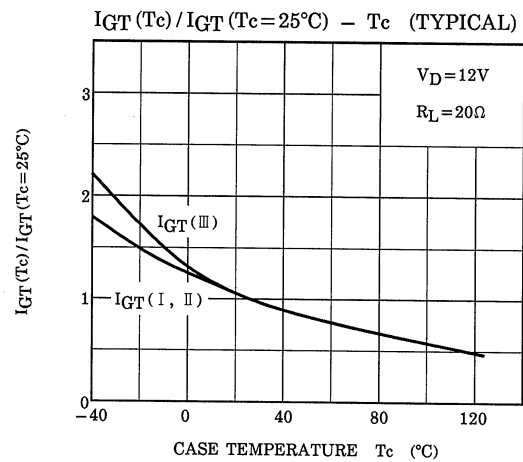
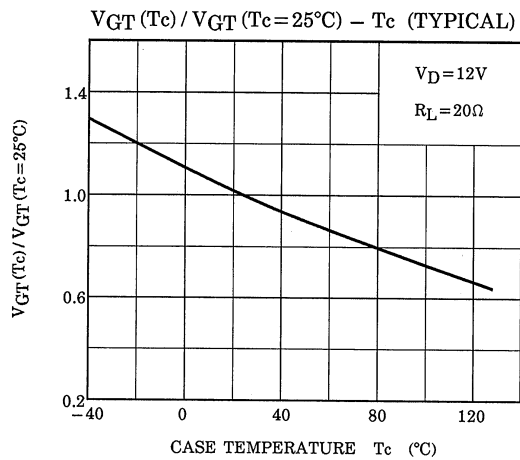
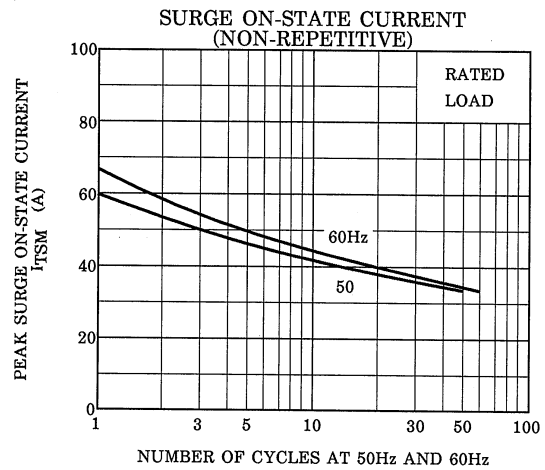
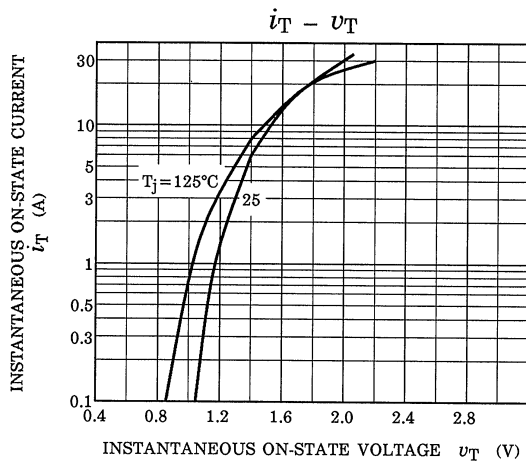
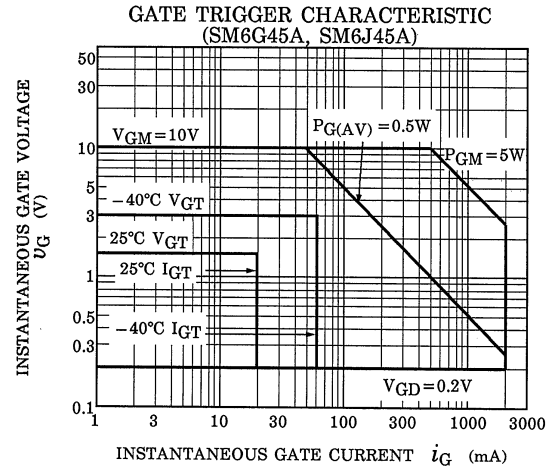
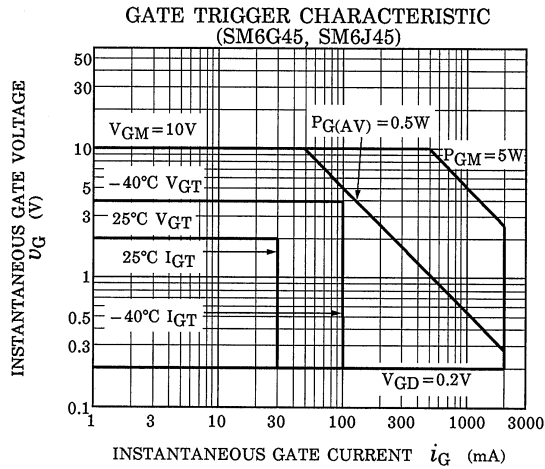
## ELECTRICAL CHARACTERISTICS (Ta = 25°C)

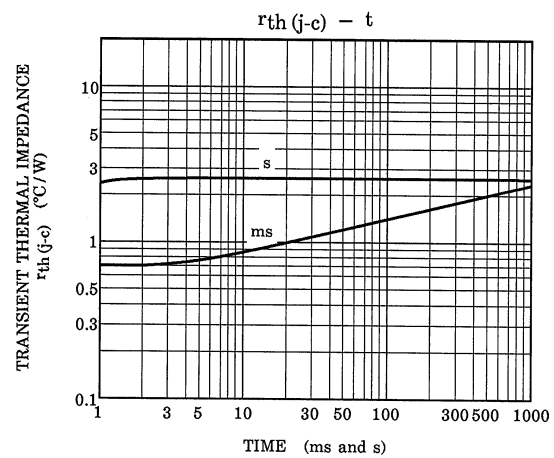
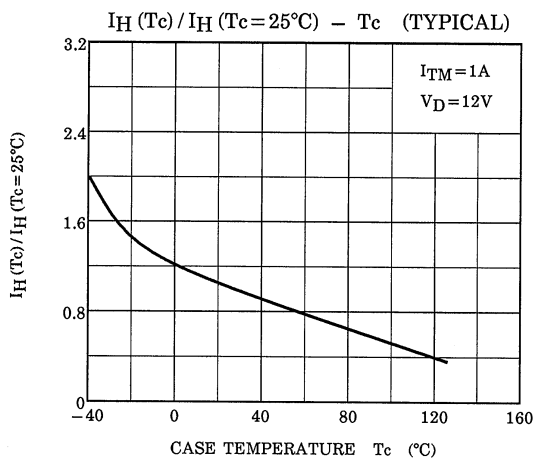
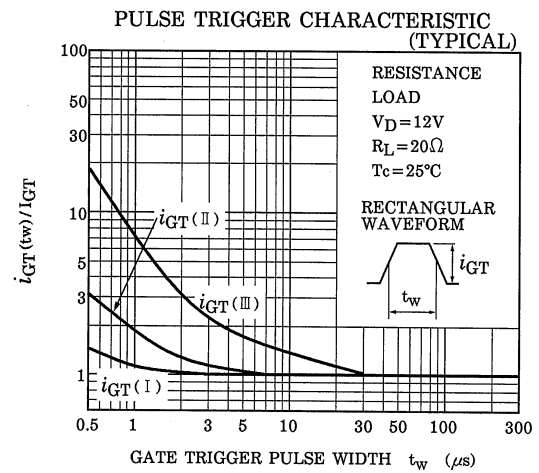
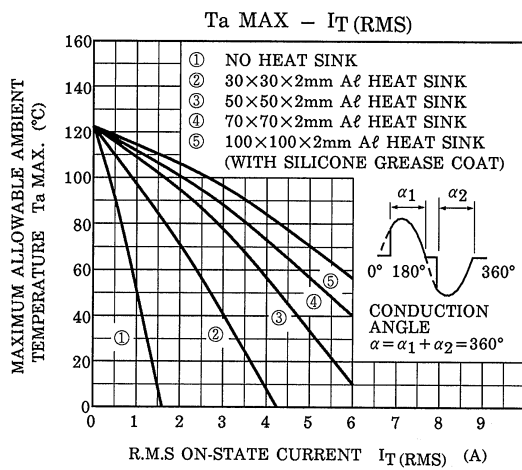
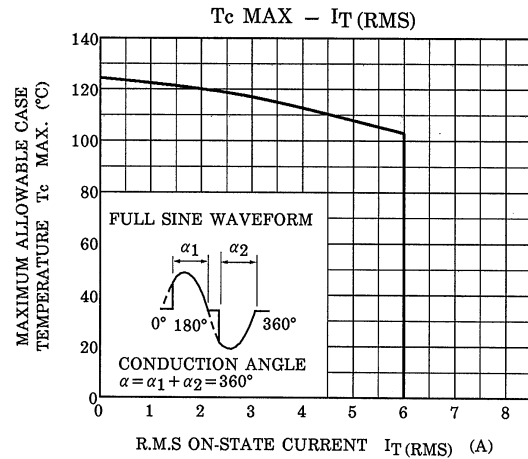
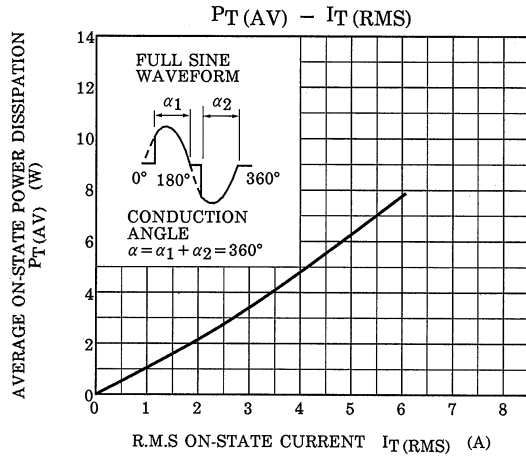
CHARACTERISTIC			SYMBOL	TEST CONDITION		MIN	TYP.	MAX	UNIT
Repetitive Peak Off-State Current			I <sub>DRM</sub>	V <sub>DRM</sub> = Rated, T <sub>j</sub> = 125°C		—	—	2	mA
