

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 : $I_{GT} = 10mA \text{ MAX.}$

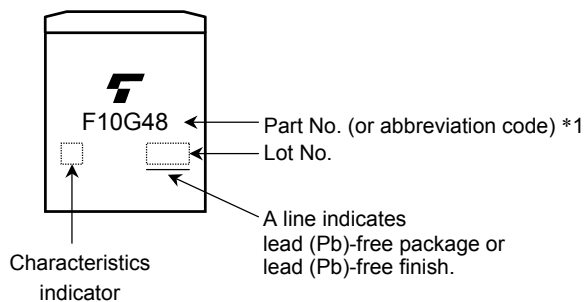
Unit: mm

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

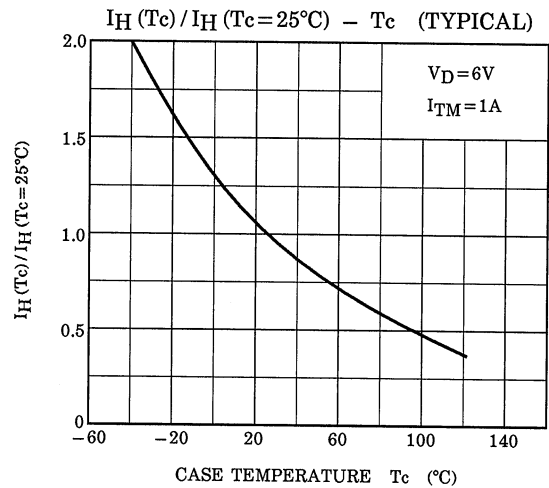
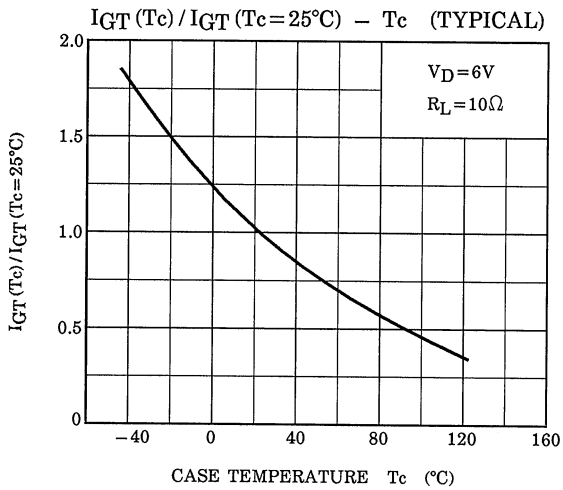
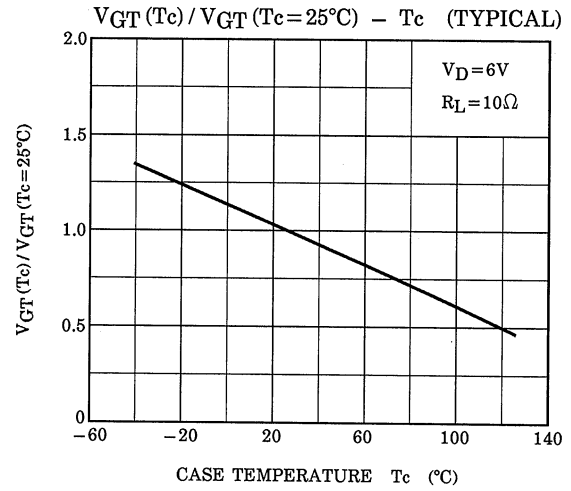
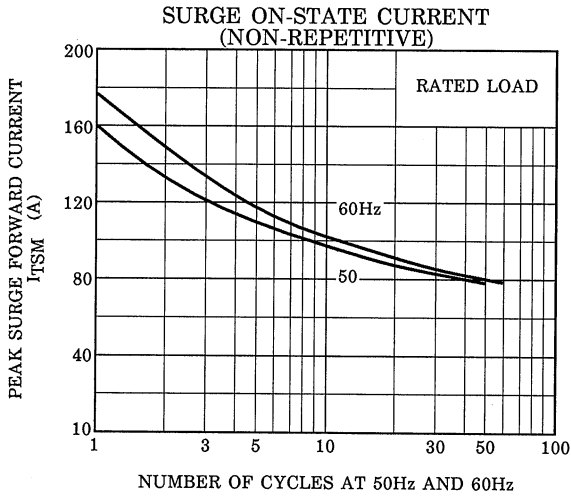
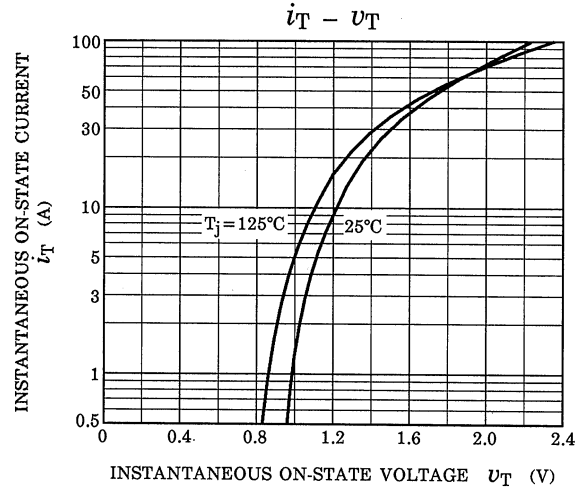
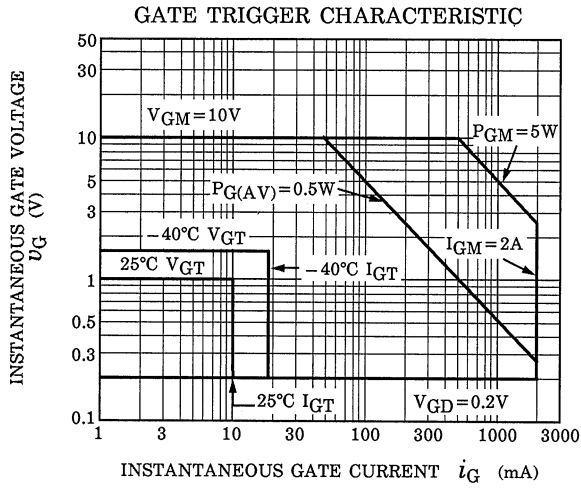
MAXIMUM RATINGS

