

TOSHIBA THYRISTOR SILICON PLANAR TYPE

# SF16GZ51, SF16JZ51

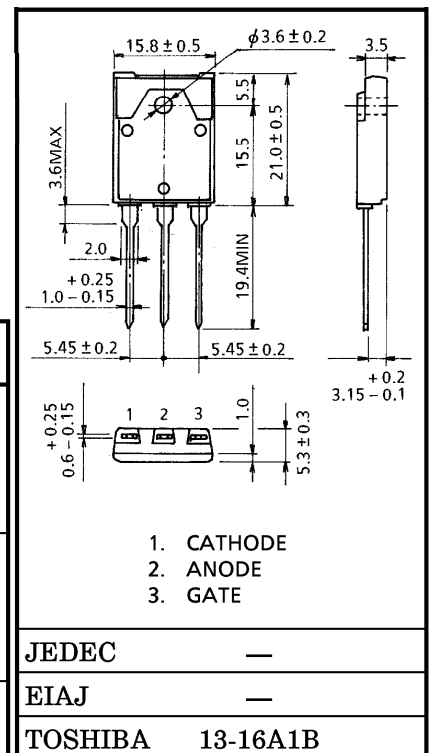
MEDIUM POWER CONTROL APPLICATIONS

Unit in mm

- Repetitive Peak Off-State Voltage :  $V_{DRM}$
- Repetitive Peak Reverse Voltage :  $V_{RRM}$  } = 400, 600V
- Average On-State Current :  $I_T(AV) = 16A$
- Isolation Voltage :  $V_{Isol} = 1500V AC$

**MAXIMUM RATINGS**

CHARACTERISTIC		SYMBOL	RATING	UNIT
Repetitive Peak Off-State Voltage and Repetitive Peak Reverse Voltage	SF16GZ51	$V_{DRM}$ $V_{RRM}$	400	V
	SF16JZ51		600	
Non-Repetitive Peak Reverse Voltage (Non-Repetitive < 5ms, $T_j = 0 \sim 125^\circ C$ )	SF16GZ51	$V_{RSM}$	500	V
	SF16JZ51		720	
Average On-State Current (Half Sine Waveform)		$I_T(AV)$	16	A
R.M.S On-State Current		$I_T(RMS)$	25	A
Peak One Cycle Surge On-State Current (Non-Repetitive)		$I_{TSM}$	250 (50Hz)	A
			275 (60Hz)	
$I^2t$ Limit Value		$I^2t$	312	$A^2s$
Critical Rate of Rise of On-State Current (Note)		$di/dt$	100	$A/\mu s$
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	$^\circ C$
Storage Temperature Range		$T_{stg}$	-40~125	$^\circ C$
Isolation Voltage (AC, $t = 1min.$ )		$V_{Isol}$	1500	V



Weight : 5.9g

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

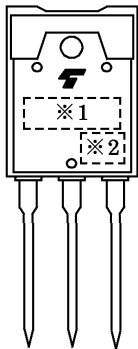
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ELECTRICAL CHARACTERISTICS (Ta = 25°C)

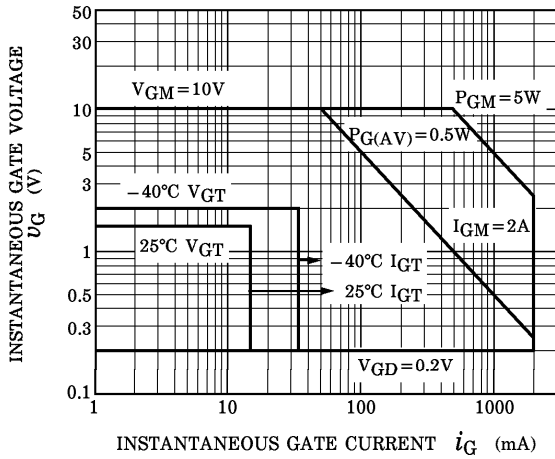
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Repetitive Peak Off-State Current and Repetitive Peak Reverse Current	$I_{DRM}$ $I_{RRM}$	$V_{DRM} = V_{RRM} = \text{Rated}$	—	—	20	$\mu\text{A}$
Peak On-State Voltage	$V_{TM}$	$I_{TM} = 50\text{A}$	—	—	1.5	V
Gate Trigger Voltage	$V_{GT}$	$V_D = 6\text{V}, R_L = 10\Omega$	—	—	1.5	V
Gate Trigger Current	$I_{GT}$		—	—	15	mA
Holding Current	$I_H$	$V_D = 6\text{V}, I_{TM} = 500\text{mA}$	—	—	50	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	—	—	1.5	$^\circ\text{C}/\text{W}$

