

SM16GZ51, SM16JZ51

AC POWER CONTROL APPLICATIONS

Unit: mm

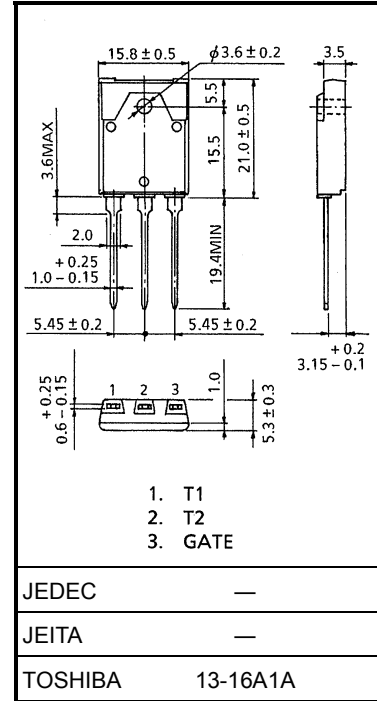
- Repetitive Peak Off-State Voltage: $V_{DRM} = 400V, 600V$
- R.M.S On-State Current: $I_T (RMS) = 16A$
- High Commutating (dv/dt): (dv/dt) $c = 10V/\mu s$
- Isolation Voltage: $V_{ISOL} = 1500VAC$

MAXIMUM RATINGS

CHARACTERISTIC		SYMBOL	RATING	UNIT
Repetitive Peak Off-State Voltage	SM16GZ51	V_{DRM}	400	V
	SM16JZ51		600	
R. M. S. On-state Current (Full Sine Waveform $T_a = 82^{\circ}\text{C}$)		$I_{\text{T (RMS)}}$	16	A
Peak One Cylce Surge On-State Current (Non-Repetitive)		I_{TSM}	150 (50 Hz)	A
			165 (60 Hz)	
I^2t Limit Value		I^2t	112.5	A^2s
Critical Rate of Rise of On-State Current (Note 1)		di / dt	50	$\text{A} / \mu\text{s}$
Peak Gate Power Dissipation		P_{GM}	5	W
Average Gate Power Dissipation		$P_{\text{G (AV)}}$	0.5	W
Peak Gate Voltage		V_{GM}	10	V
Peak Gate Current		I_{GM}	2	A
Junction Temperature		T_{j}	-40~125	$^{\circ}\text{C}$
Storage Temperature Range		T_{stg}	-40~125	$^{\circ}\text{C}$
Isolation Voltage (AC, $t = 1 \text{ min.}$)		V_{ISOL}	1500	V

Note 1: di/dt test condition

$V_{DRM} = 0.5 \times \text{Rated}$, $I_{TM} \leq 25A$, $t_{gw} \geq 10\mu s$, $t_{gr} \leq 250ns$, $i_{gp} = I_{GT} \times 2.0$

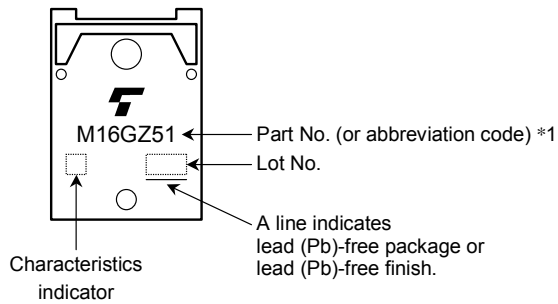


Weight: 2.0 g (typ.)

