

TOSHIBA THYRISTOR SILICON PLANAR TYPE

# SF25GZ51, SF25JZ51

## MEDIUM POWER CONTROL APPLICATIONS

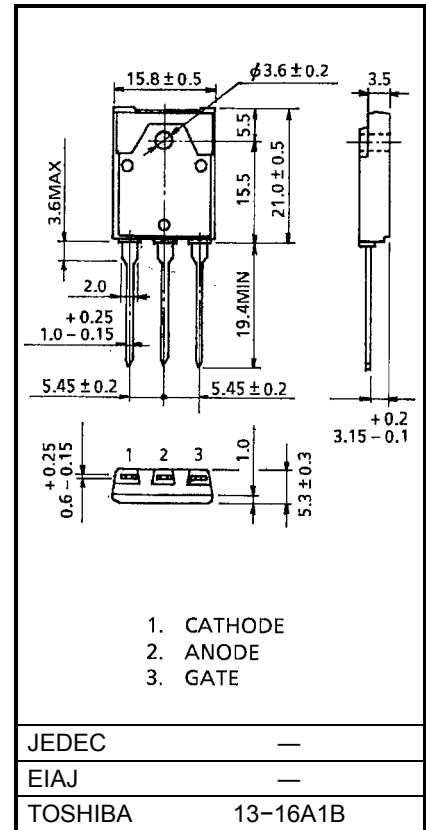
- Repetitive Peak Off-State Voltage :  $V_{DRM} = 400, 600 \text{ V}$   
 Repetitive Peak Reverse Voltage :  $V_{RRM} = 400, 600 \text{ V}$
- Average On-State Current :  $I_T (AV) = 25 \text{ A}$
- Isolation Voltage :  $V_{Isol} = 1500 \text{ V AC}$

## MAXIMUM RATINGS

CHARACTERISTIC	SYMBOL	RATING	UNIT
Repetitive Peak Off-State Voltage and Repetitive Peak Reverse Voltage	SF25GZ51	400	V
	SF25JZ51	600	
Non-Repetitive Peak Reverse Voltage (Non-Repetitive < 5 ms, $T_j = 0\sim 125^\circ\text{C}$ )	SF25GZ51	500	V
	SF25JZ51	720	
Average On-State Current (Half Sine Waveform)	$I_T (AV)$	25	A
R.M.S On-State Current	$I_T (RMS)$	39	A
Peak One Cycle Surge On-State Current (Non-Repetitive)	$I_{TSM}$	350 (50 Hz)	A
		385 (60 Hz)	
$I^2t$ Limit Value	$I^2t$	612	$\text{A}^2\text{s}$
Critical Rate of Rise of On-State Current (Note)	$di / dt$	100	$\text{A} / \mu\text{s}$
Peak Gate Power Dissipation	$P_{GM}$	5	W
Average Gate Power Dissipation	$P_G (AV)$	0.5	W
Peak Forward Gate Voltage	$V_{FGM}$	10	V
Peak Reverse Gate Voltage	$V_{RGM}$	-5	V
Peak Forward 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 :  $di / dt$  Test Condition,  $I_G = 30\text{mA}$ ,  $t_{GW} = 10\mu\text{s}$ ,  $t_{GR} \leq 250\text{ns}$

