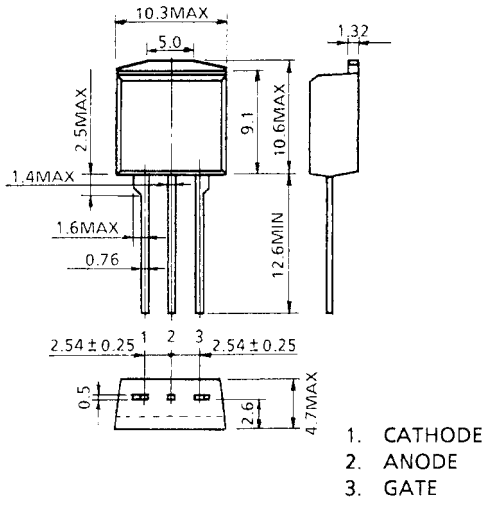
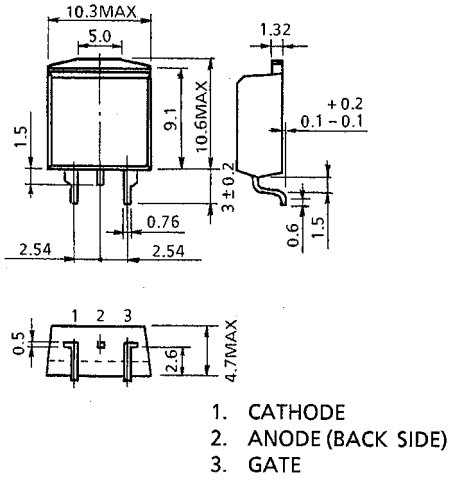
TOSHIBA THYRISTOR SILICON PLANAR TYPE

SF8G48,SF8J48,USF8G48,USF8J48

MEDIUM POWER CONTROL APPLICATIONS

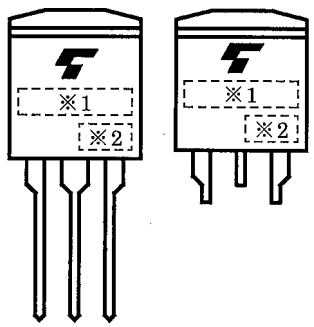
- Repetitive Peak Off-State Voltage : V_{DRM}=400,600V
  Repetitive Peak Reverse Voltage : V_{RRM}=400,600V
- Average On-State Current : $I_{T\ (AV)}$ =8A
- Gate Trigger Current : I_{GT}=10mA Max.

Unit in mm

SF8G48 · SF8J48		USF8G48 · USF8J48	
			
JEDEC	—	JEDEC	—
JEITA	—	JEITA	—
TOSHIBA	13-10J1B	TOSHIBA	13-10J2B

Weight : 1.7g

MARKING



*1	MARK	F8G48	TYPE NAME	SF8G48, USF8G48
		F8J48		SF8J48, USF8J48
*2	Lot Number □□ ← Month (Starting from Alphabet A) ↑ Year (Last Decimal Digit of the Year of Manufacture)			

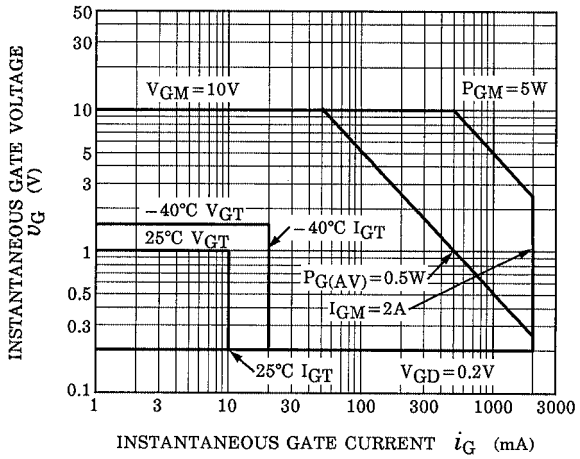
MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Repetitive Peak Off-State Voltage and Repetitive Peak Reverse Voltage	SF8G48	V_{DRM} V_{RRM}	400	V
	USF8G48			
	SF8J48		600	
	USF8J48			
Non-Repetitive Peak Reverse Voltage (Non-Repetitive<5ms T_j=0~125°C	SF8G48	V_{RSM}	500	V
	USF8G48			
	SF8J48		720	
	USF8J48			
Average On-State Current		$I_{T\ (AV)}$	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 (50Hz)	A
			132 (60Hz)	
I^2t Limit Value		I^2t	72	A^2s
Critical Rate of Rise of On-State Curren (Note 1)		di /dt	100	A / μs
Peak Gate Power Dissipation		P_{GM}	5	W
Average Gate Power Dissition		$P_{G\ (AV)}$	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
Strage Temperature Range		T_{stg}	−40~125	°C

