

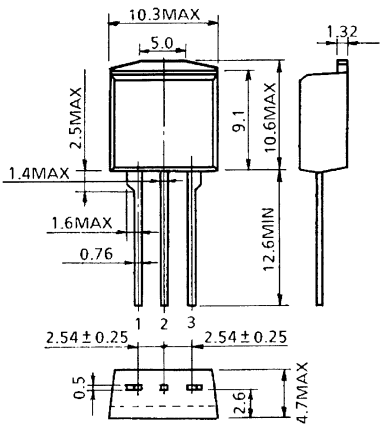
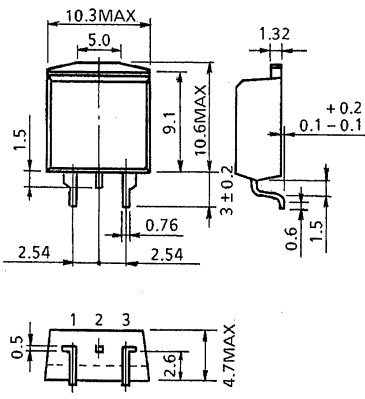
TOSHIBA Thyristor Silicon Planar Type

SF10G48,SF10J48,USF10G48,USF10J48

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 : $I_T (AV) = 10A$
- Gate Trigger Current : $I_{GT} = 10mA \text{ MAX.}$

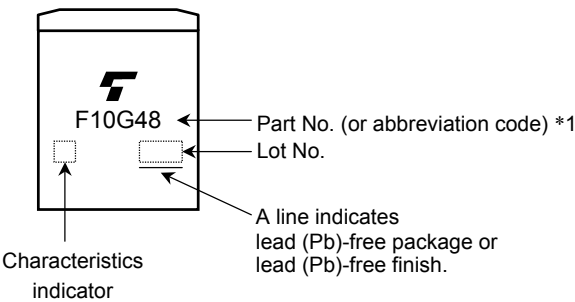
Unit: mm

SF10G48-SF10J48	USF10G48-USF10J48
 <p>1. CATHODE 2. ANODE 3. GATE</p>	 <p>1. CATHODE 2. ANODE (BACK SIDE) 3. GATE</p>
JEDEC —	JEDEC —
JEITA —	JEITA —
TOSHIBA 13-10J1B	TOSHIBA 13-10J2B

