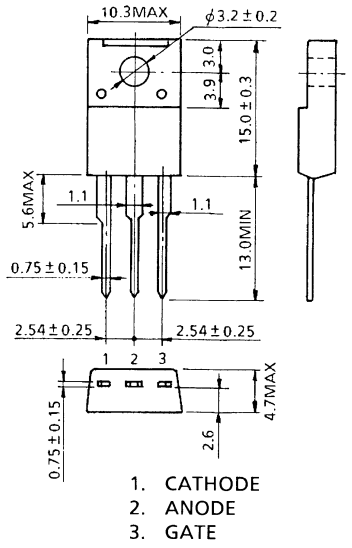
TOSHIBA THYRISITOR SILICON PLANAR TYPE

SF8GZ47, SF8JZ47

MEDIUM POWER CONTROL APPLICATIONS

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

Unit: mm



JEDEC	—
JEITA	—
TOSHIBA	13−10H1B

Weight: 1.7 g (typ.)

MAXIMUM RATINGS

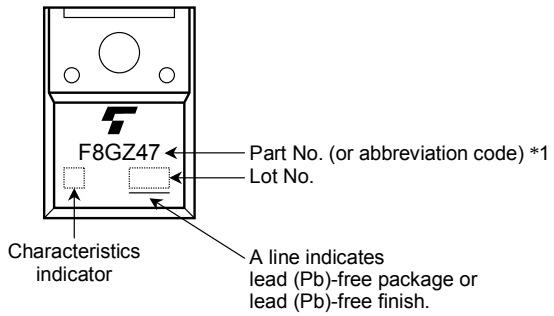
CHARACTERISTIC		SYMBOL	RATING	UNIT
Repetitive Peak Off−State Voltage and Repetitive Peak6 Reverse Voltage	SF8GZ47	V_{DRM} V_{RRM}	400	V
	SF8JZ47		600	
Non−Repetitive Peak Reverse Voltage (Non−Repetitive <5ms, T_j = 0~125°C)	SF8GZ47	V_{RSM}	500	V
	SF8JZ47		720	
Average On−State Current (Half Sine Waveform Tc = 72°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	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	°C
Storage Temperature Range		T_{stg}	−40~125	°C
Isolation Voltage (AC, t = 1 min.)		V_{ISOL}	1500	V

Note 1: di / dt test condition,
V_{DRM} = 0.5 × Rated, I_{TM} ≤ 25A, t_{gw} ≥ 10μs,
t_{gr} ≤ 250ns, i_{gp} = I_{GT} × 2.0

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

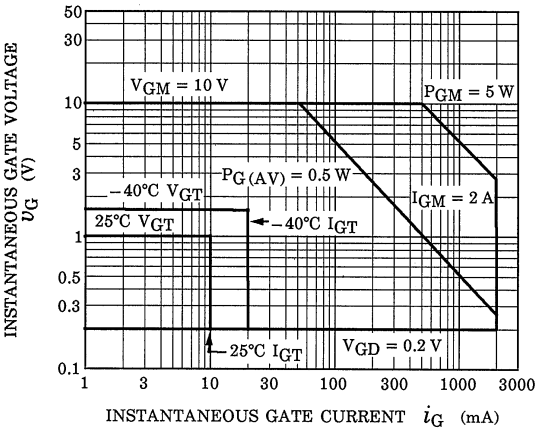
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN	TYP.	MAX	UNIT
Repetitive Peak Off−State Current and Repetitive Peak Reverse Current	I_{DRM} I_{RRM}	V_{DRM} = V_{RRM} = Rated	—	—	10	μA
Peak On−State Voltage	V_{TM}	I_{TM} = 25 A	—	—	1.5	V
Gate Trigger Voltage	V_{GT}	V_D = 6 V, R_L = 10 Ω	—	—	1.0	V
Gate Trigger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