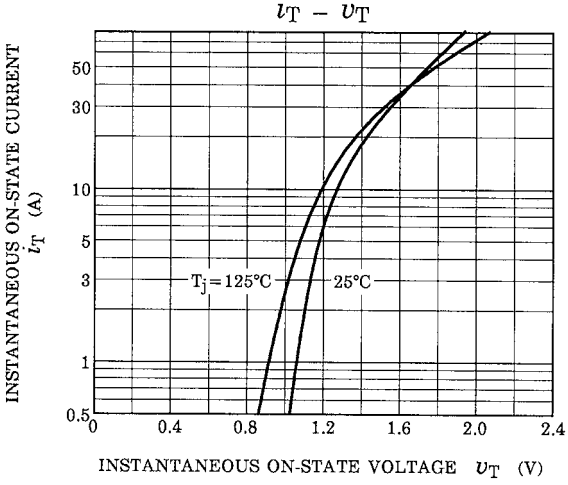
ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Repetitive Peak Off-State Current and Repetitive Peak Reverse	I_{DRM} I_{RRM}	V_{DRM}=V_{RRM}=Rated	—	—	10	μA
Peak On-State Voltage	V_{TM}	I_{TM}=25A	—	—	1.5	V
Gate Trigger Voltage	V_{GT}	V_D=6V, R_L=10Ω	—	—	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=6V, I_{TM}=1A	—	—	40	mA
Latching Current	I_L	V_D=6V, f=50Hz t_{gw}=50μs, i_G=30mA	—	—	50	mA
Thermal Resistance	$R_{th\ (j-c)}$	Junction to Case, DC	—	—	2.8	°C / W

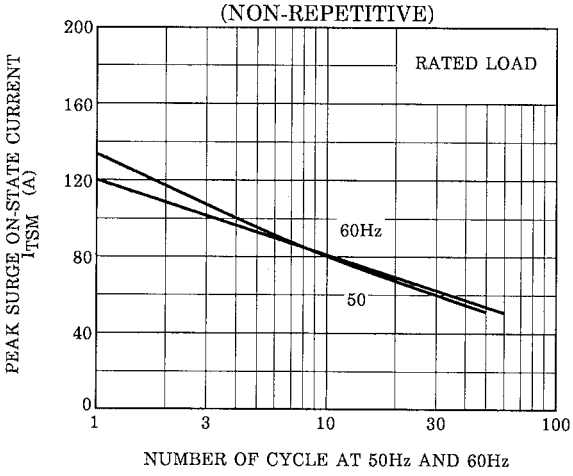
GATE TRIGGER CHARACTERISTIC



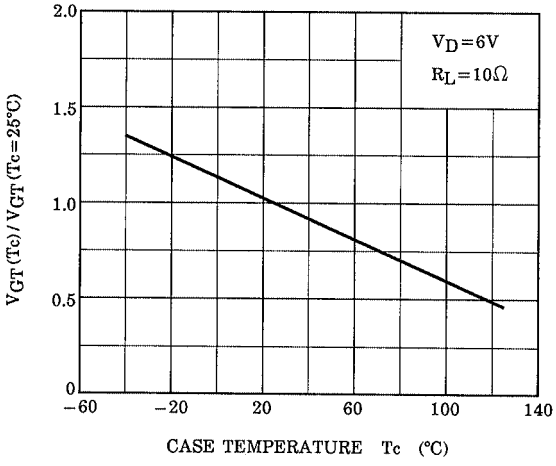
$i_T - v_T$



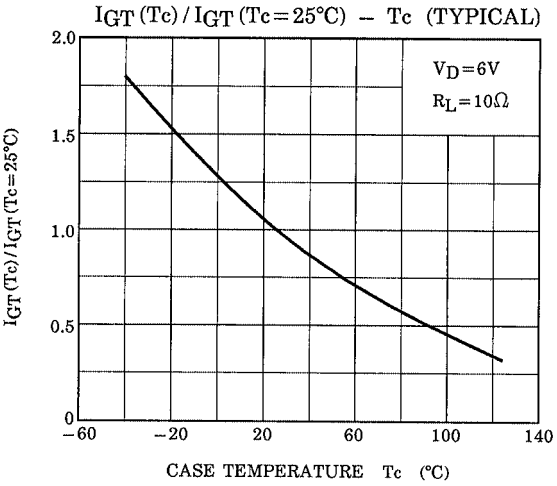
SURGE ON-STATE CURRENT
(NON-REPETITIVE)