Weight: 1.5g

Weight: 1.4g

MARKING



製品名（または略号）	製品名
F10G48	SF10G48
	USF10G48
F10J48	SF10J48
	USF10J48

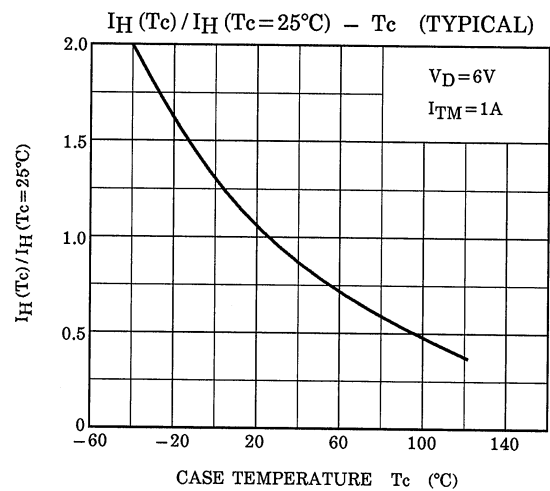
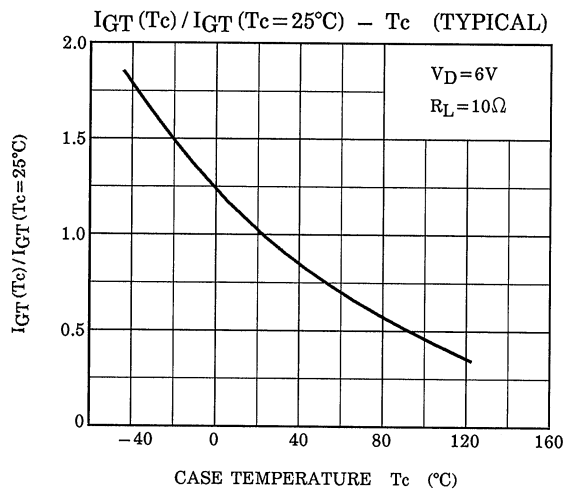
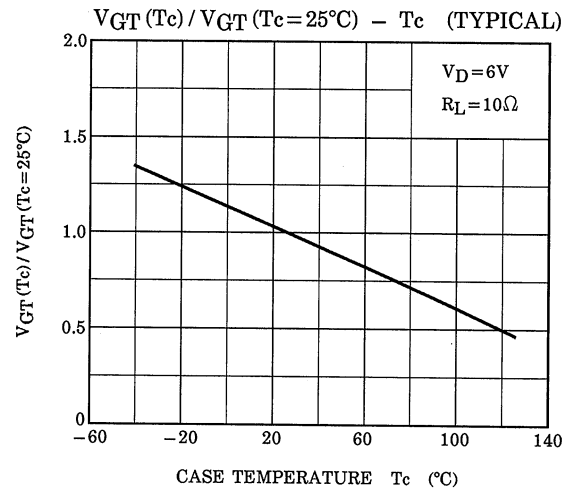
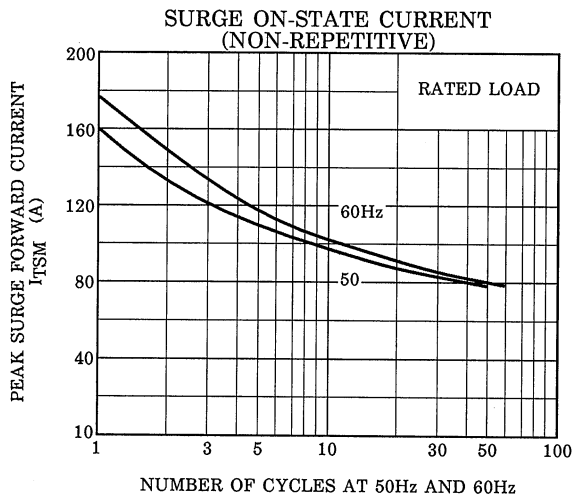
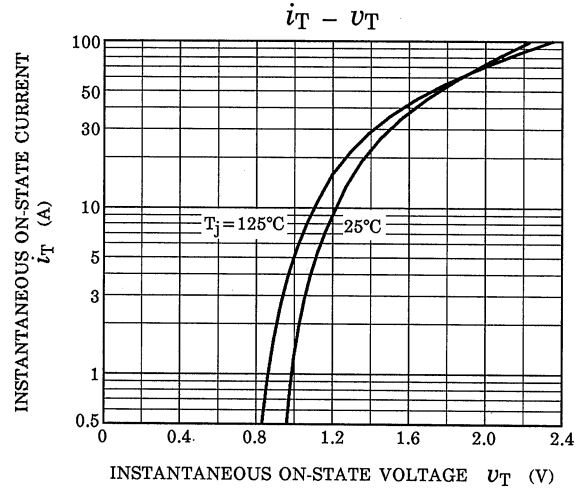
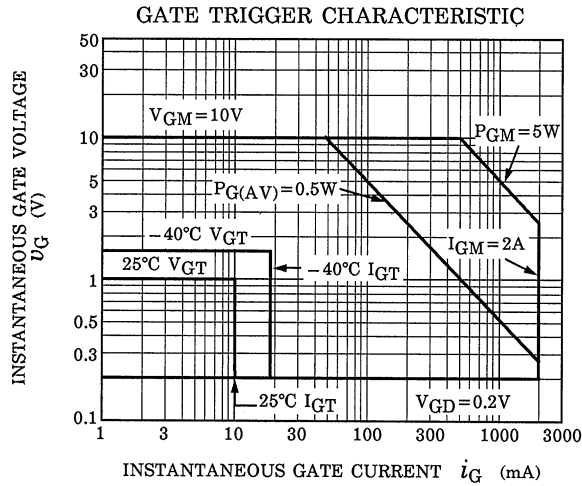
MAXIMUM RATINGS

