

TOSHIBA Thyristor Silicon Planar Type

SF8GZ47, SF8JZ47

Medium-power control applications

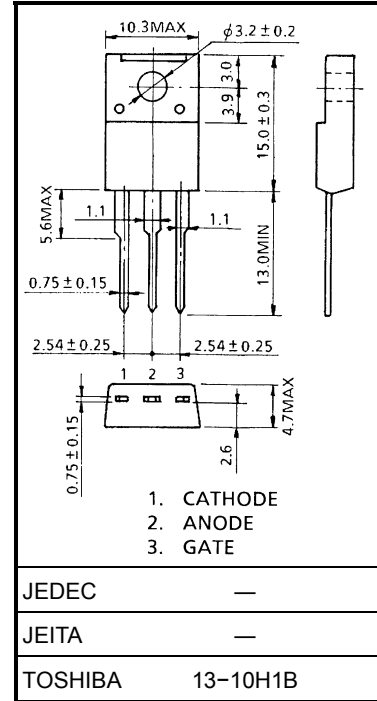
Unit: mm

- Repetitive peak off-state voltage : $V_{DRM} = 400 \text{ V}, 600 \text{ V}$
Repetitive peak reverse voltage : $V_{RRM} = 400 \text{ V}, 600 \text{ V}$
- Average on-state current : $I_T (AV) = 8 \text{ A}$
- Isolation voltage : $V_{ISOL} = 1500 \text{ V AC}$

Maximum Ratings

Characteristic	Symbol	Rating	Unit
Repetitive peak off-state voltage and repetitive peak reverse voltage	SF8GZ47	V_{DRM}	400
	SF8JZ47	V_{RRM}	600
Non-repetitive peak reverse voltage (non-repetitive < 5 ms, $T_j = 0 \sim 125^\circ\text{C}$)	SF8GZ47	V_{RSM}	500
	SF8JZ47	V_{RSM}	720
Average on-state current (half-sine waveform $T_c = 72^\circ\text{C}$)	$I_T (AV)$	8	A
rms 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}	-40~125	$^\circ\text{C}$
Isolation voltage (AC, $t = 1 \text{ min.}$)	V_{ISOL}	1500	V

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

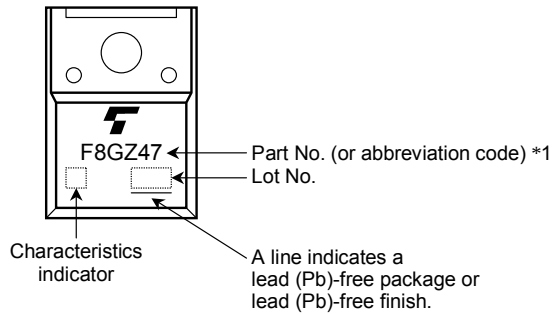


Weight: 2.0 g (typ.)