MARKING

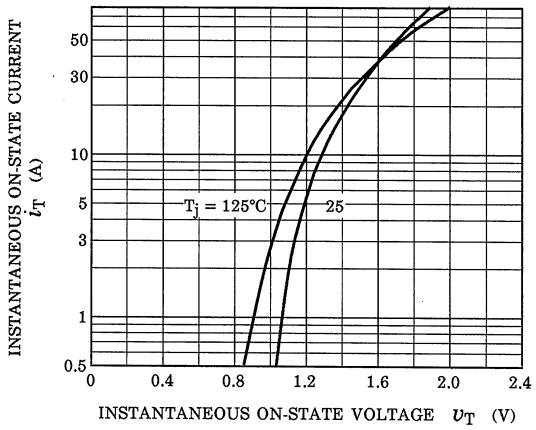


	Part No. (or abbreviation code)	Part No.
*1	F8GZ47	SF8GZ47
	F8JZ47	SF8JZ47

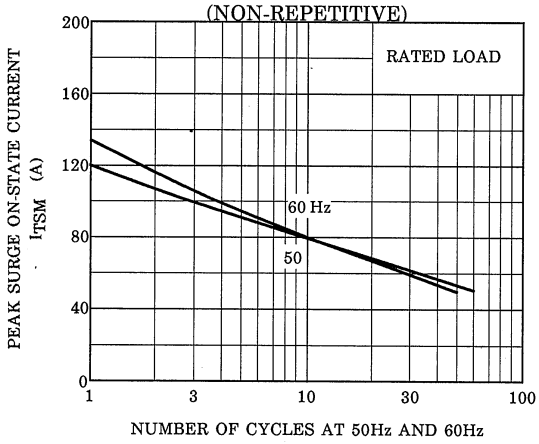
GATE TRIGGER CHARACTERISTIC



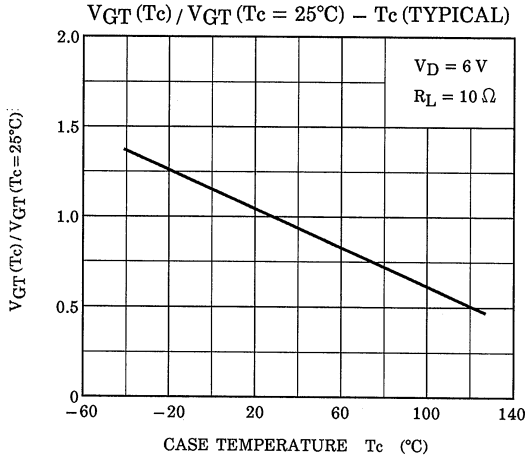
$i_T - v_T$



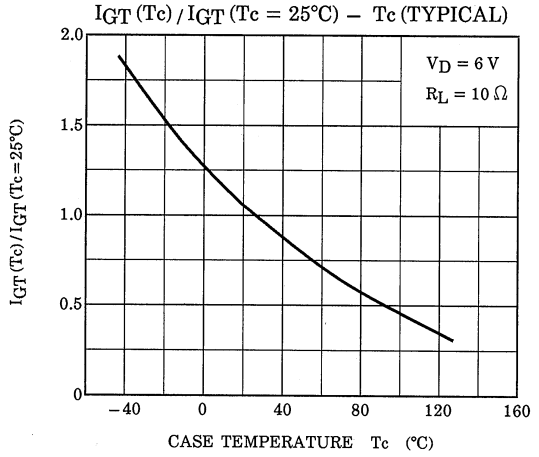
SURGE ON-STATE CURRENT
(NON-REPETITIVE)



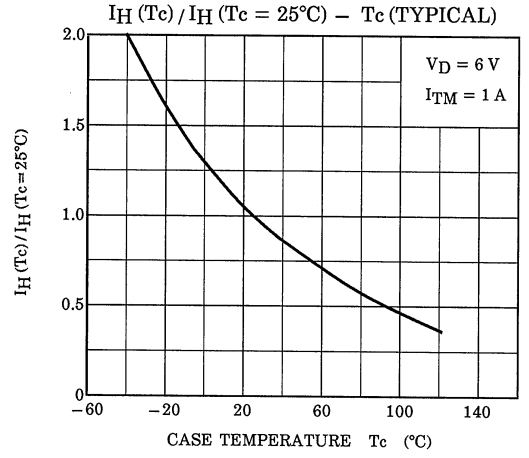
V_{GT} (Tc) / V_{GT} (Tc = 25°C) − Tc (TYPICAL)