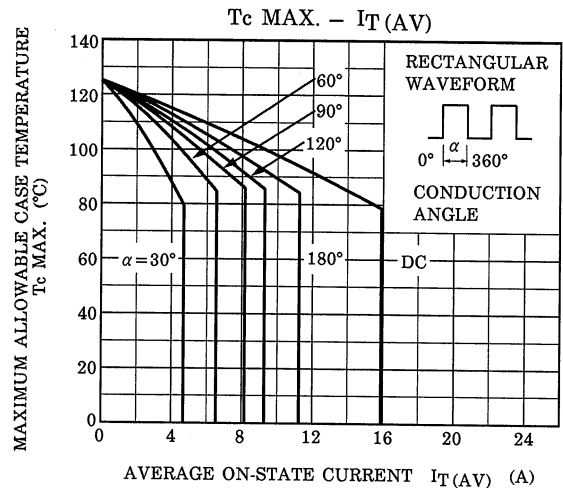
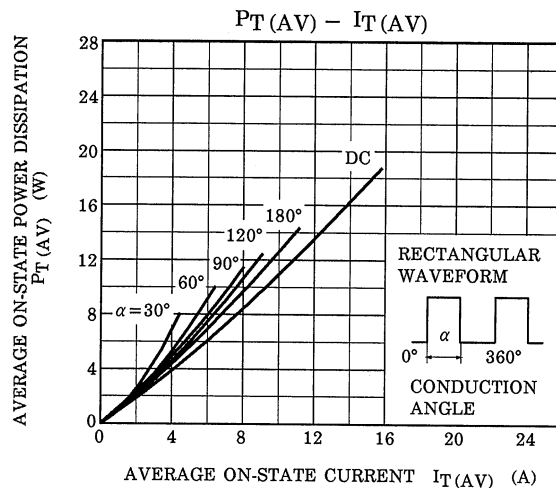
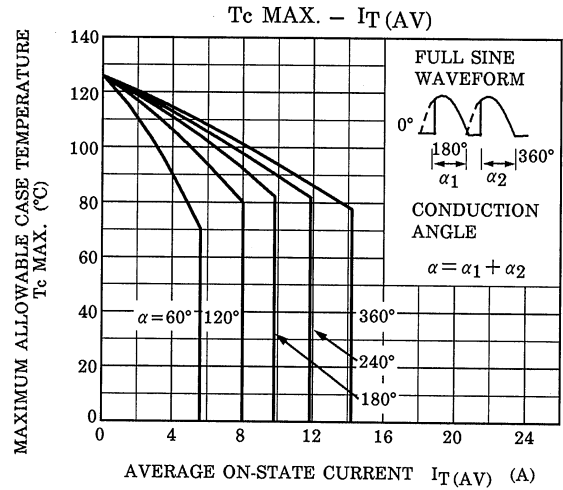
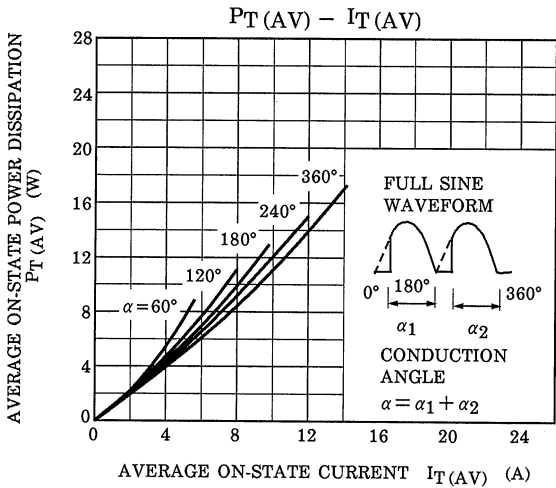
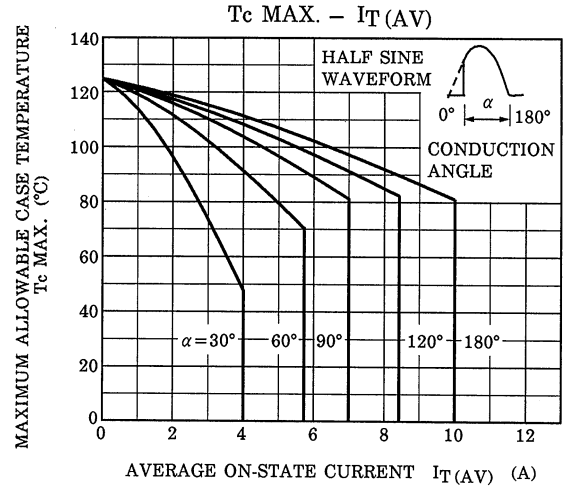
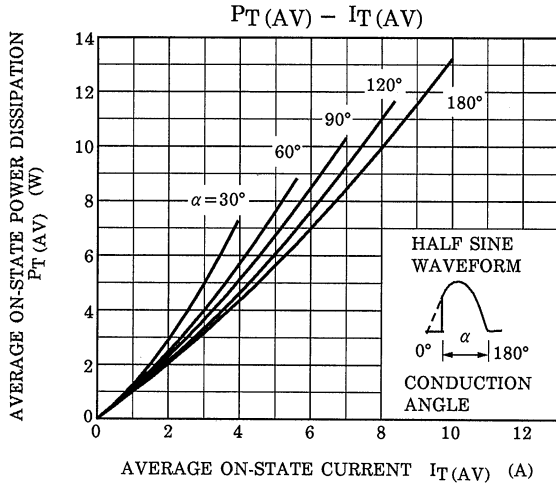
Characteristic	Symbol	Rating	Unit
Repetitive peak off-state voltage and repetitive peak reverse voltage	SF10G48 USF10G48	400	V
	SF10J48 USF10J48	600	
Non-repetitive peak reverse voltage (non-repetitive <5ms, T _j = 0~125°C)	SF10G48 USF10G48	500	V
	SF10J48 USF10J48	720	
Average on-state current	I _{T (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 ² t limit value	I ² t	125	A ² s
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

