

TOSHIBA THYRISTOR SILICON PLANAR TYPE

SF10GZ47,SF10JZ47

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 : $I_T (AV) = 10A$
- Isolation Voltage : $V_{Isol} = 1500V AC$

MAXIMUM RATINGS

CHARACTERISTIC		SYMBOL	RATING	UNIT
Repetitive Peak Off-State Voltage and Repetitive Peak Reverse Voltage	SF10GZ47	V_{DRM} V_{RRM}	400	V
	SF10JZ47		600	
Non-Repetitive Peak Reverse Voltage (Non-Repetitive<5ms, $T_j = 0\sim 125^{\circ}C$)	SF10GZ47	V_{RSM}	500	V
	SF10JZ47		720	
Average On-State Current (Half Sine Waveform $T_c = 66^{\circ}C$)		I_T (AV)	10	A
R.M.S. On-State Current		I_T (RMS)	16	A
Peak One Cycle Surge On-State Current (Non-Repetitive)		I_{TSM}	160 (50Hz)	A
			176 (60Hz)	
I^2t Limit Value		I^2t	125	A^2s
Critical Rate of Rise of On-State Current (Note 1)		di / dt	100	A / μs
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

Note 1: di / dt test condition

$$V_{DRM} = 0.5 \times \text{Rated}$$

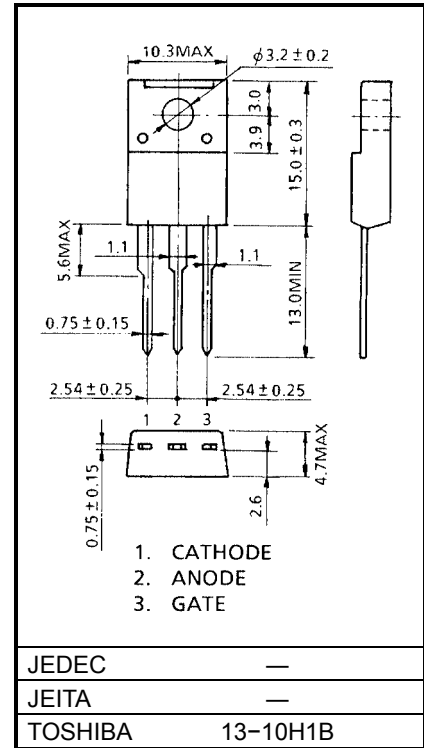
$$I_{TM} \leq 30A$$

$$t_{gw} \geq 10\mu s$$

$$t_{gr} \leq 250ns$$

$$i_{gp} = I_{GT} \times 2.0$$

Unit: mm

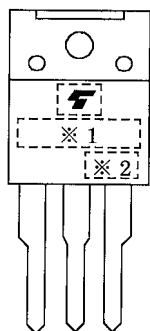


Weight: 1.7 g

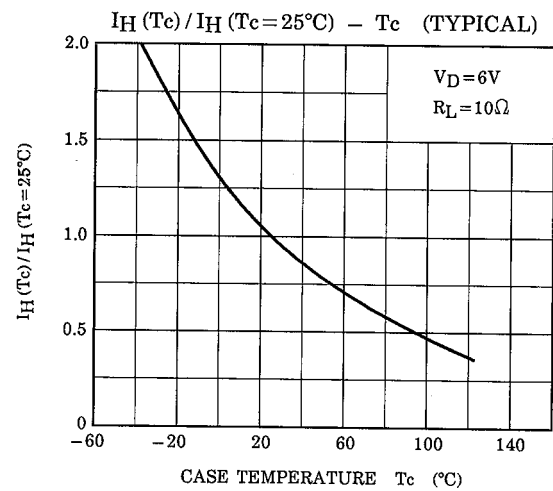
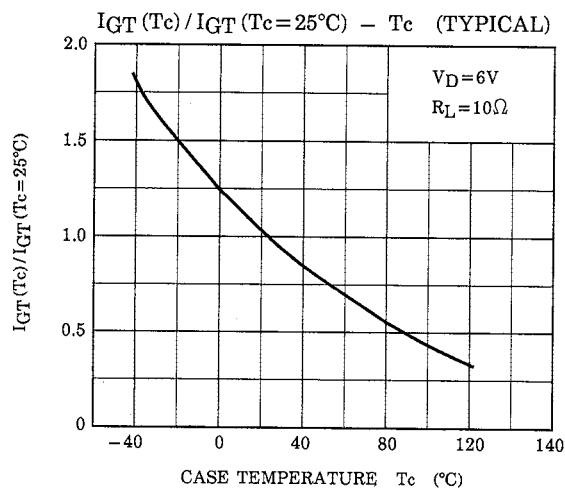
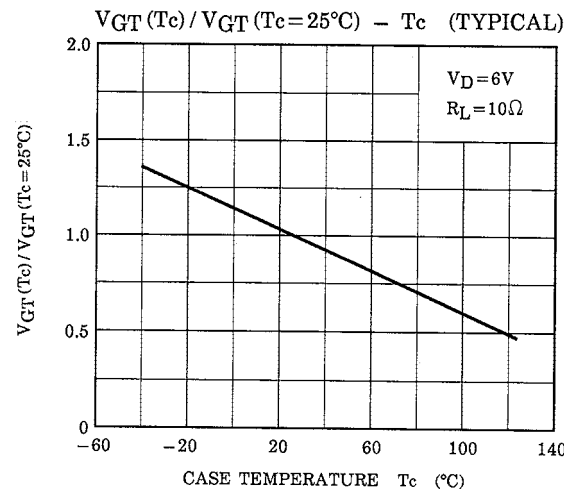
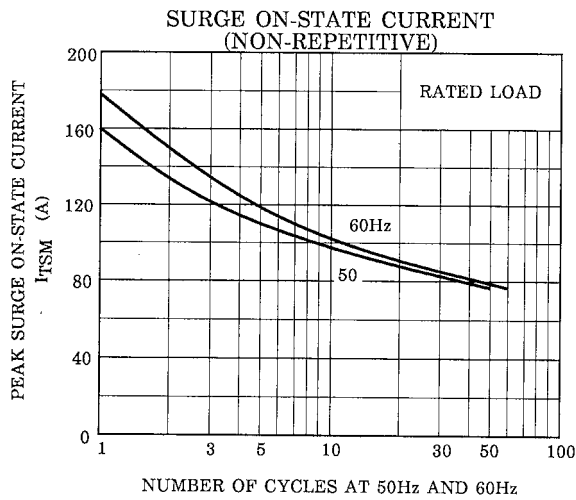
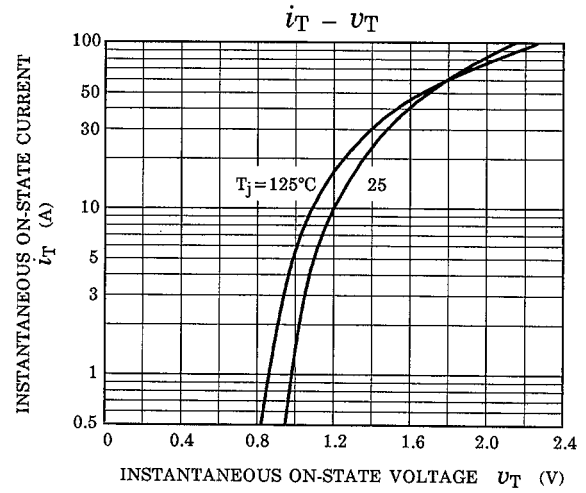
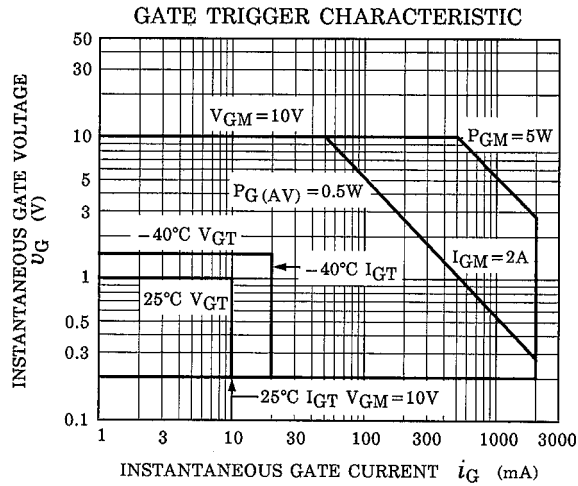
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