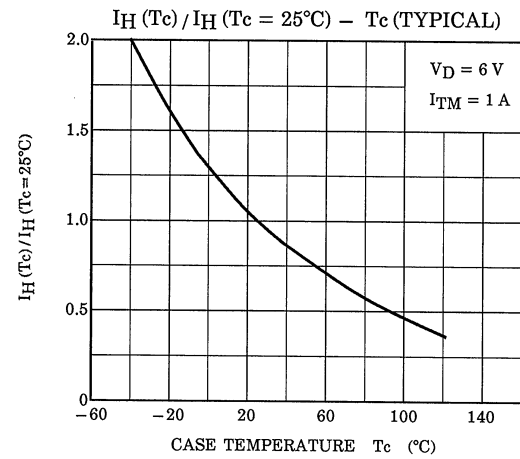
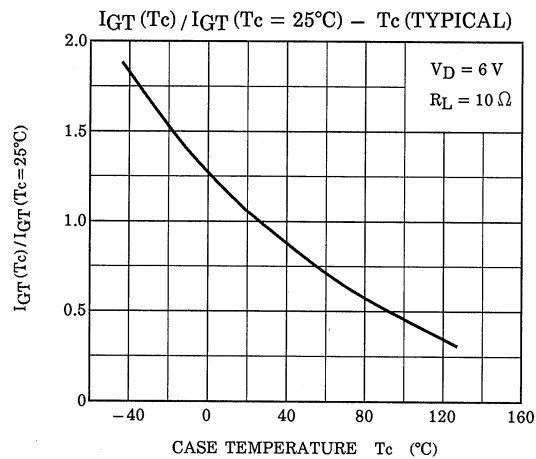
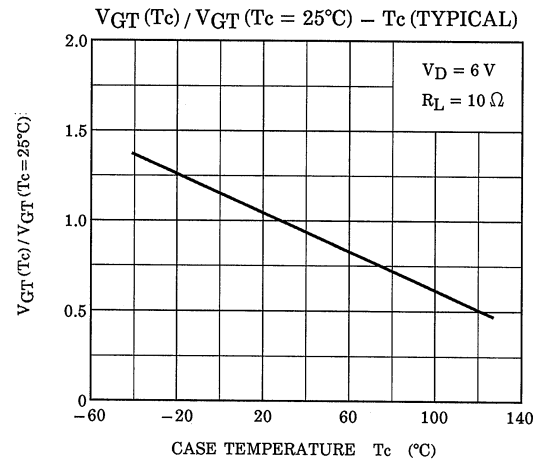
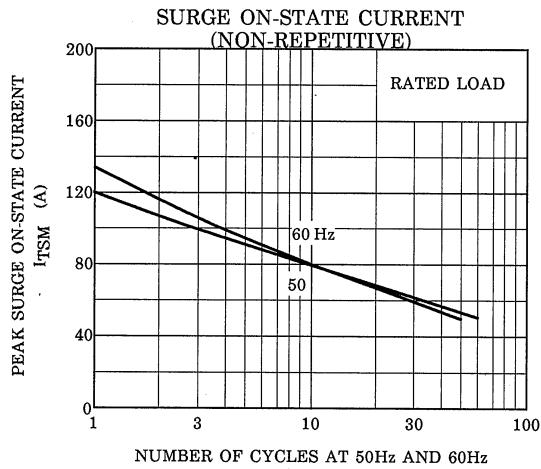
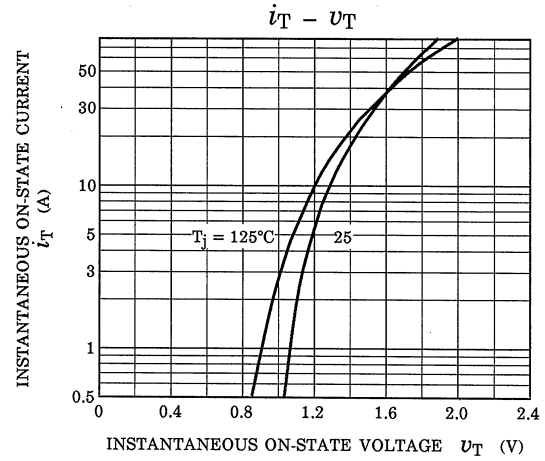
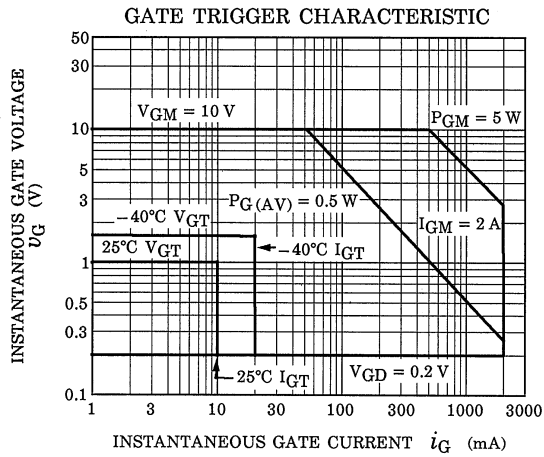
Electrical Characteristics (Ta = 25°C)