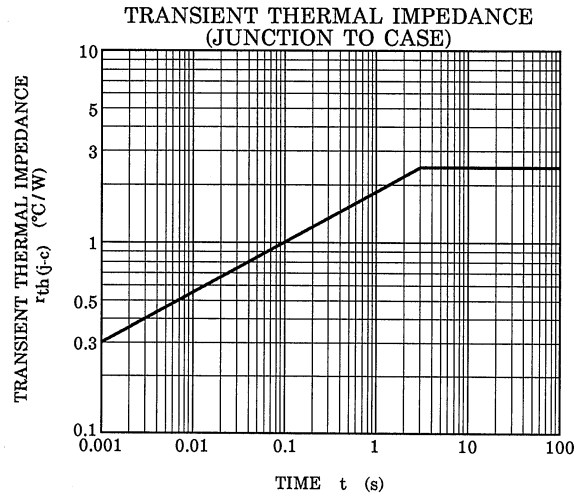
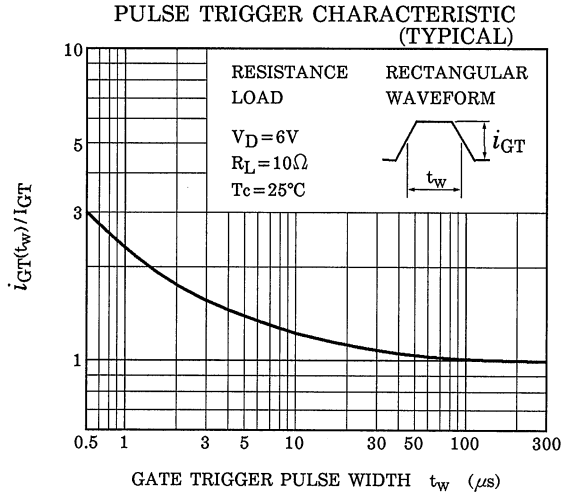
Note 1: V_{DRM} = 0.5 × Rated, I_{TM} ≤ 30A, t_{gw} ≥ 10μs, t_{gr} ≤ 250ns, i_{gp} = I_{GT} × 2.0

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 _{RDM}	V _{DRM} = V _{RDM} = Rated	—	—	10	μA
Peak on-state voltage	V _{TM}	I _{TM} = 30A	—	—	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, T _c = 125°C	0.2	—	—	V
Critical rate of rise of off-state voltage	dv / dt	V _{DRM} = Rated, T _c = 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	—	—	2.5	°C / W







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