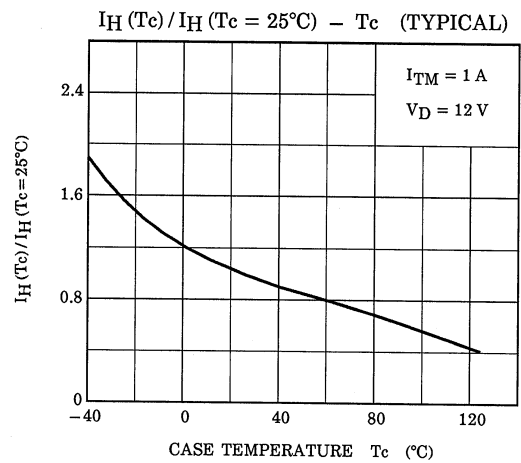
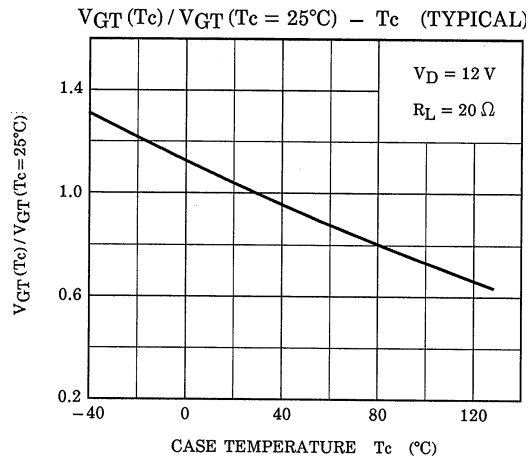
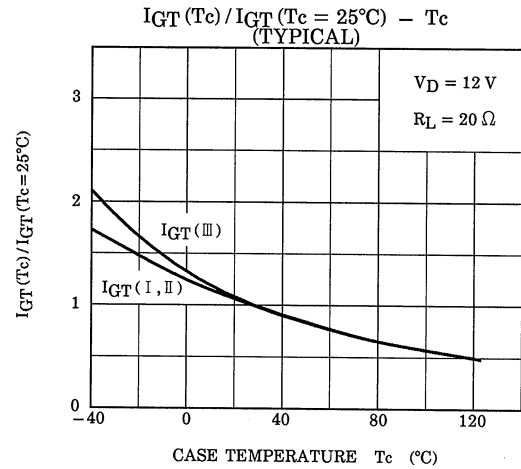
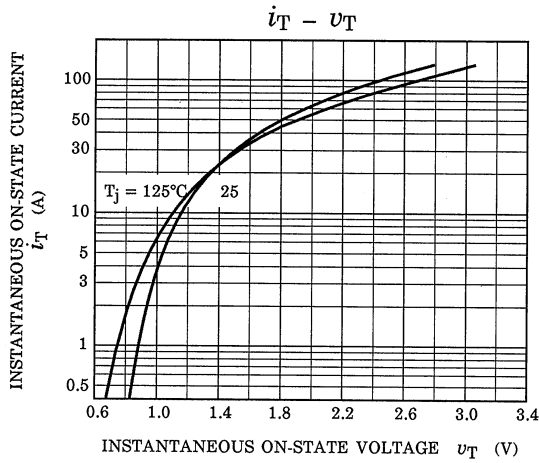
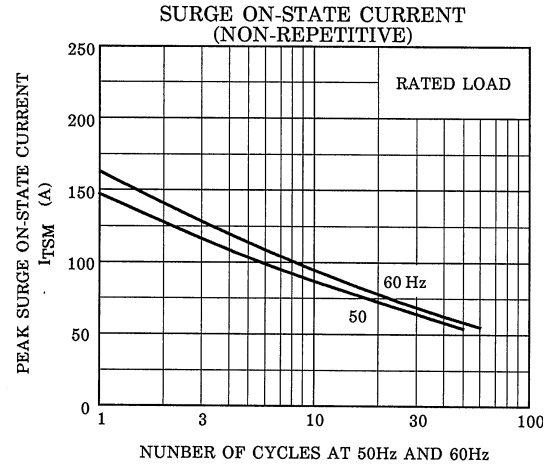
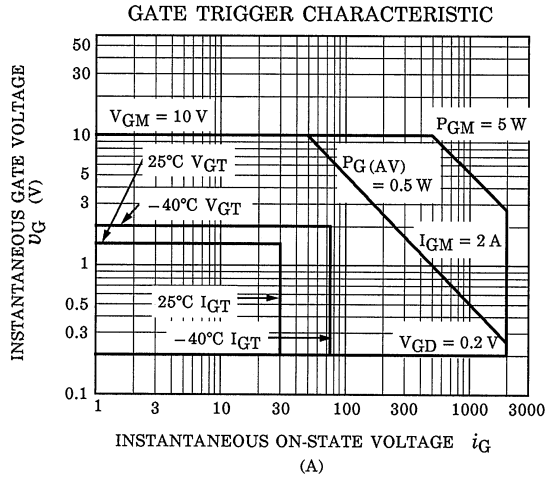
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

