

TOSHIBA THYRISTOR SILICON PLANAR TYPE

SF3GZ47, SF3JZ47

MEDIUM POWER CONTROL APPLICATIONS

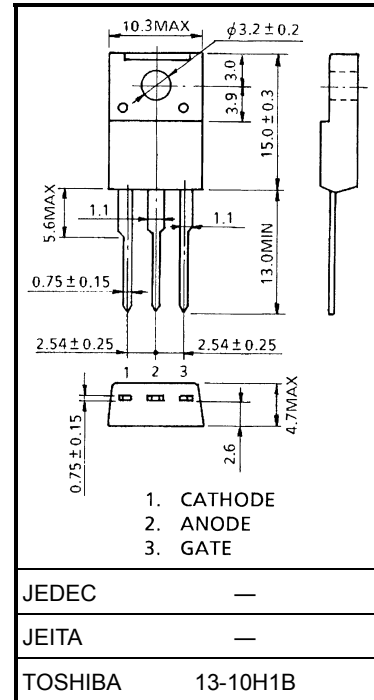
Unit: mm

- Repetitive Peak Off-State Voltage: $V_{DRM} = 400V, 600V$
Repetitive Peak Reverse Voltage: $V_{RRM} = 400V, 600V$
- Average On-State Current: $I_T (AV) = 3A$
- Isolation Voltage: $V_{Isol} = 1500V$ AC

MAXIMUM RATINGS

CHARACTERISTIC	SYMBOL	RATING	UNIT
Repetitive Peak Off-State Voltage and Repetitive Peak Reverse Voltage	SF3GZ47	V_{DRM}	400
	SF3JZ47	V_{RRM}	600
Non-Repetitive Peak Reverse Voltage (Non-Repetitive < 5ms, $T_j = 0 \sim 125^\circ C$)	SF3GZ47	V_{RSM}	500
	SF3JZ47	V_{RSM}	720
Average On-State Current (Half Sine Waveform $T_c = 98^\circ C$)	$I_T (AV)$	3	A
R.M.S On-State Current	$I_T (RMS)$	4.7	A
Peak One Cycle Surge On-State Current (Non-Repetitive)	I_{TSM}	50 (50Hz)	A
		55 (60Hz)	
$I^2 t$ Limit Value	$I^2 t$	12.5	$A^2 s$
Critical Rate of Rise of On-State Current (Note 1)	di / dt	100	$A / \mu s$
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	$^\circ C$
Storage Temperature Range	T_{stg}	-40~150	$^\circ C$
Isolation Voltage (AC, $t = 1min.$)	V_{Isol}	1500	V

Note 1: di / dt Test Condition, $V_{DRM} = 0.5 \times \text{Rated}$, $I_{TM} \leq 12A$, $t_{gw} \geq 10\mu s$,
 $t_{gr} \leq 250ns$, $i_{gp} = I_{GT} \times 2.0$

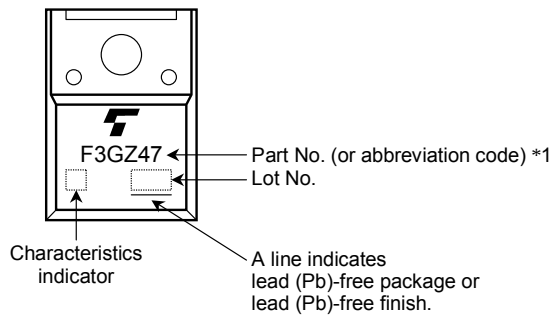


Weight: 1.7 g (typ.)