MARKING

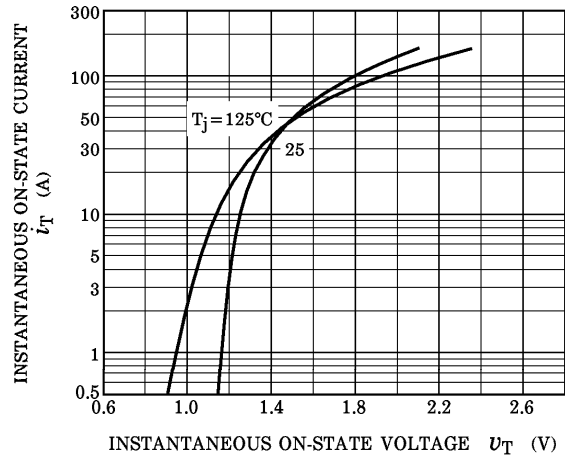


NUMBER	SYMBOL		MARK
※1	TYPE	SF16GZ51	F16GZ51
		SF16JZ51	F16JZ51
※2	Lot Number Month (Starting from Alphabet A) Year (Last Decimal Digit of the Current Year)		Example 8A : January 1998 8B : February 1998 8L : December 1998

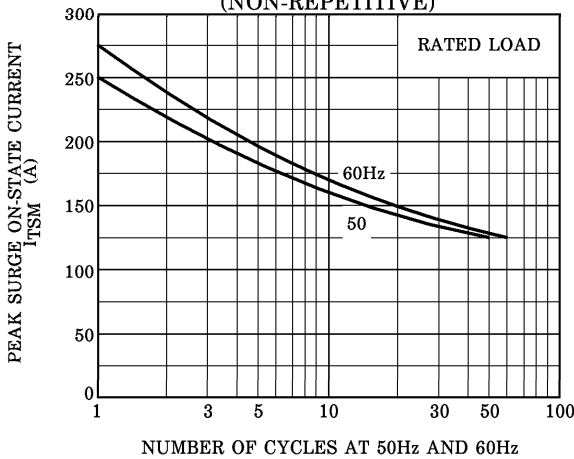
GATE TRIGGER CHARACTERISTIC



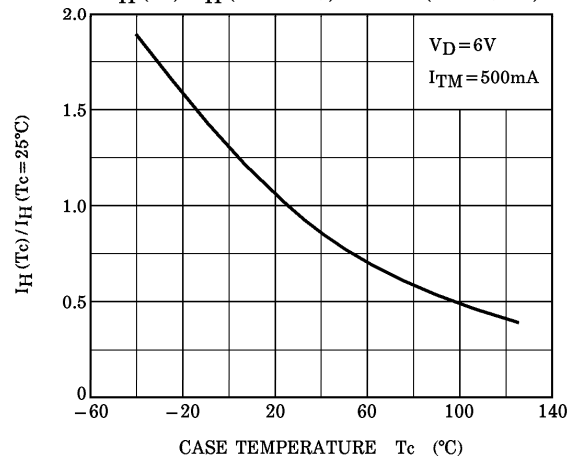
$i_T - v_T$



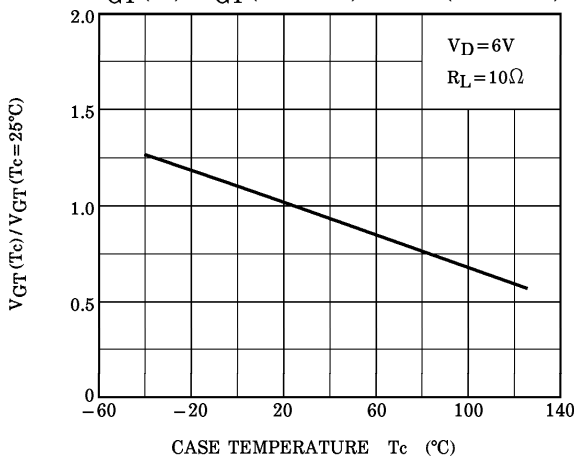
SURGE ON-STATE CURRENT (NON-REPETITIVE)



$I_H(T_c) / I_H(T_c=25^\circ\text{C}) - T_c$  (TYPICAL)



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



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