Unit in mm

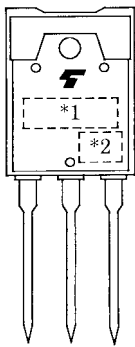


Weight : 5.9g

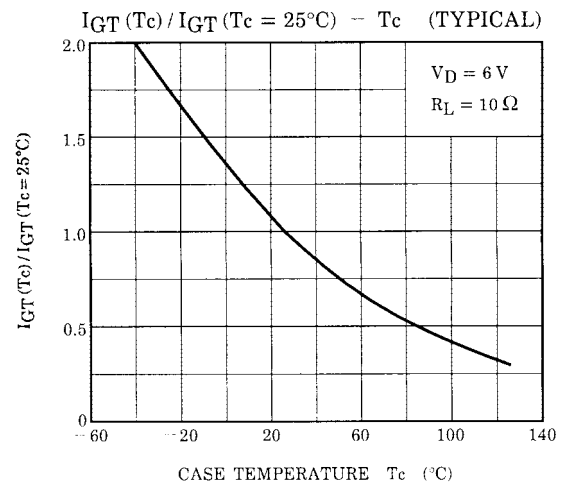
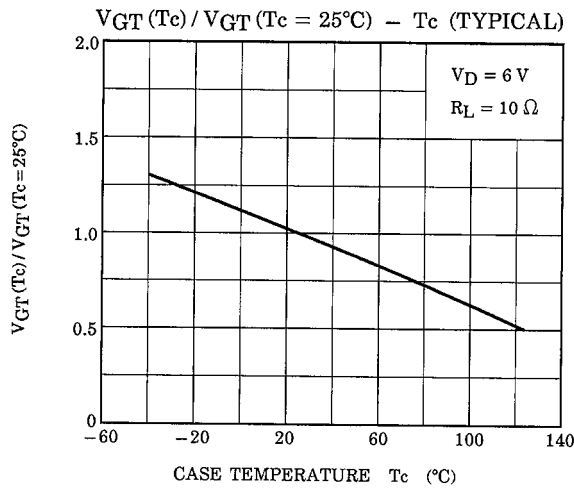
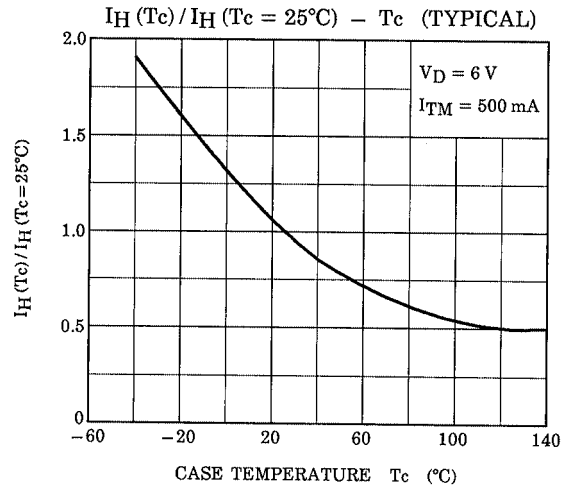
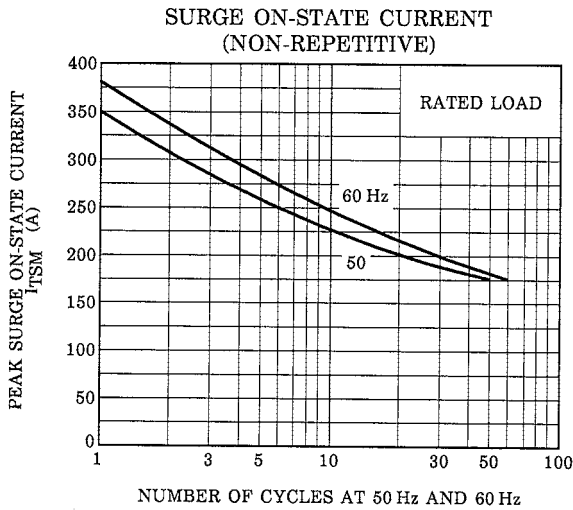
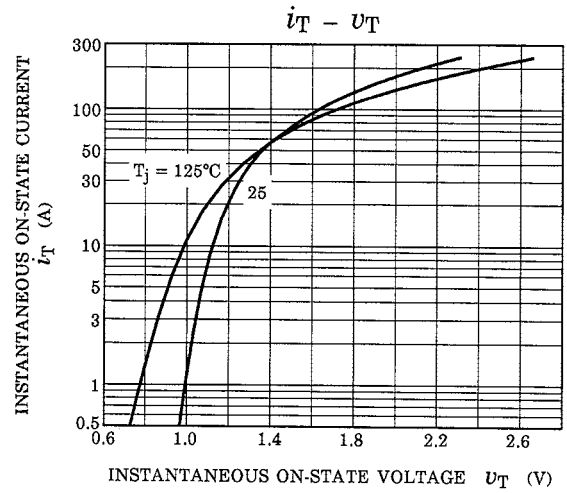
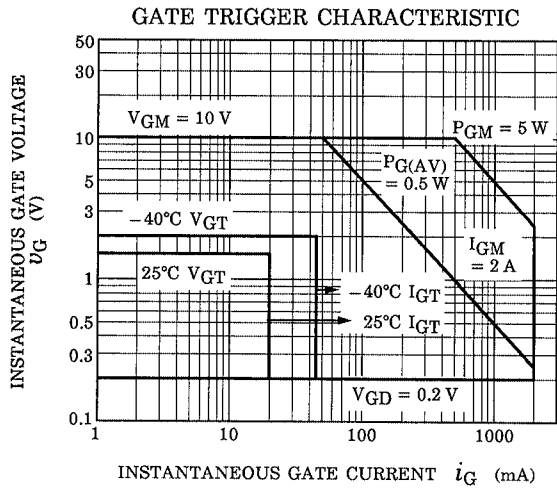
## ELECTRICAL CHARACTERISTICS (Ta = 25°C)