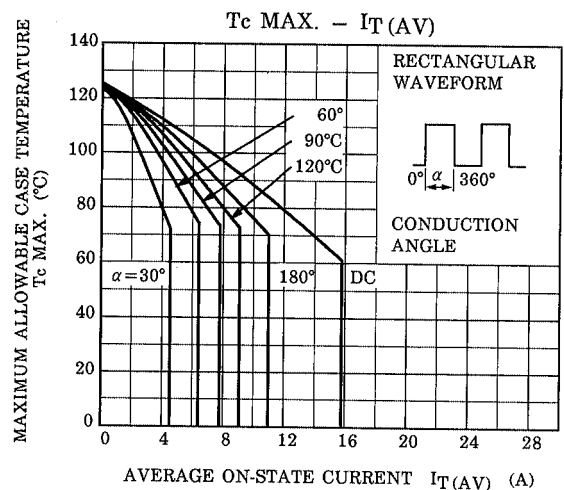
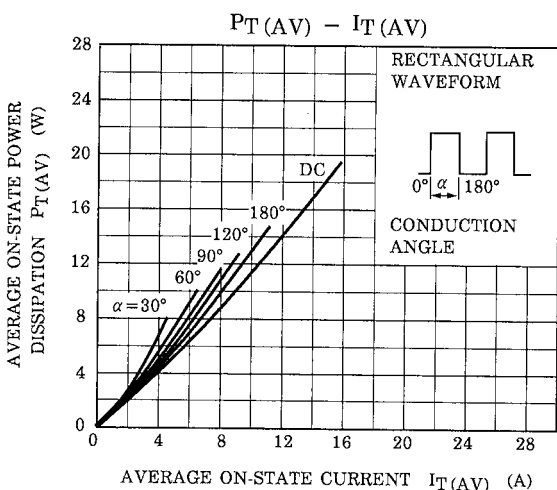
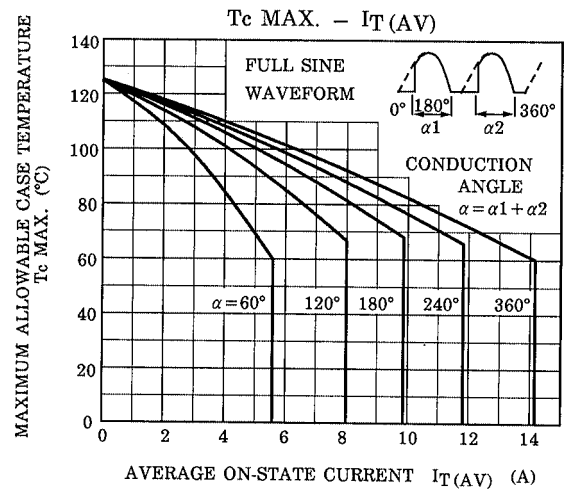
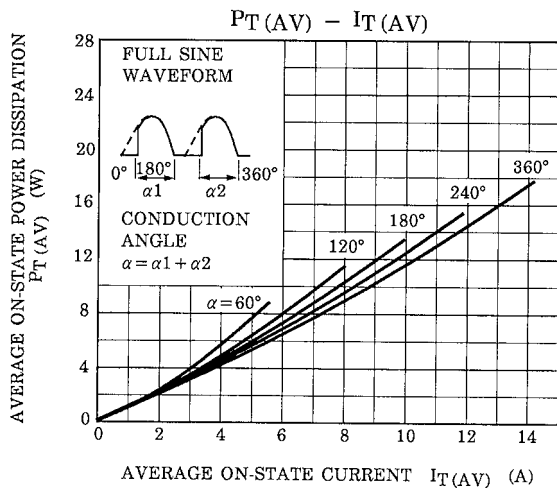
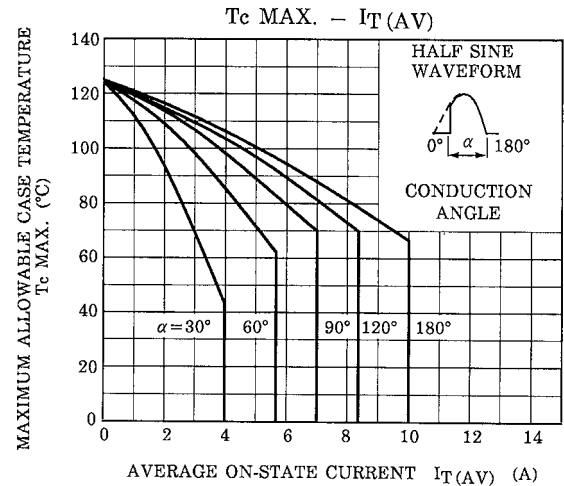
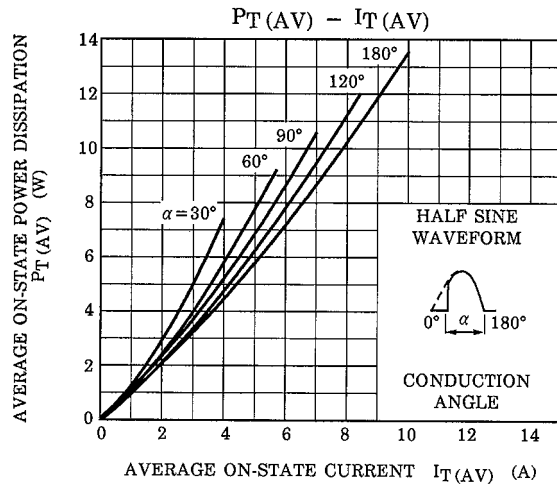
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN	TYP.	MAX	UNIT
Repetitive Peak Off-State Current and Repetitive Peak Reverse Current	I_{DRM} I_{RRM}	$V_{DRM} = V_{RRM} = \text{Rated}$	—	—	10	μA
Peak On-State Voltage	V_{TM}	$I_{TM} = 30\text{A}$	—	—	1.5	V
Gate Trigger Voltage	V_{GT}	$V_D = 6\text{V}, R_L = 10\Omega$	—	—	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 / μs
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	—	—	3.4	$^\circ\text{C} / \text{W}$