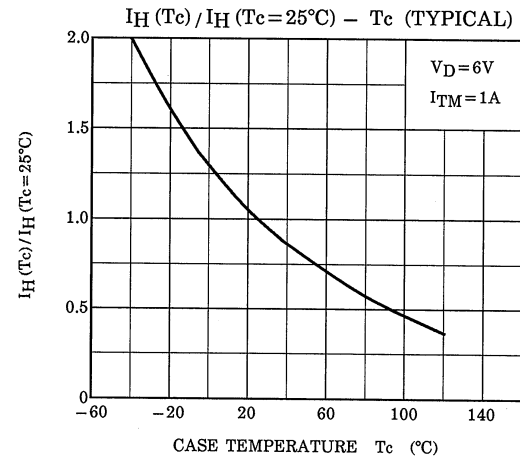
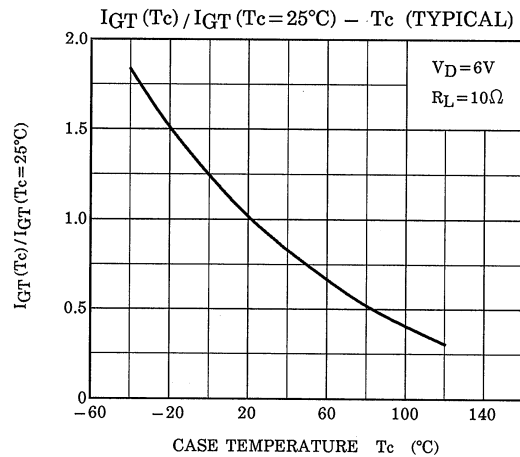
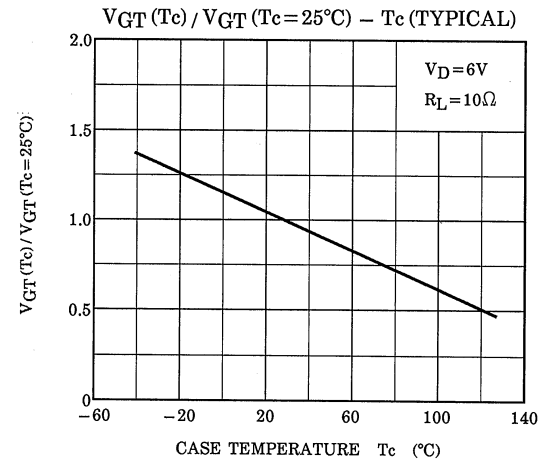
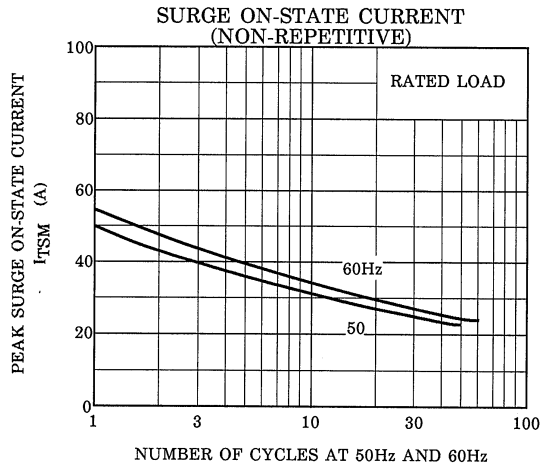
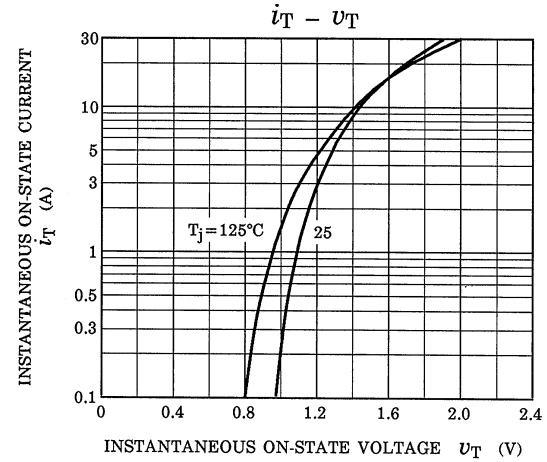
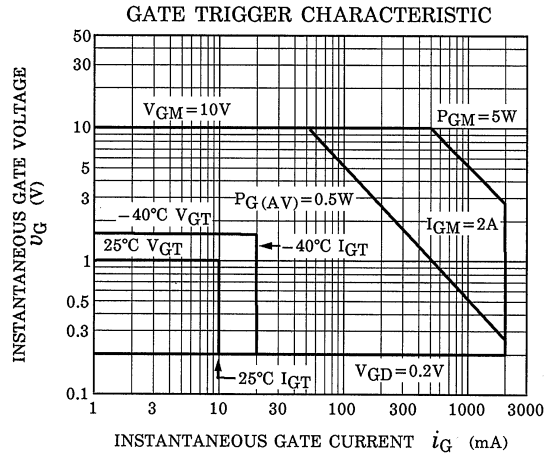
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