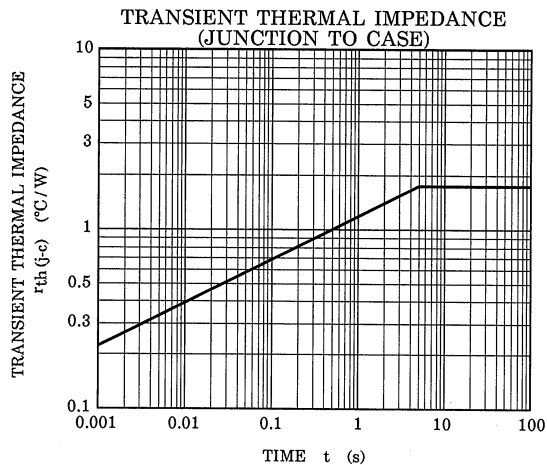
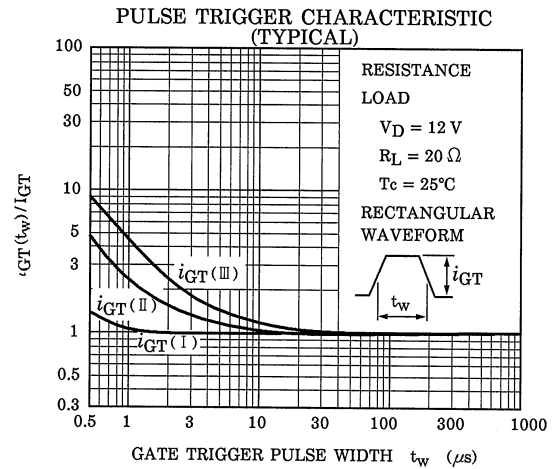
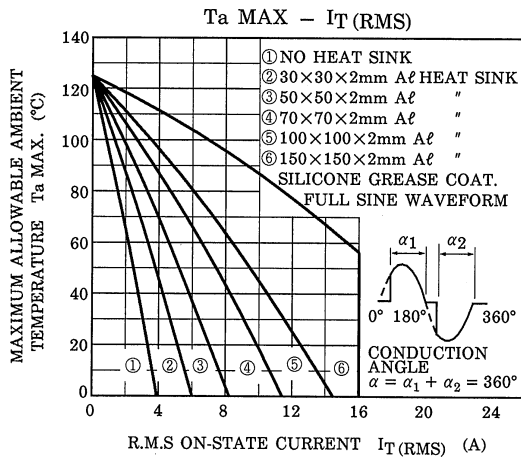
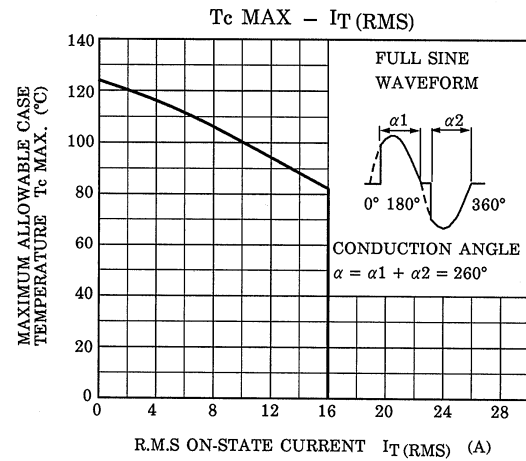
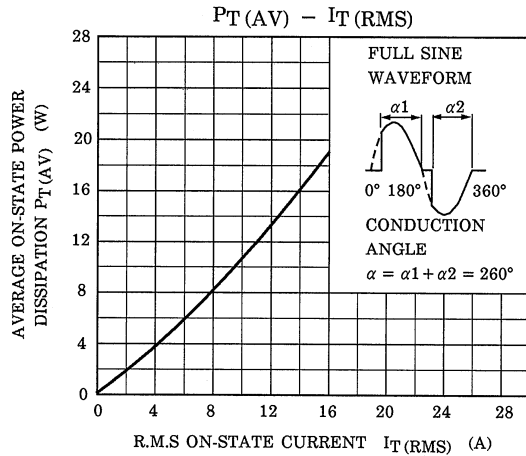
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN	TYP.	MAX	UNIT
Repetitive Peak Off-State Current	I_{DRM}	$V_{DRM} = \text{Rated}$	—	—	20	μA
Gate Trigger Voltage	I	$V_D = 12\text{ V}$, $R_L = 20\ \Omega$	T2 (+), Gate (+)	—	—	V
	II			—	—	
	III			—	—	
	IV			—	—	
Gate Trigger Current	I	$V_D = 12\text{ V}$, $R_L = 20\ \Omega$	T2 (+), Gate (+)	—	—	mA
	II			—	—	
	III			—	—	
	IV			—	—	
Peak On-State Voltage	V_{TM}	$I_{TM} = 25\text{ A}$	—	—	1.5	V
Gate Non-Trigger Voltage	V_{GD}	$V_D = \text{Rated}$, $T_c = 125^\circ\text{C}$	0.2	—	—	V
Holding Current	I_H	$V_D = 12\text{ V}$, $I_{TM} = 1\text{ A}$	—	—	50	mA
Thermal Resistance	$R_{th(j-c)}$	Junction to Case, AC	—	—	1.8	$^\circ\text{C} / \text{W}$
Critical Rate of Rise of Off-State Voltage	dv / dt	$V_{DRM} = \text{Rated}$, $T_j = 125^\circ\text{C}$ Exponential Rise	—	300	—	$\text{V} / \mu\text{s}$
Critical Rate of Rise of Off-State Voltage at Commutation	$(dv / dt)_c$	$V_{DRM} = 400\text{ V}$, $T_j = 125^\circ\text{C}$ $(di / dt)_c = -8.7\text{ A} / \text{ms}$	10	—	—	$\text{V} / \mu\text{s}$

MARKING



*1	Part No. (or abbreviation code)	Part No.
	M16GZ51	SM16GZ51
	M16JZ51	SM16JZ51





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