

TOSHIBA THYRISTOR SILICON PLANAR TYPE

SF8GZ47, SF8JZ47

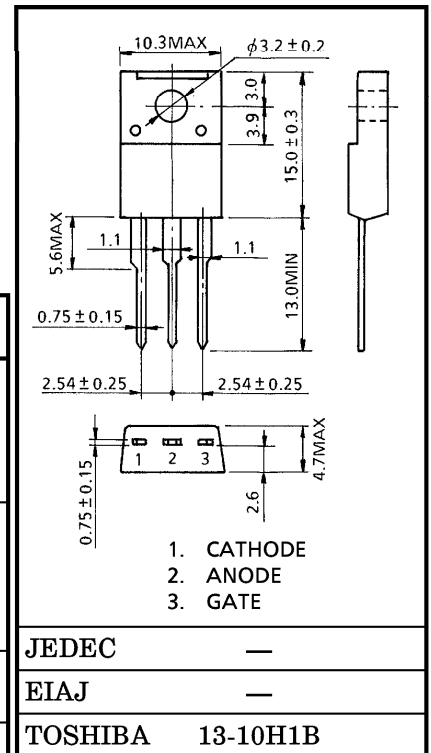
MEDIUM POWER CONTROL APPLICATIONS

Unit in mm

- Repetitive Peak Off-State Voltage : V_{DRM} } = 400, 600 V
- Repetitive Peak Reverse Voltage : V_{RRM} }
- Average On-State Current : $I_T(AV) = 8$ A
- Isolation Voltage : $V_{ISOL} = 1500$ V AC

MAXIMUM RATINGS

CHARACTERISTIC		SYMBOL	RATING	UNIT
Repetitive Peak Off-State Voltage and Repetitive Peak Reverse Voltage	SF8GZ47	V_{DRM} V_{RRM}	400	V
	SF8JZ47		600	
Non-Repetitive Peak Reverse Voltage (Non-Repetitive < 5ms, $T_j = 0 \sim 125^\circ\text{C}$)	SF8GZ47	V_{RSM}	500	V
	SF8JZ47		720	
Average On-State Current (Half Sine Waveform $T_c = 72^\circ\text{C}$)		$I_T(AV)$	8	A
R.M.S On-State Current		$I_T(RMS)$	12.6	A
Peak One Cycle Surge On-State Current (Non-Repetitive)		I_{TSM}	120 (50 Hz)	A
			132 (60 Hz)	
I^2t Limit Value		I^2t	72	A^2s
Critical Rate of Rise of On-State Current (Note 1)		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 : 1.7 g

(Note 1) : di/dt Test Condition

$$V_{DRM} = 0.5 \times \text{Rated}, I_{TM} \leq 25 \text{ A}, t_{gw} \geq 10 \mu\text{s},$$

$$t_{gr} \leq 250 \text{ ns}, i_{gp} = I_{GT} \times 2.0$$

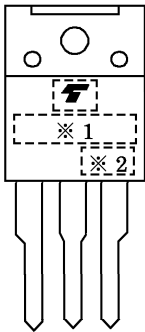
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ELECTRICAL CHARACTERISTICS (Ta = 25°C)

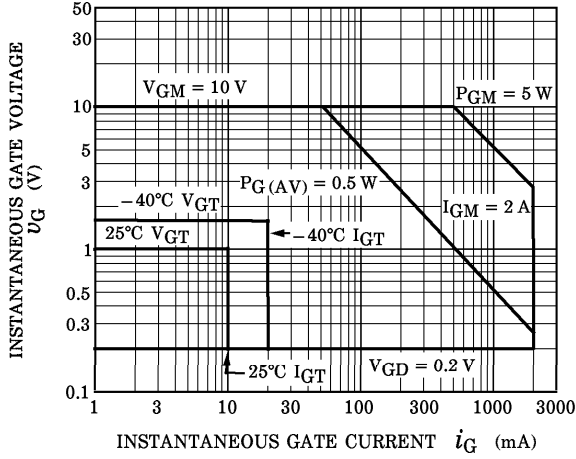
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Repetitive Peak Off-State Current and Repetitive Peak Reverse Current	I_{DRM} I_{RRM}	$V_{DRM} = V_{RRM} = \text{Rated}$	—	—	10	μA
Peak On-State Voltage	V_{TM}	$I_{TM} = 25 \text{ A}$	—	—	1.5	V
Gate Trigger Voltage	V_{GT}	$V_D = 6 \text{ V}, R_L = 10 \Omega$	—	—	1.0	V
Gate Trigger Current	I_{GT}		—	—	10	mA
Gate Non-Trigger Voltage	V_{GD}	$V_D = \text{Rated} \times 2/3, T_c = 125^\circ\text{C}$	0.2	—	—	V
Critical Rate of Rise of Off-State Voltage	dv/dt	$V_{DRM} = \text{Rated}, T_c = 125^\circ\text{C}$ Exponential Rise	—	50	—	$\text{V}/\mu\text{s}$
Holding Current	I_H	$V_D = 6 \text{ V}, I_{TM} = 1 \text{ A}$	—	—	40	mA
Latching Current	I_L	$V_D = 6 \text{ V}, f = 50\text{Hz},$ $t_{gw} = 50 \mu\text{s}, i_G = 30 \text{ mA}$	—	—	50	mA
Thermal Resistance	$R_{th(j-c)}$	Junction to Case	—	—	3.7	$^\circ\text{C}/\text{W}$