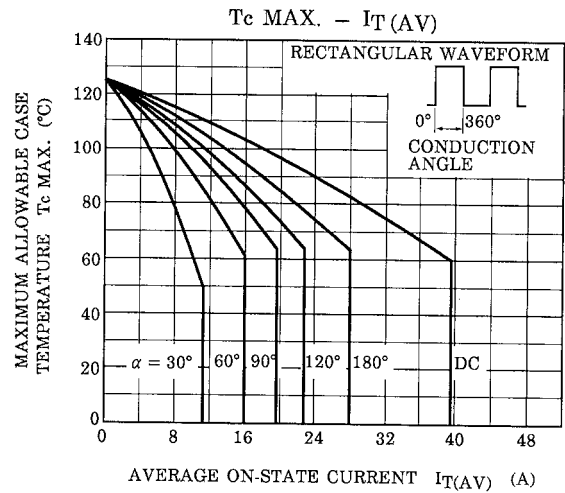
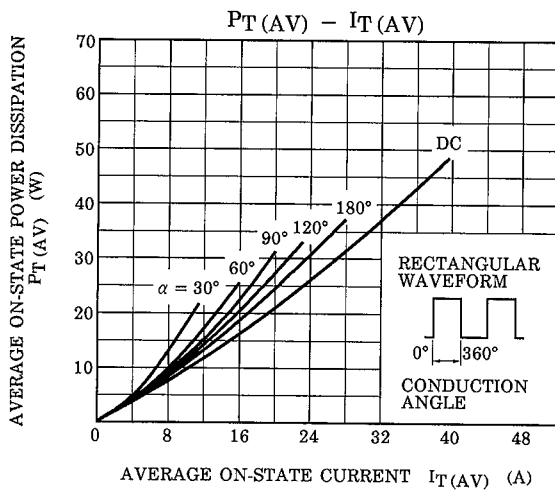
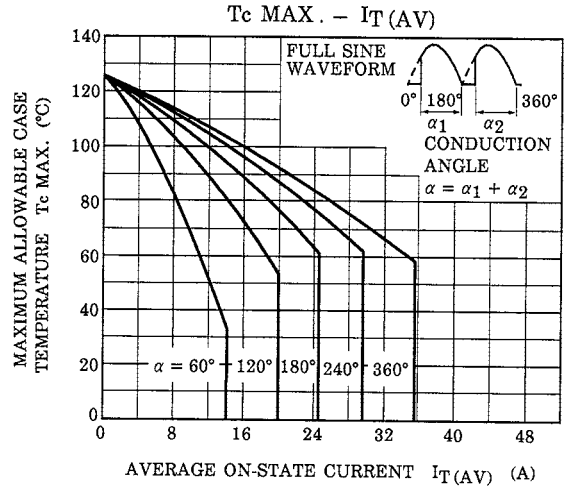
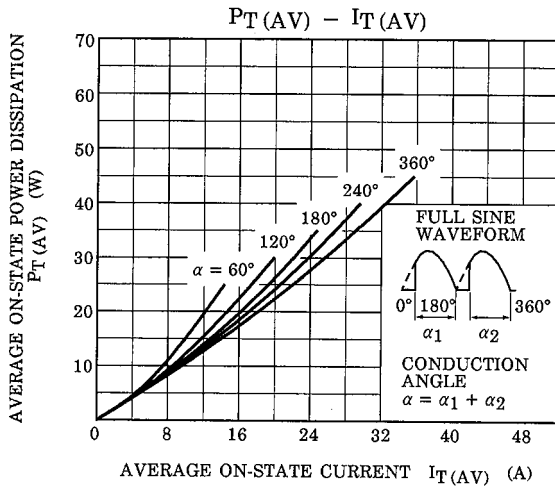
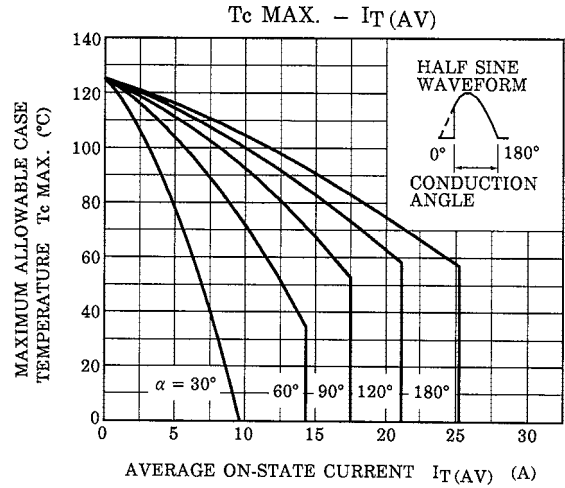
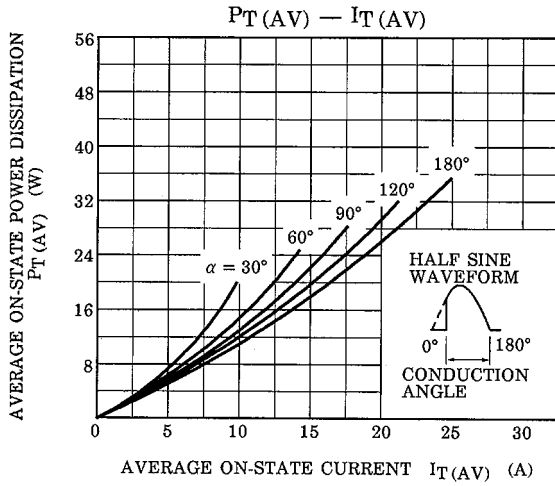
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Repetitive Peak Off-State Current and Repetitive Peak Reverse Current	$I_{DRM}$ $I_{RRM}$	$V_{DRM} = V_{RRM} = \text{Rated}$	—	—	20	$\mu\text{A}$
Peak On-State Voltage	$V_{TM}$	$I_{TM} = 80 \text{ A}$	—	—	1.5	V
Gate Trigger Voltage	$V_{GT}$	$V_D = 6 \text{ V}, R_L = 10 \Omega$	—	—	1.5	V
Gate Trigger Current	$I_{GT}$		—	—	20	mA
Holding Current	$I_H$	$V_D = 6 \text{ V}, I_{TM} = 500 \text{ mA}$	—	—	100	mA
Critical Rate of Rise of Off-State Voltage	$dv / dt$	$V_{DRM} = \text{Rated}, T_c = 125^\circ\text{C}$ Exponential Rise	—	50	—	$\text{V} / \mu\text{s}$
Thermal Resistance	$R_{th(j-c)}$	Junction to Case	—	—	1.3	$^\circ\text{C} / \text{W}$