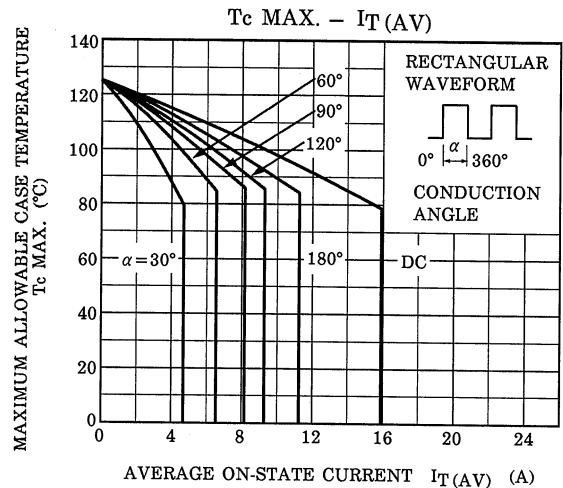
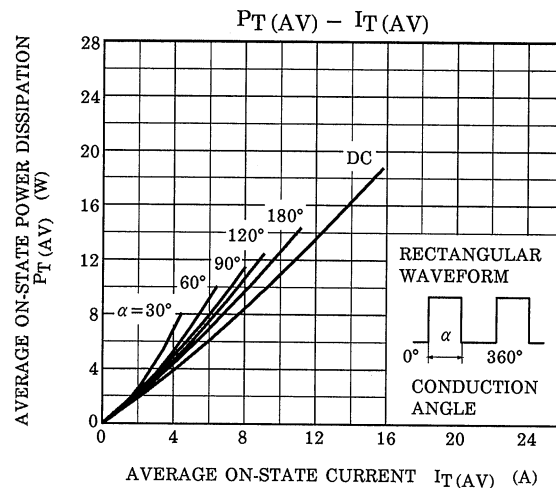
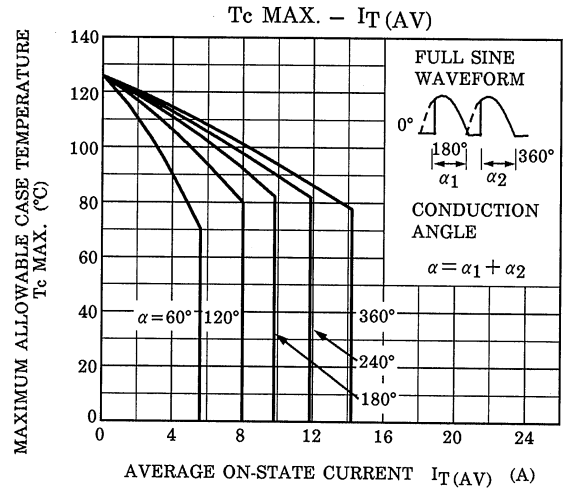
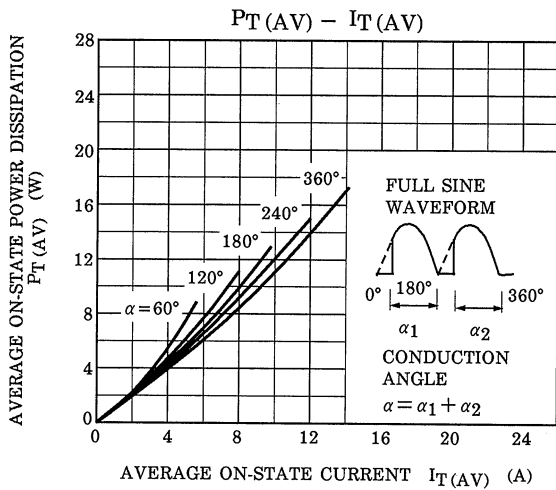
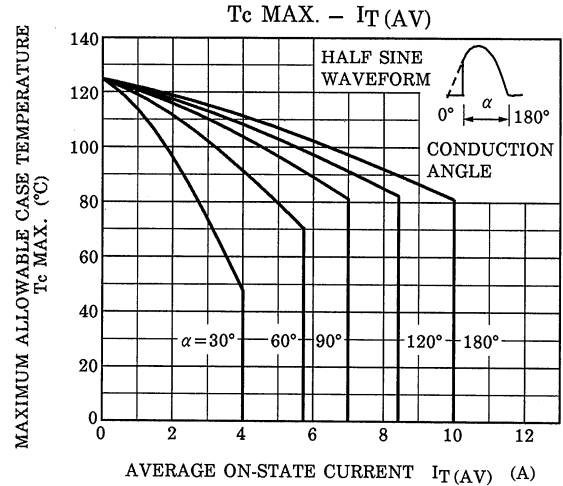
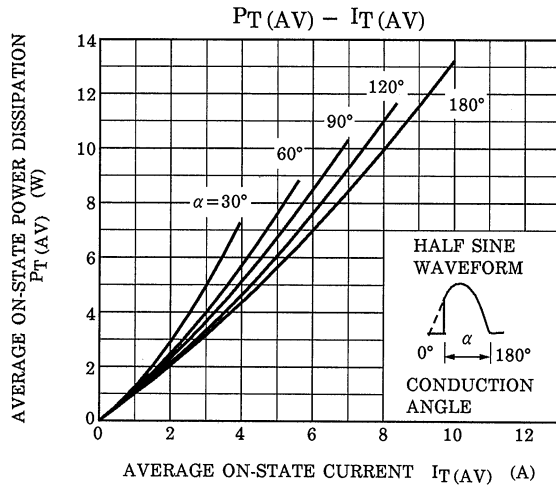
Characteristic	Symbol	Rating	Unit
Repetitive peak off-state voltage and repetitive peak reverse voltage	SF10G48 USF10G48	400	V
	SF10J48 USF10J48	600	
Non-repetitive peak reverse voltage (non-repetitive <5ms, $T_j = 0 \sim 125^\circ\text{C}$)	SF10G48 USF10G48	500	V
	SF10J48 USF10J48	720	
Average on-state current	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	$\text{A} / \mu\text{s}$
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	$^\circ\text{C}$