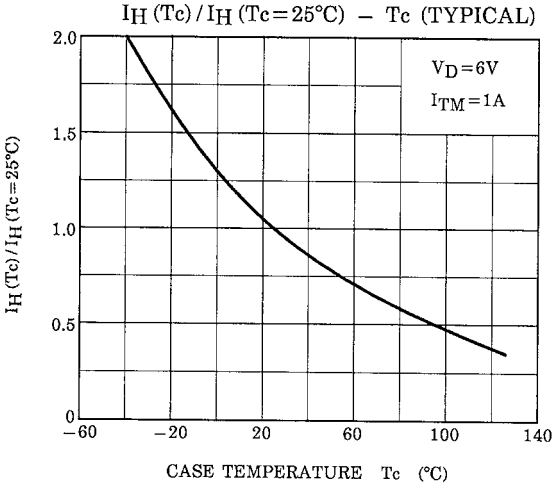
V_{GT} (Tc) / V_{GT} (Tc=25°C) − Tc (TYPICAL)



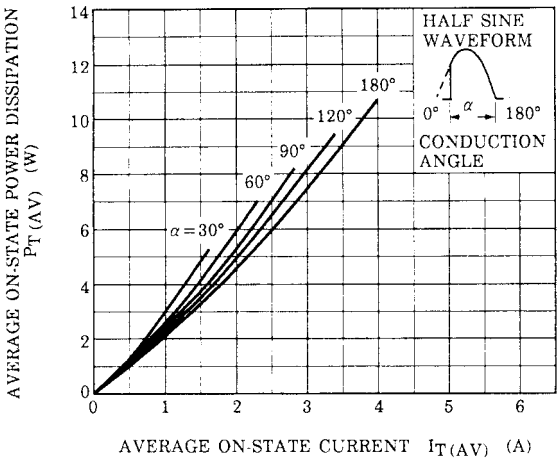
I_{GT} (Tc) / I_{GT} (Tc=25°C) − Tc (TYPICAL)



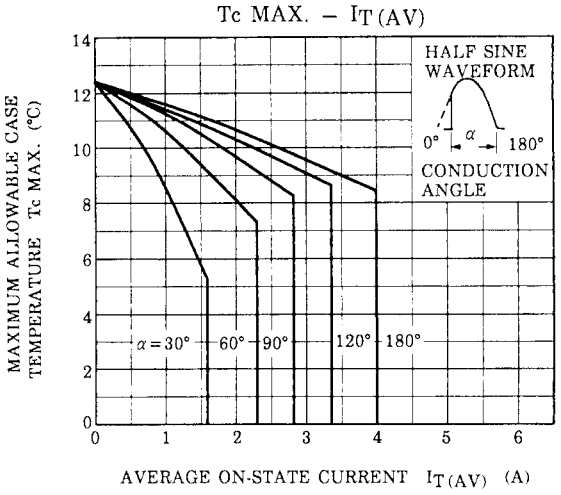
I_H (Tc) / I_H (Tc=25°C) − Tc (TYPICAL)