Gate Trigger Voltage	SM6G45 SM6J45	I	V <sub>GT</sub>	V <sub>D</sub> = 12V R <sub>L</sub> = 20Ω	T2 (+), Gate (+)	—	—	2	V
		II			T2 (+), Gate (—)	—	—	2	
		III			T2 (—), Gate (—)	—	—	2	
		IV			T2 (—), Gate (+)	—	—	—	
	SM6G45A SM6J45A	I			T2 (+), Gate (+)	—	—	1.5	
		II			T2 (+), Gate (—)	—	—	1.5	
		III			T2 (—), Gate (—)	—	—	1.5	
		IV			T2 (—), Gate (+)	—	—	—	
Gate Trigger Current	SM6G45 SM6J45	I	I <sub>GT</sub>	V <sub>D</sub> = 12V R <sub>L</sub> = 20Ω	T2 (+), Gate (+)	—	—	30	mA
		II			T2 (+), Gate (—)	—	—	30	
		III			T2 (—), Gate (—)	—	—	30	
		IV			T2 (—), Gate (+)	—	—	—	
	SM6G45A SM6J45A	I			T2 (+), Gate (+)	—	—	20	
		II			T2 (+), Gate (—)	—	—	20	
		III			T2 (—), Gate (—)	—	—	20	
		IV			T2 (—), Gate (+)	—	—	—	
Peak On-State Voltage			V <sub>TM</sub>	I <sub>TM</sub> = 9A		—	—	1.5	V
Gate Non-Trigger Voltage			V <sub>GD</sub>	V <sub>D</sub> = Rated, T <sub>c</sub> = 125°C		0.2	—	—	V
Holding Current			I <sub>H</sub>	V <sub>D</sub> = 12V, I <sub>TM</sub> = 1A		—	—	50	mA
Thermal Resistance			R <sub>th</sub> (j-c)	Junction to Case, AC		—	—	2.5	°C / W
Critical Rate of Rise of Off-State Voltage at Commutation	SM6G45 SM6J45	(dv / dt) c	V <sub>DRM</sub> = 400V, (di / dt) c = -3.3A / ms T <sub>j</sub> = 125°C	10	—	—	V / μs		
	SM6G45A SM6J45A			4	—	—			

## MARKING



	Part No. (or abbreviation code)	Part No.
*1	M6G45	SM6G45, SM6G45A
	M6J45	SM6J45, SM6J45A
*2	Nothing	SM6G45, SM6J45
	A	SM6G45A, SM6J45A





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