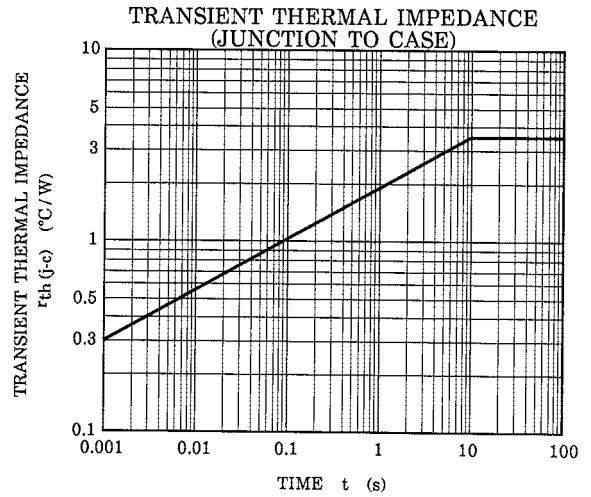
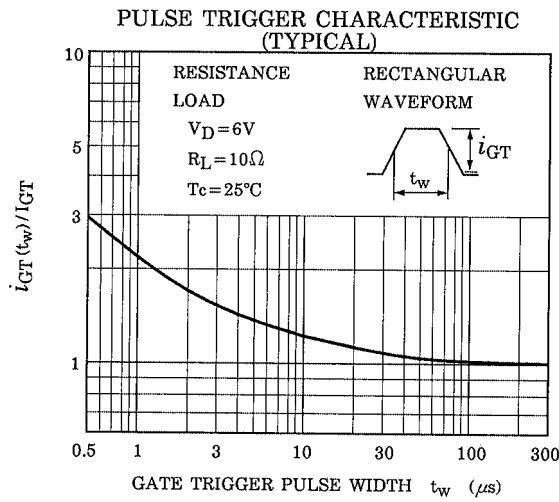
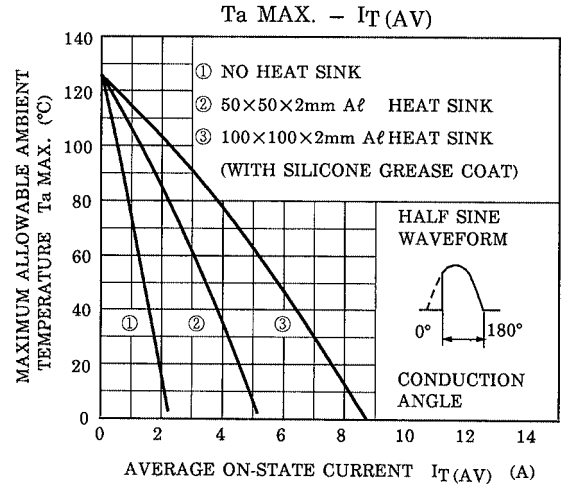
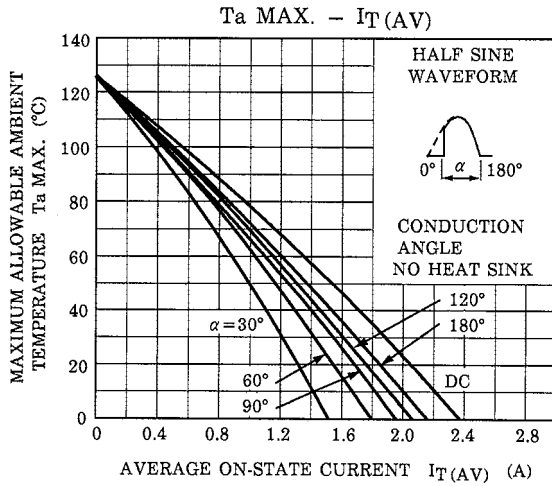
MARKING



*1	MARK	F10GZ47	TYPE NAME	SF10GZ47
		F10JZ47		SF10JZ47
*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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