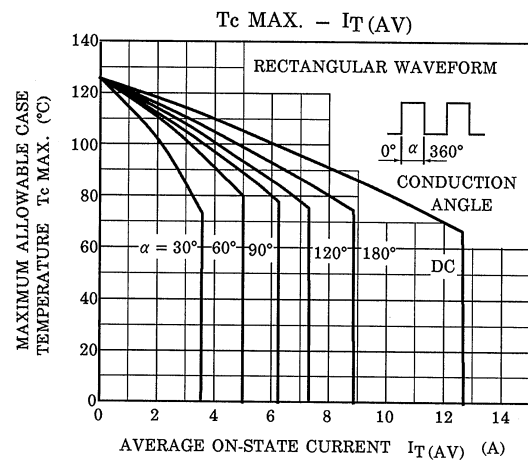
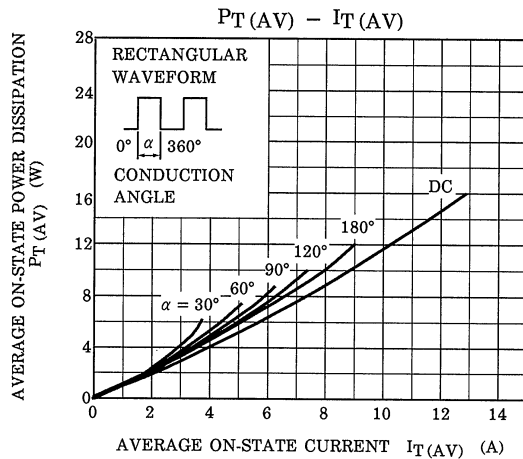
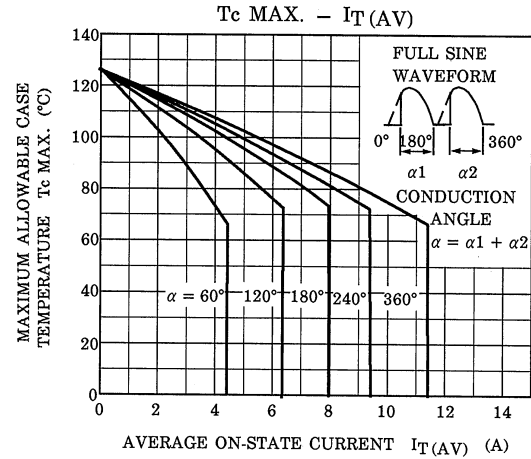
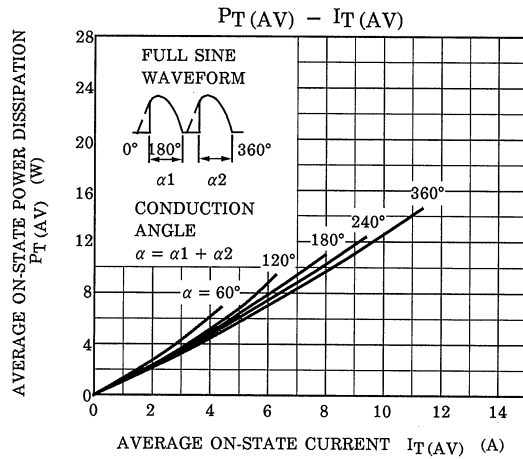
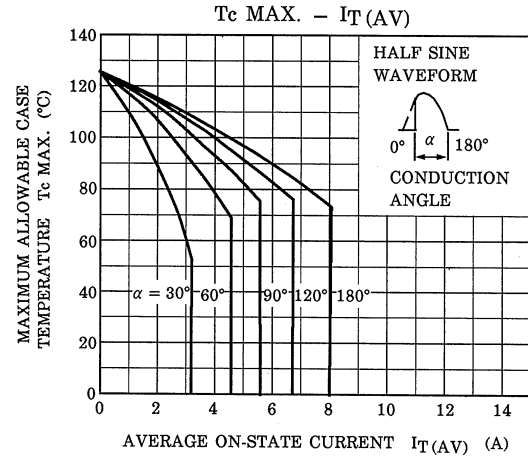
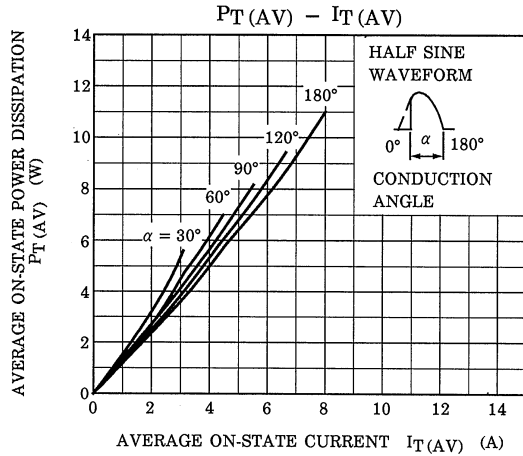
Characteristic	Symbol	Test Condition	Min	Typ.	Max	Unit
Repetitive peak off-state current and repetitive peak reverse current	I_{DRM} I_{RRM}	$V_{DRM} = V_{RRM} = \text{Rated}$	—	—	10	μA
Peak on-state voltage	V_{TM}	$I_{TM} = 25 \text{ A}$	—	—	1.5	V
Gate trigger voltage	V_{GT}	$V_D = 6 \text{ V}, R_L = 10 \Omega$	—	—	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	—	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	—	—	3.7	$^\circ\text{C/W}$