MARKING

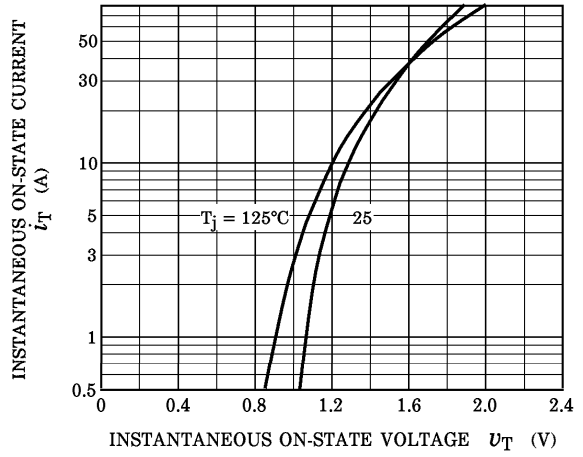


※1	MARK	F8GZ47	TYPE NAME	SF8GZ47
		F8JZ47		SF8JZ47
※2	Lot Number		Example	
	<div style="display: flex; align-items: center;"> <div style="border: 1px solid black; width: 20px; height: 20px; margin-right: 5px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px; margin-right: 5px;"></div> <div style="margin-left: 10px;"> <p>Month (Starting from Alphabet A)</p> <p>Year (Last Decimal Digit of the Current Year)</p> </div> </div>	<p>8A : January 1998</p> <p>8B : February 1998</p> <p>8L : December 1998</p>		

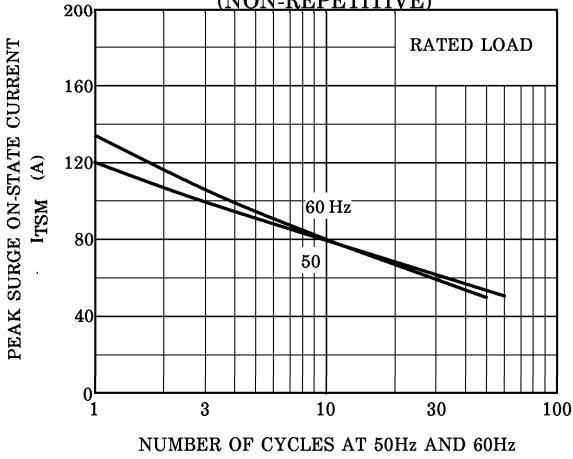
GATE TRIGGER CHARACTERISTIC



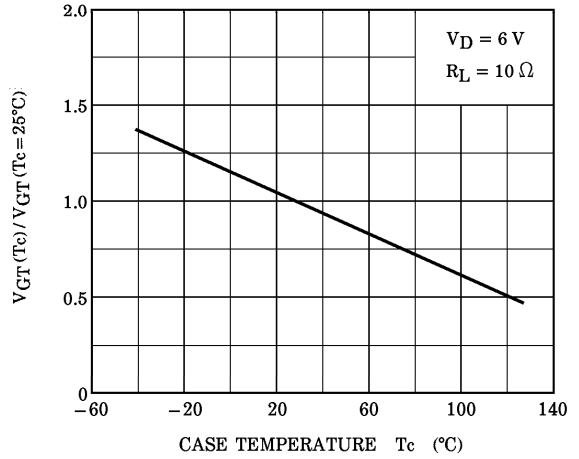
$i_T - v_T$



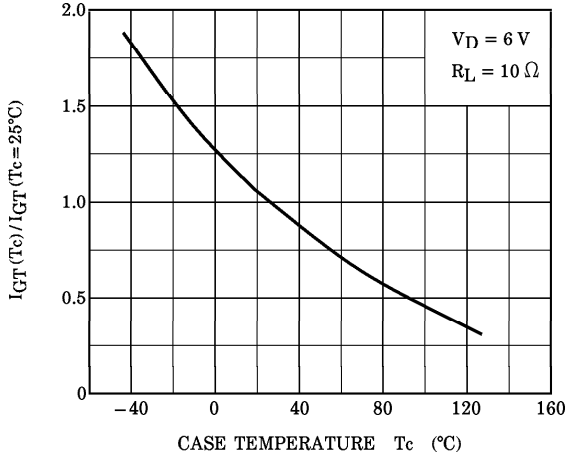
SURGE ON-STATE CURRENT (NON-REPETITIVE)



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



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



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

