

TOSHIBA THYRISTOR SILICON PLANAR TYPE

SF25GZ51, SF25JZ51

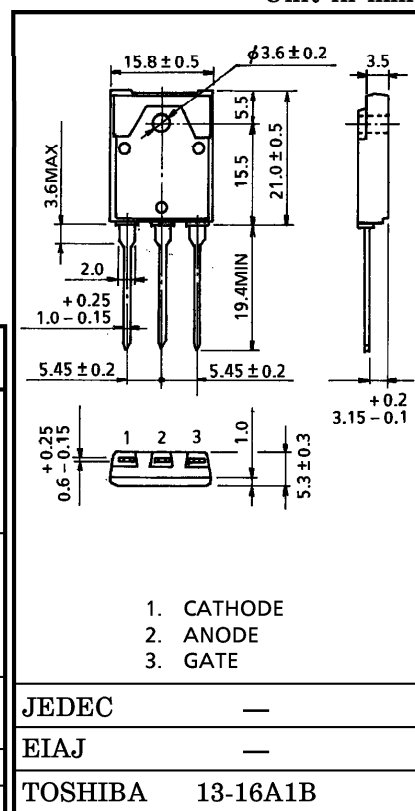
MEDIUM POWER CONTROL APPLICATIONS

Unit in mm

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

MAXIMUM RATINGS

CHARACTERISTIC		SYMBOL	RATING	UNIT
Repetitive Peak Off-State Voltage and Repetitive Peak Reverse Voltage	SF25GZ51	V_{DRM} V_{RRM}	400	V
	SF25JZ51		600	
Non-Repetitive Peak Reverse Voltage (Non-Repetitive < 5 ms, $T_j = 0 \sim 125^\circ\text{C}$)	SF25GZ51	V_{RSM}	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	A^2s
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}	-40~150	$^\circ\text{C}$
Isolation Voltage (AC, $t = 1$ min.)		V_{Isol}	1500	V



Weight : 5.9 g

(Note) : di/dt Test Condition, $i_G = 30$ mA, $t_{gw} = 10 \mu\text{s}$, $t_{gr} \leq 250$ ns

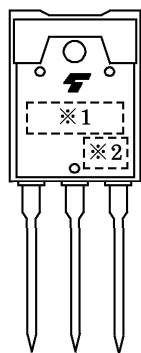
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ELECTRICAL CHARACTERISTICS (Ta = 25°C)

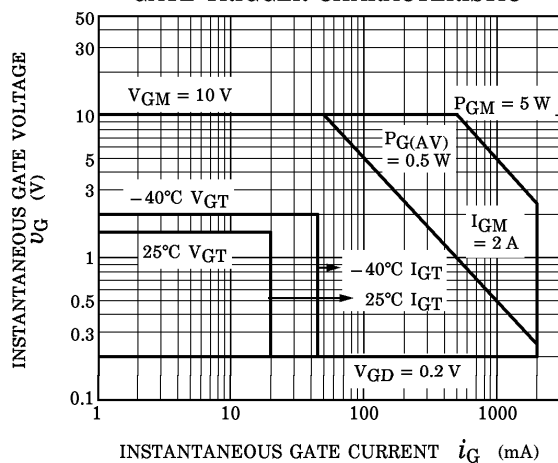
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Repetitive Peak Off-State Current and Repetitive Peak Reverse Current	I_{DRM} I_{RRM}	$V_{\text{DRM}} = V_{\text{RRM}} = \text{Rated}$	—	—	20	μA
Peak On-State Voltage	V_{TM}	$I_{\text{TM}} = 80 \text{ A}$	—	—	1.5	V
Gate Trigger Voltage	V_{GT}	$V_{\text{D}}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