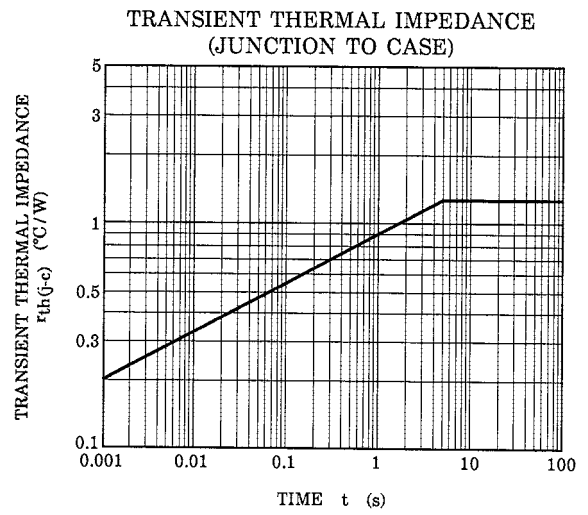
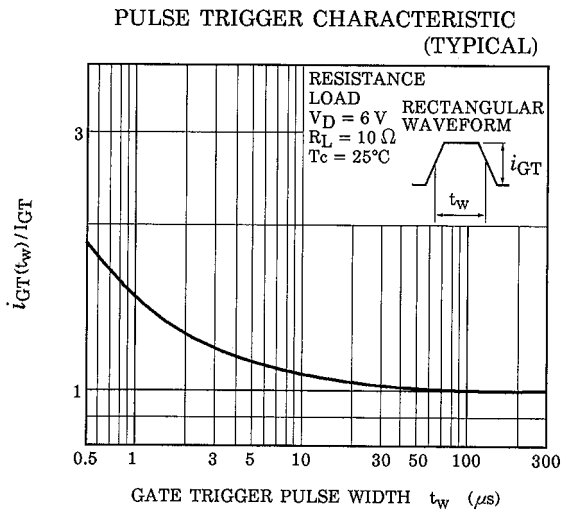
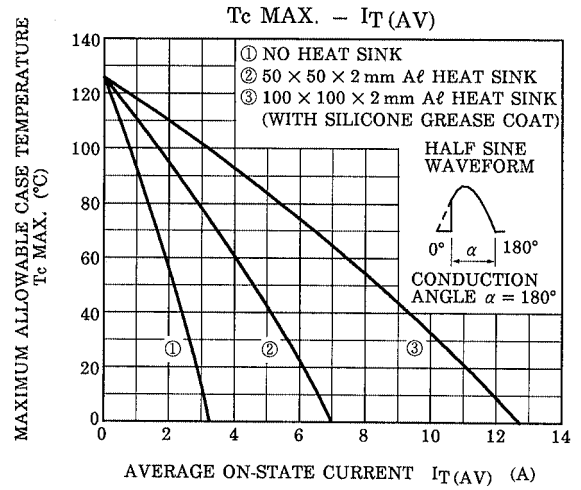
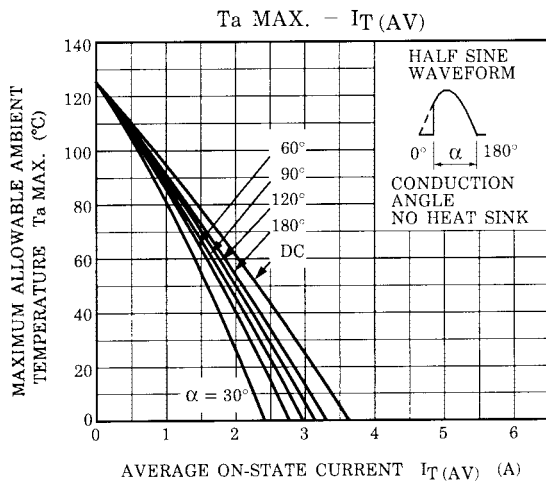
## MARKING



NUMBER	SYMBOL		MARK
*1	TYPE	SF25GZ51	F25GZ51
		SF25JZ51	F25JZ51
*2	Lot Number Month (Starting from ) (Alphabet A ) Year (Last Decimal Digit of ) (the Year of Manufacture)		Example 8A : January 1998 8B : February 1998 8L : December 1998







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