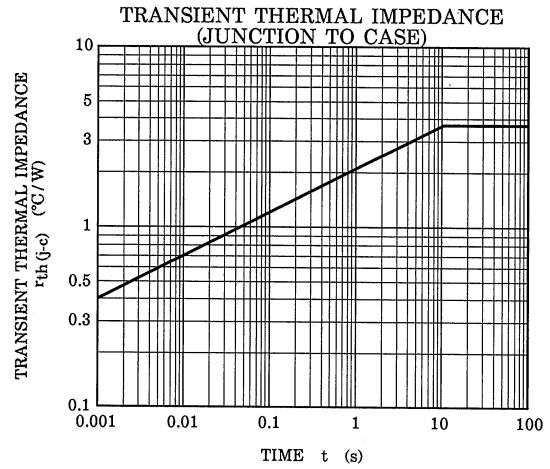
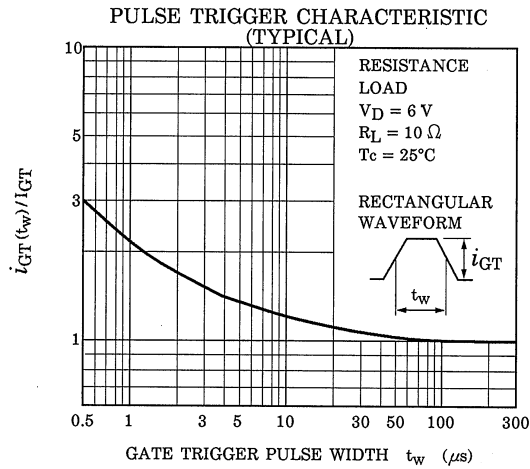
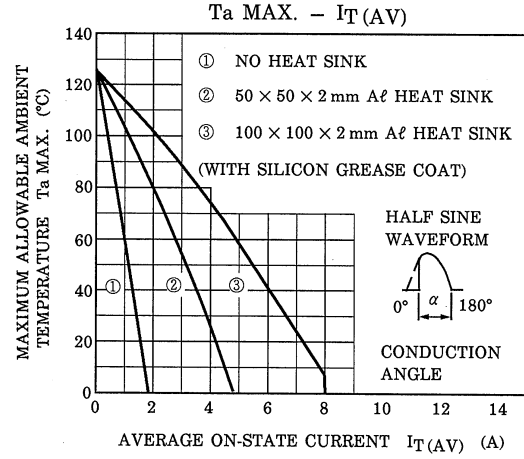
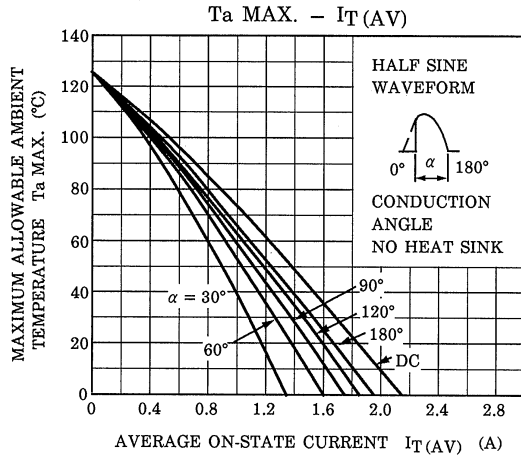
Marking



*1	Part No. (or Abbreviation Code)	Part No.
	F8GZ47	SF8GZ47
	F8JZ47	SF8JZ47







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