MARKING

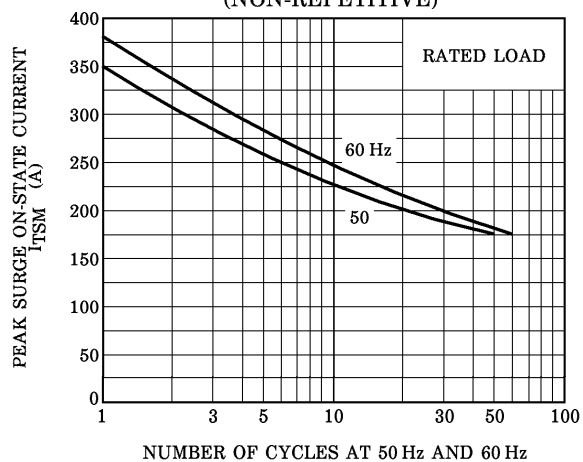
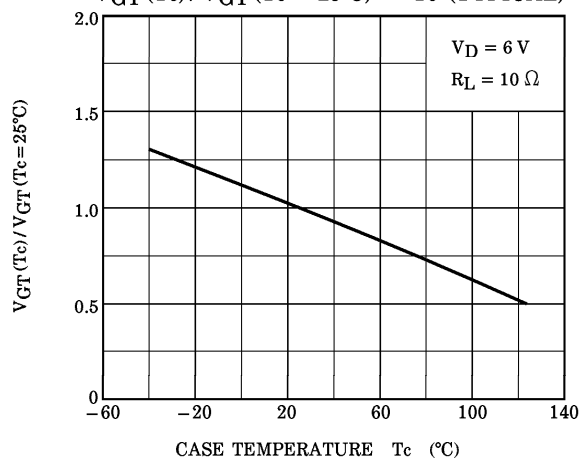
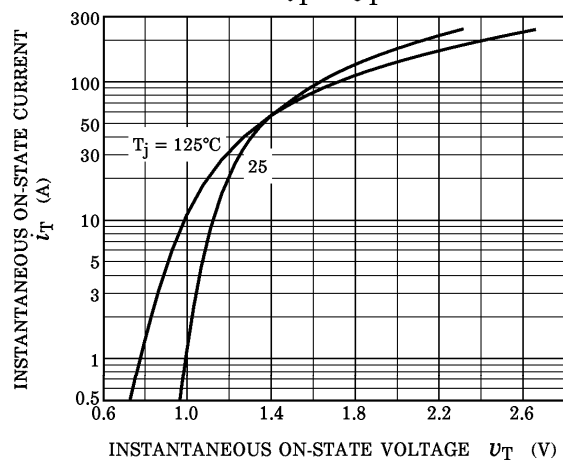
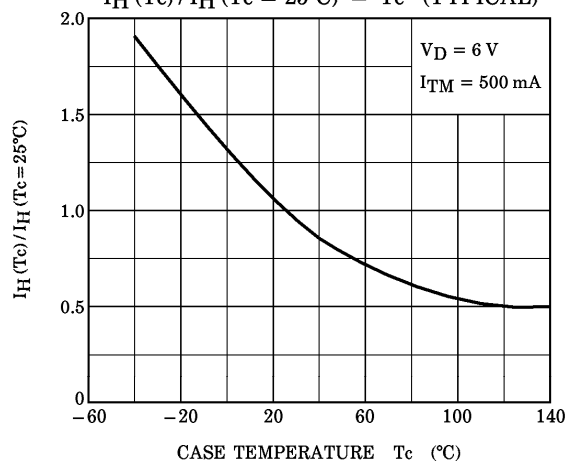


NUMBER	SYMBOL		MARK
※1	TYPE	SF25GZ51	F25GZ51
		SF25JZ51	F25JZ51
※2	Lot Number Month (Starting from Alphabet A) Year (Last Decimal Digit of the Current Year)		Example 8A : January 1998 8B : February 1998 8L : December 1998

GATE TRIGGER CHARACTERISTIC



SURGE ON-STATE CURRENT (NON-REPETITIVE)

 $V_{GT}(T_c) / V_{GT}(T_c = 25^\circ\text{C}) - T_c$ (TYPICAL) $i_T - v_T$  $I_H(T_c) / I_H(T_c = 25^\circ\text{C}) - T_c$ (TYPICAL) $I_{GT}(T_c) / I_{GT}(T_c = 25^\circ\text{C}) - T_c$ (TYPICAL)