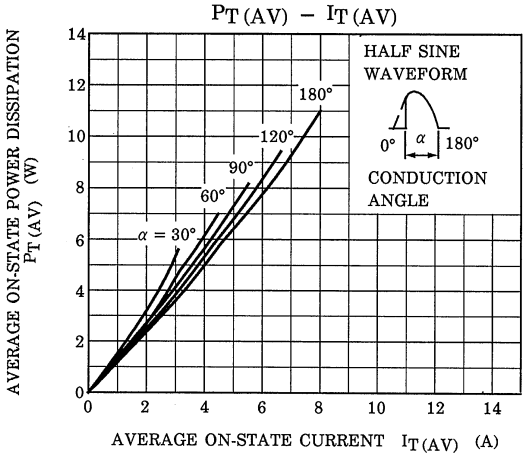
I_{GT} (Tc) / I_{GT} (Tc = 25°C) − Tc (TYPICAL)



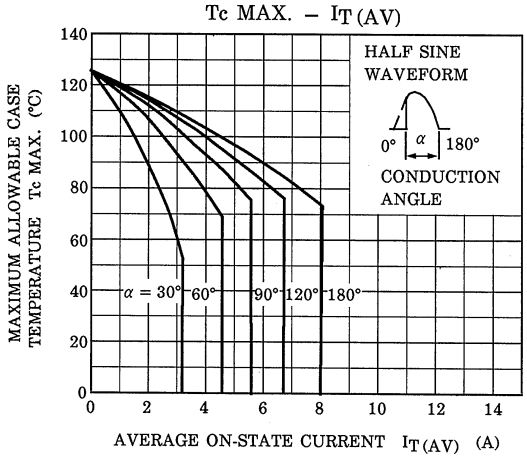
I_H (Tc) / I_H (Tc = 25°C) − Tc (TYPICAL)



