

TOSHIBA THYRISITOR SILICON PLANAR TYPE

# SF8GZ47, SF8JZ47

## MEDIUM POWER CONTROL APPLICATIONS

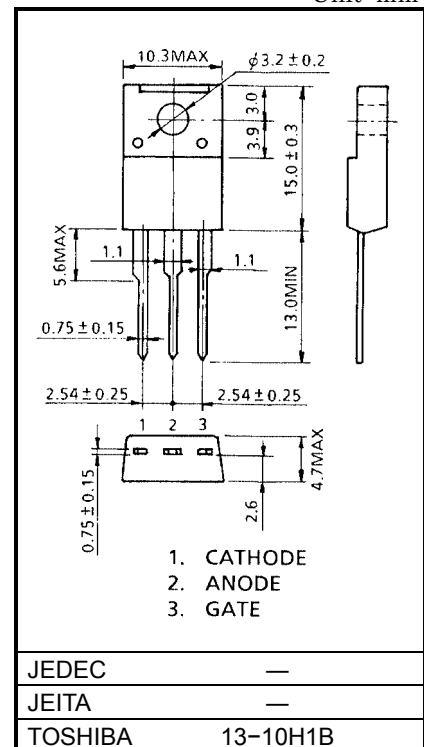
- Repetitive Peak off-State Voltage :  $V_{DRM} = 400, 600V$   
 Repetitive Peak Reverse Voltage :  $V_{RRM} = 400, 600V$
- Average On-State Current :  $I_T (AV) = 8A$
- Isolation Voltage :  $V_{ISOL} = 1500V AC$

## 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, $T_j = 0\sim 125^\circ C$ )	SF8GZ47	$V_{RSM}$	500	V
	SF8JZ47		720	
Average On-State Current (Half Sine Waveform $T_c = 72^\circ C$ )		$I_T (AV)$	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)	
$I^2 t$ Limit Value		$I^2 t$	72	$A^2 s$
Critical Rate of Rise of On-State Current (Note 1)		$di / dt$	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, $t = 1 min.$ )		$V_{ISOL}$	1500	V

Note 1:  $di / dt$  test condition,  
 $V_{DRM} = 0.5 \times \text{Rated}$ ,  $I_{TM} \leq 25A$ ,  $t_{gw} \geq 10\mu s$ ,  
 $t_{gr} \leq 250ns$ ,  $i_{gp} = I_{GT} \times 2.0$