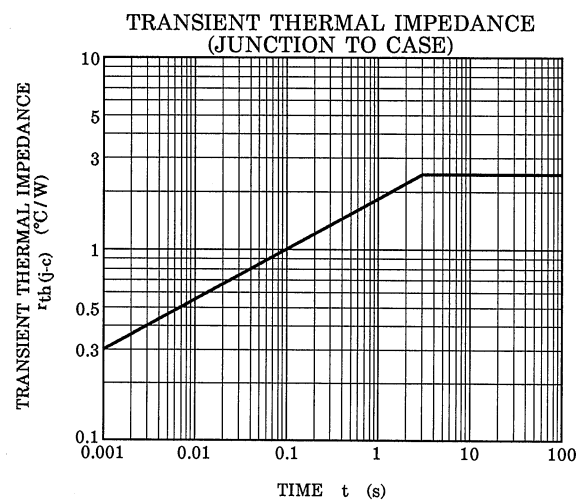
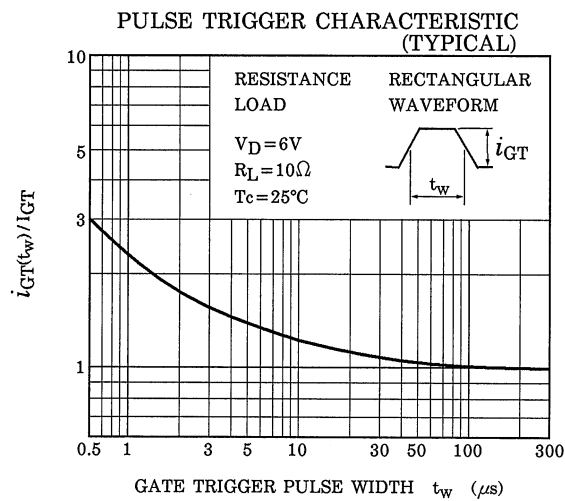
Note 1: $V_{DRM} = 0.5 \times \text{Rated}$, $I_{TM} \leq 30\text{A}$, $t_{gw} \geq 10\mu\text{s}$, $t_{gr} \leq 250\text{ns}$, $i_{gp} = I_{GT} \times 2.0$

Electrical Characteristics ($T_a = 25^\circ\text{C}$)

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	—	$\text{V} / \mu\text{s}$
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, DC	—	—	2.5	$^\circ\text{C} / \text{W}$







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20070701-EN

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