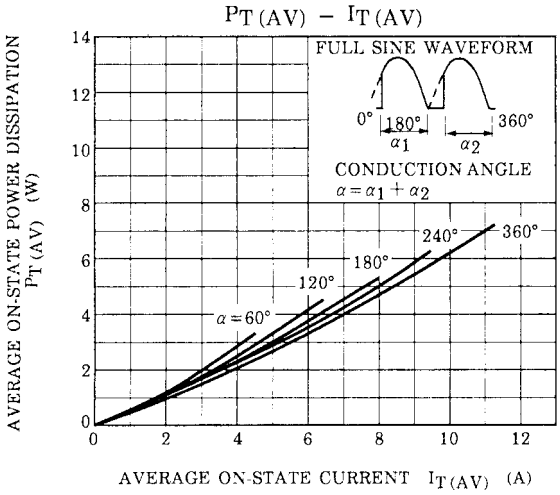
$P_{T(AV)} - I_{T(AV)}$



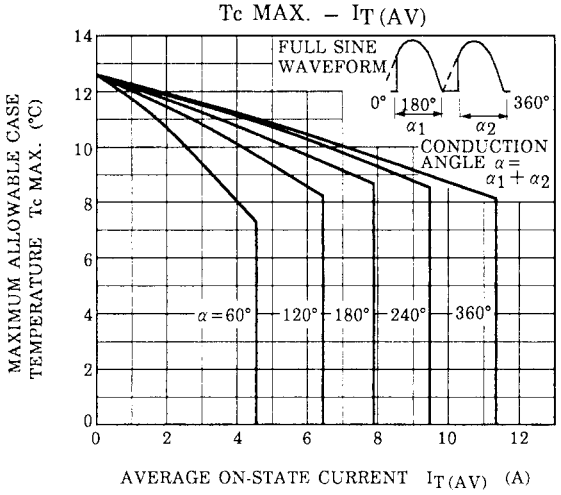
Tc MAX. – $I_{T(AV)}$



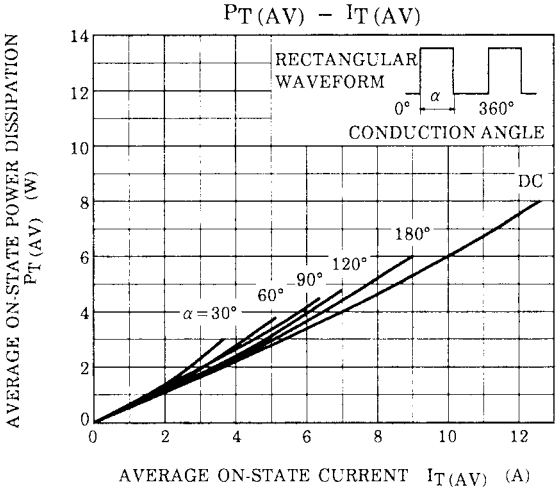
$P_{T(AV)} - I_{T(AV)}$



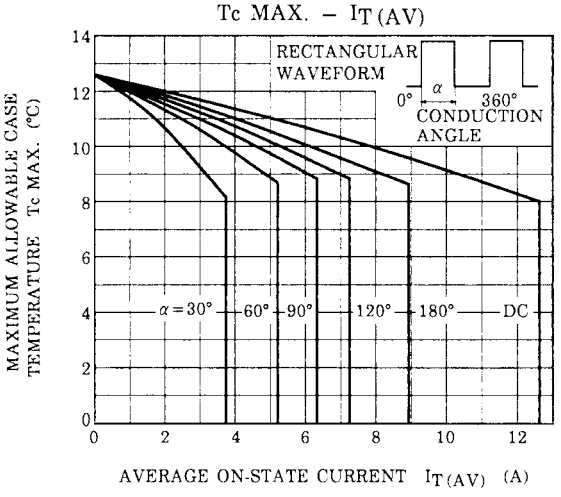
Tc MAX. – $I_{T(AV)}$



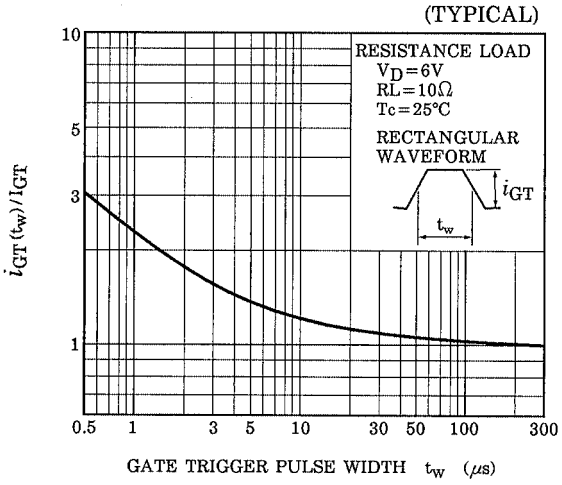
$P_{T(AV)} - I_{T(AV)}$



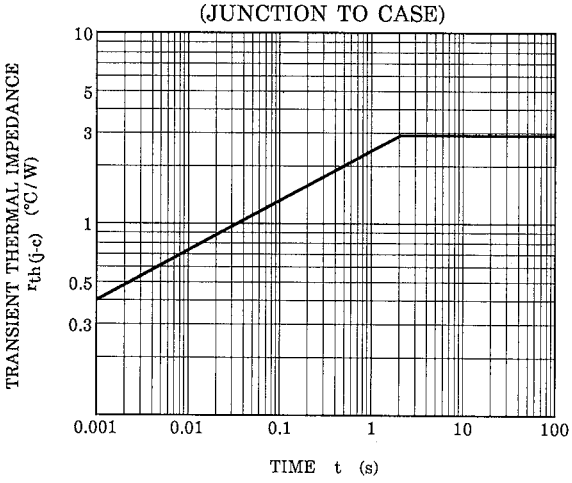
Tc MAX. – $I_{T(AV)}$



PULSE TRIGGER CHARACTERISTIC
(TYPICAL)



TRANSIENT THERMAL IMPEDANCE
(JUNCTION TO CASE)



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