Unit: mm

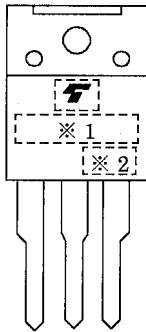


Weight: 1.7g

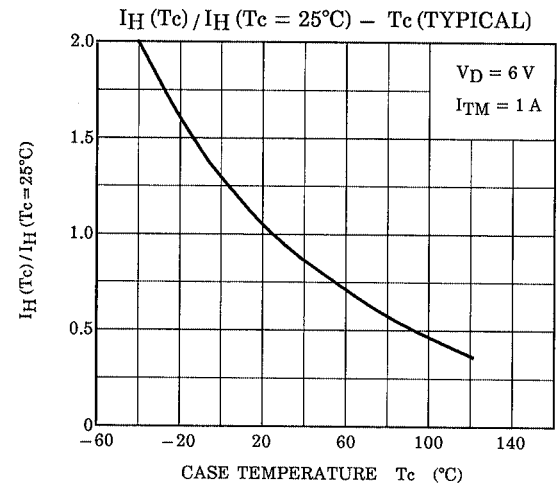
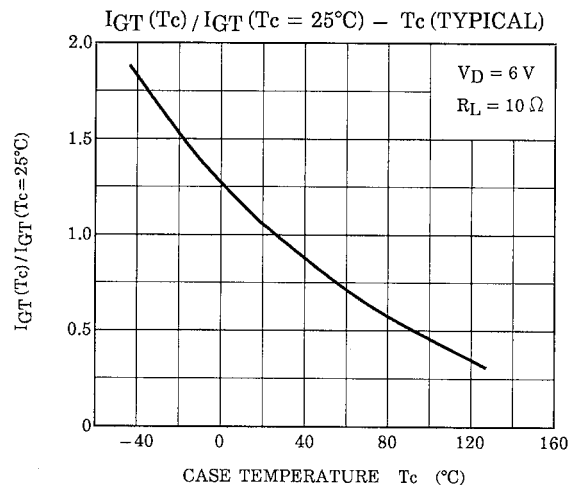
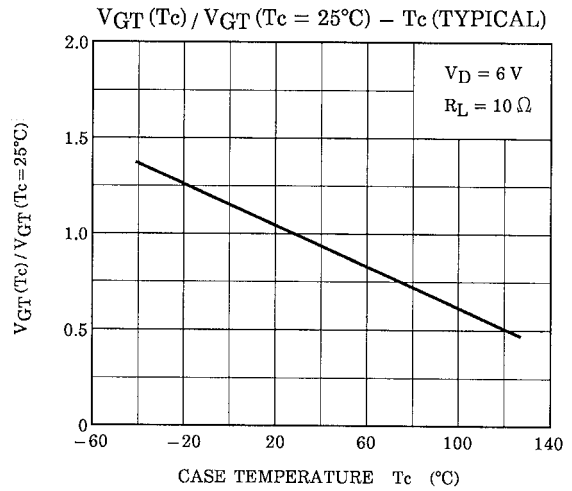
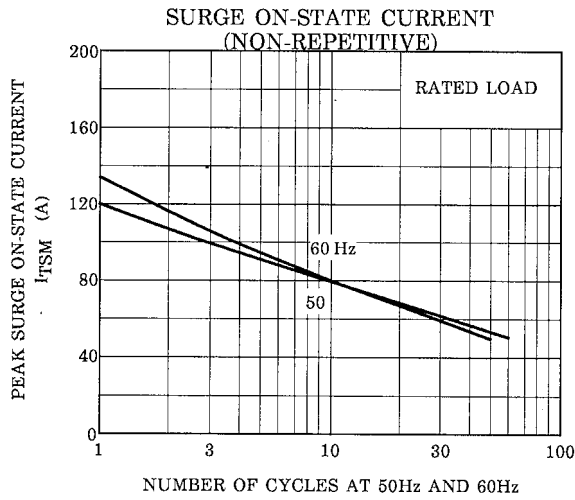
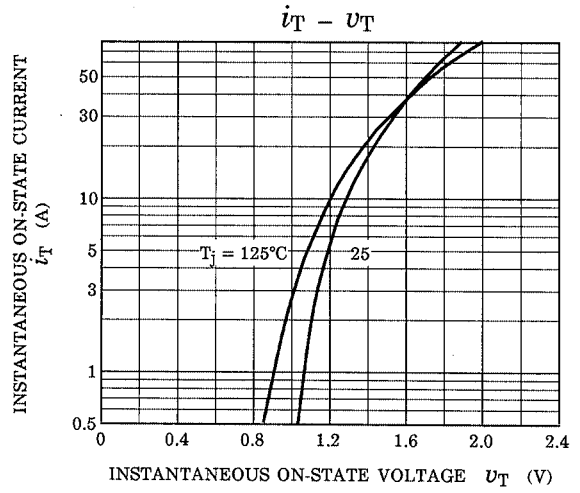
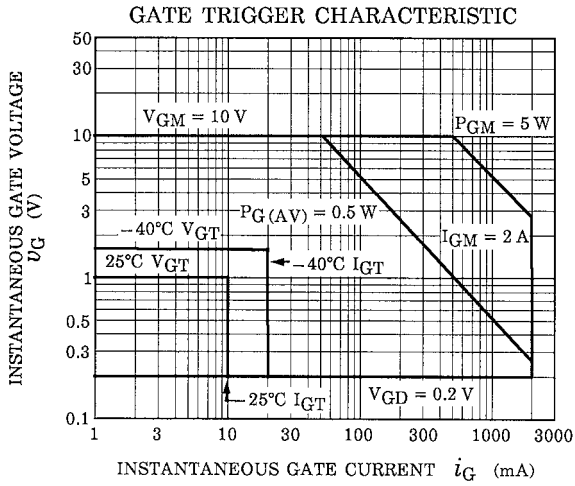
## ELECTRICAL CHARACTERISTICS (Ta = 25°C)