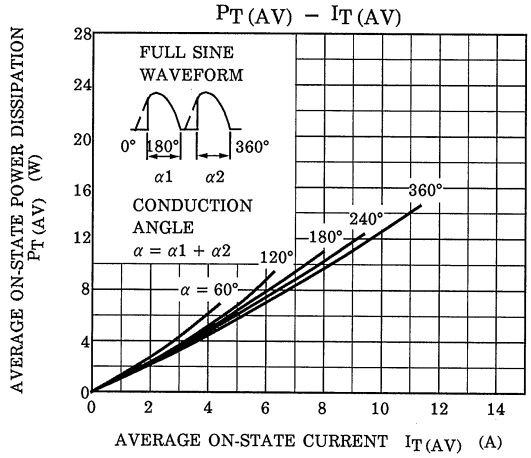
$P_{T(AV)} - I_{T(AV)}$



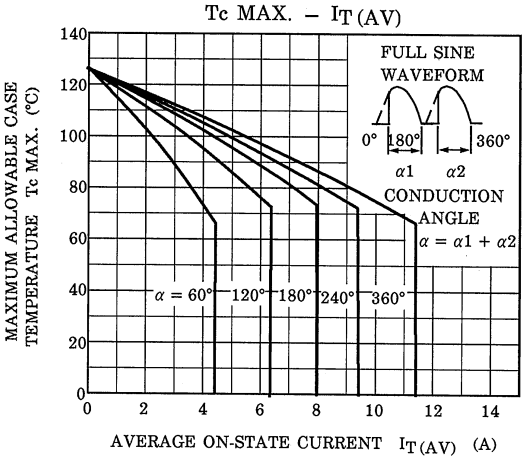
T_c MAX. $- I_{T(AV)}$



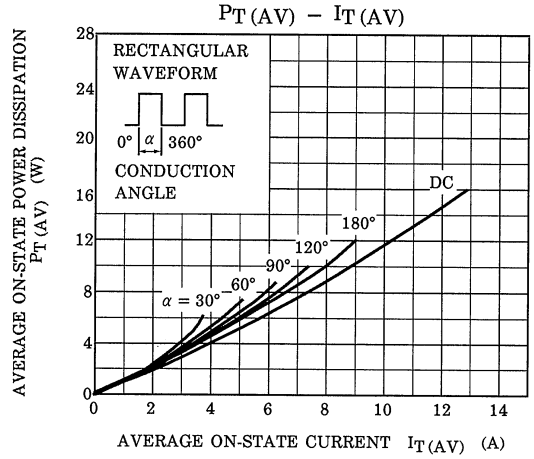
$P_{T(AV)} - I_{T(AV)}$



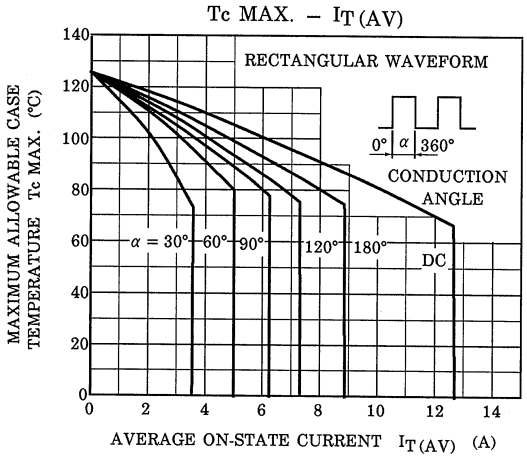
T_c MAX. $- I_{T(AV)}$



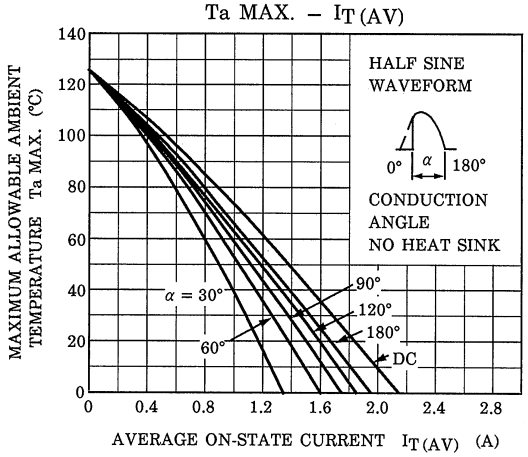
$P_{T(AV)} - I_{T(AV)}$



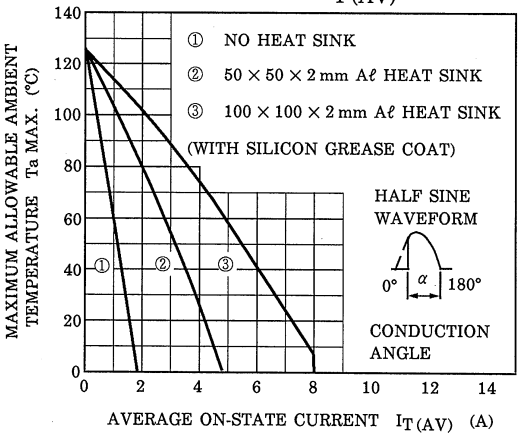
T_c MAX. $- I_{T(AV)}$



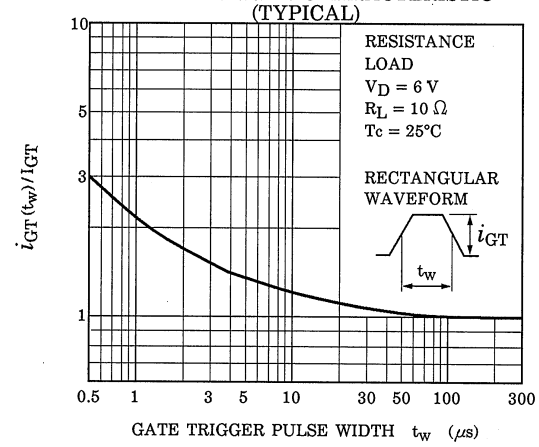
Ta MAX. – $I_{T(AV)}$



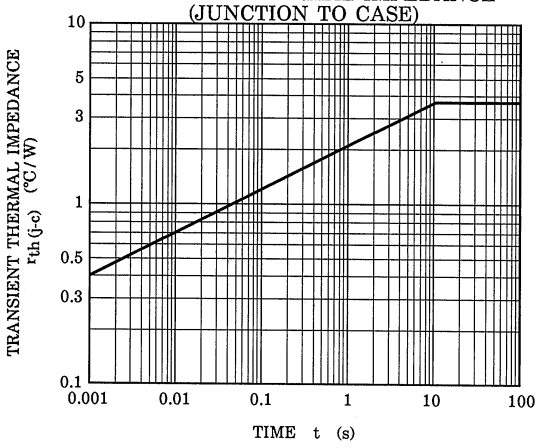
Ta MAX. – $I_{T(AV)}$



PULSE TRIGGER CHARACTERISTIC (TYPICAL)



TRANSIENT THERMAL IMPEDANCE (JUNCTION TO CASE)



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