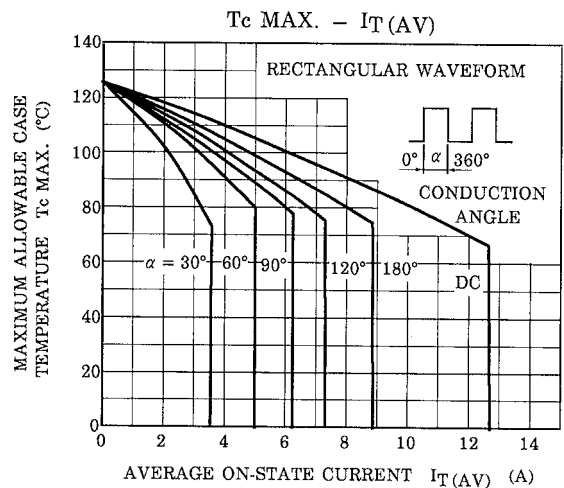
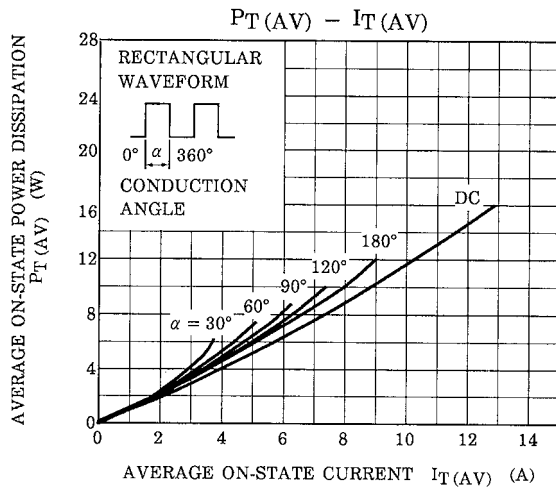
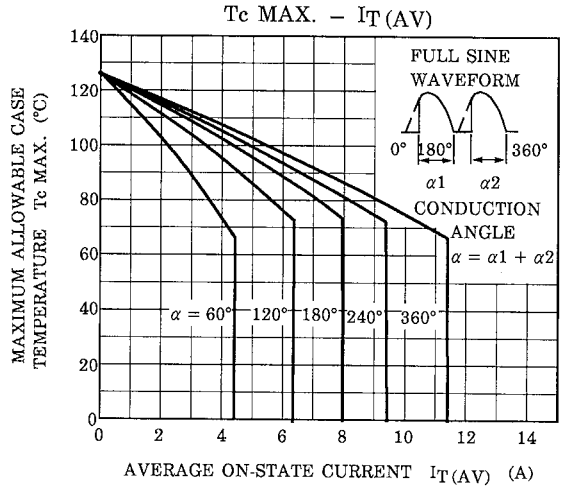
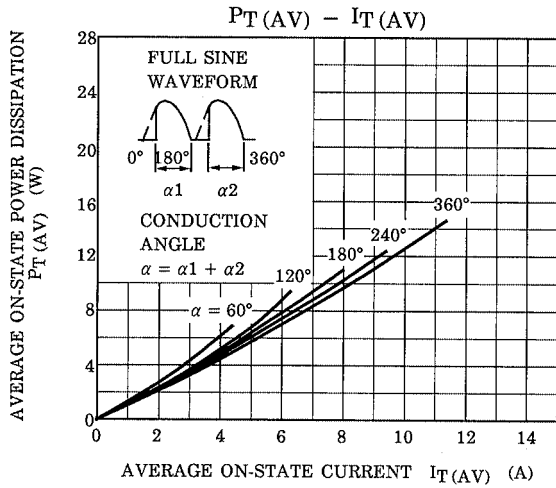
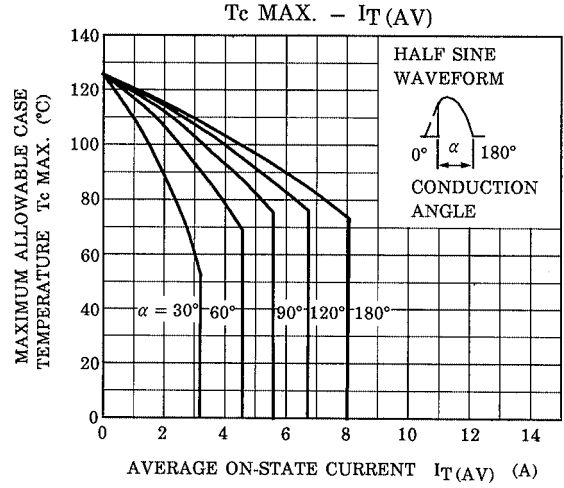
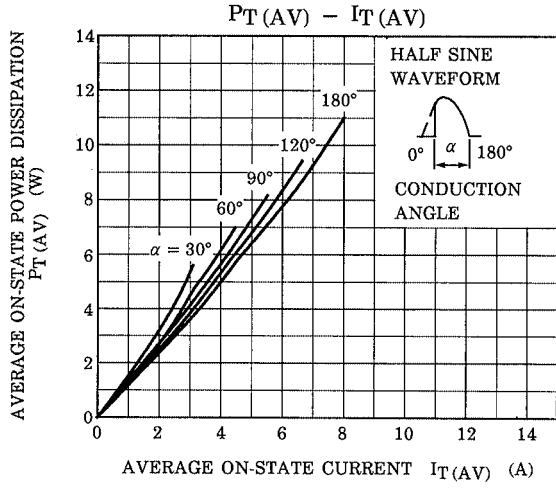
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN	TYP.	MAX	UNIT
Repetitive Peak Off-State Current and Repetitive Peak Reverse Current	$I_{DRM}$ $I_{RRM}$	$V_{DRM} = V_{RRM} = \text{Rated}$	—	—	10	$\mu\text{A}$
Peak On-State Voltage	$V_{TM}$	$I_{TM} = 25 \text{ A}$	—	—	1.5	V
Gate Trigger Voltage	$V_{GT}$	$V_D = 6 \text{ V}, R_L = 10 \Omega$	—	—	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	—	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	$^\circ\text{C} / \text{W}$

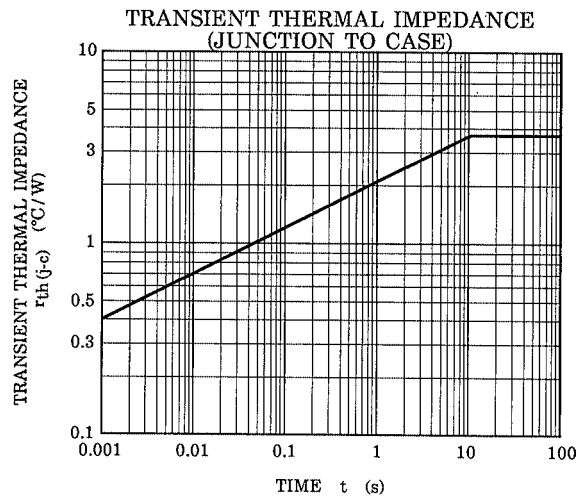
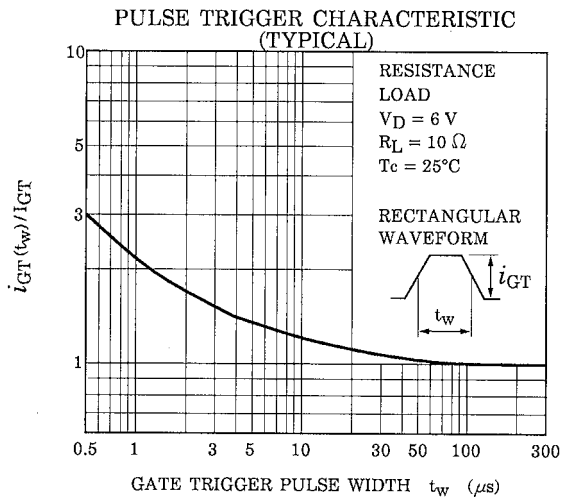
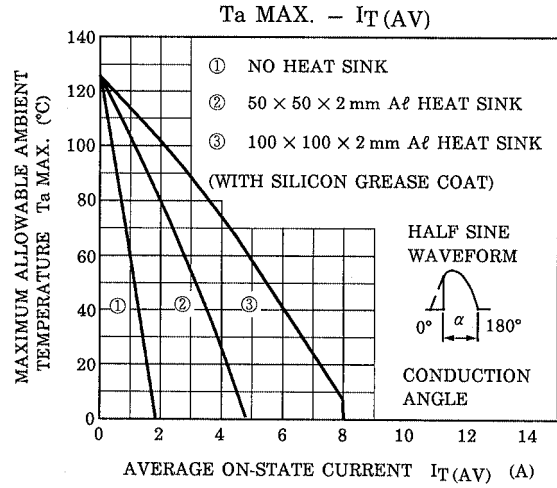
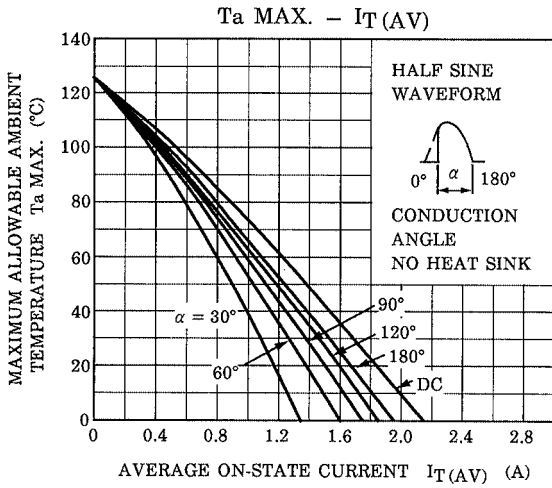
## MARKING



*1	TYPE	F8GZ47	TYPE NAME	SF8GZ47
		F8JZ47		SF8JZ47
*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	







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