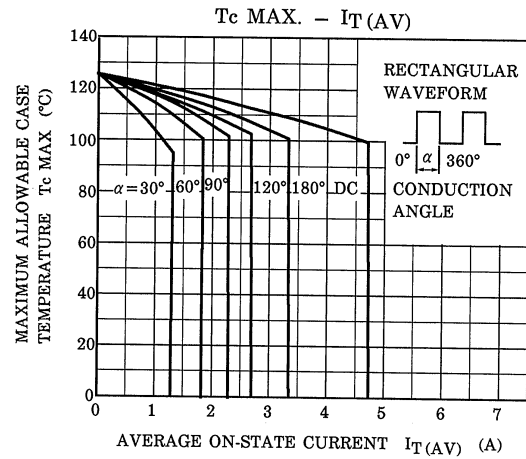
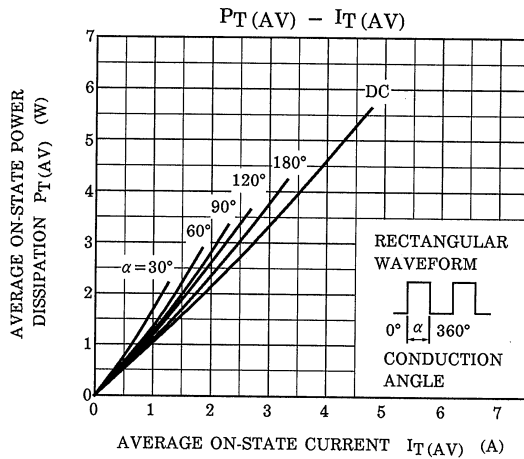
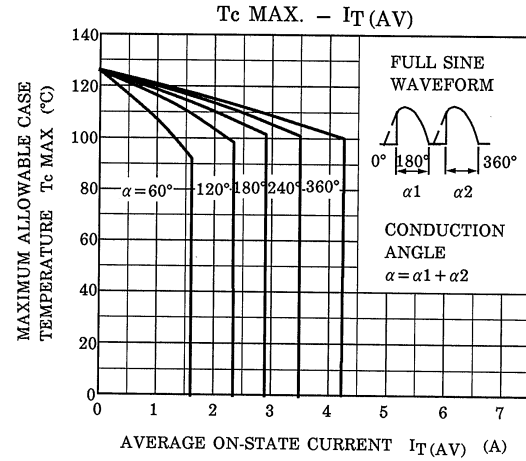
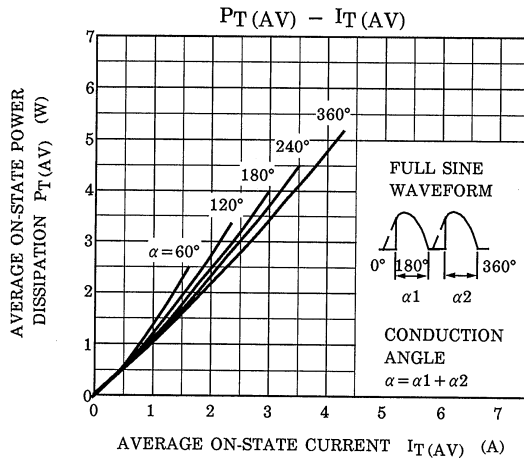
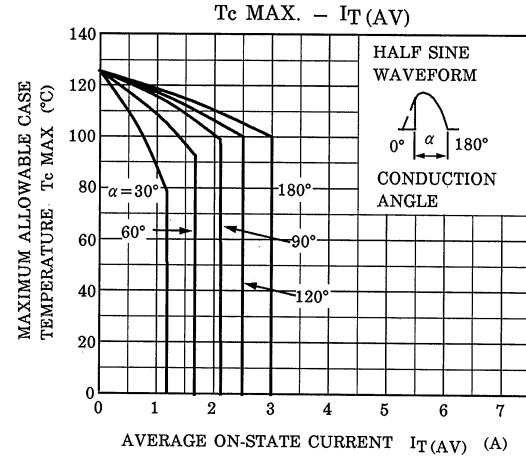
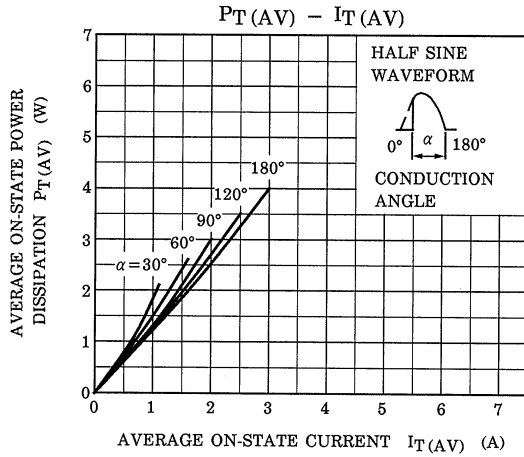
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN	TYP.	MAX	UNIT
Repetitive Peak Off-State Current and Repetitive Peak Reverse Current	I_{DRM} I_{RRM}	$V_{DRM} = V_{RRM} = \text{Rated}$	—	—	10	μA
Peak On-State Voltage	V_{TM}	$I_{TM} = 12\text{A}$	—	—	1.5	V
Gate Trigger Voltage	V_{GT}	$V_D = 6\text{V}$, $R_L = 10\Omega$	—	—	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	—	—	4.5	$^\circ\text{C} / \text{W}$

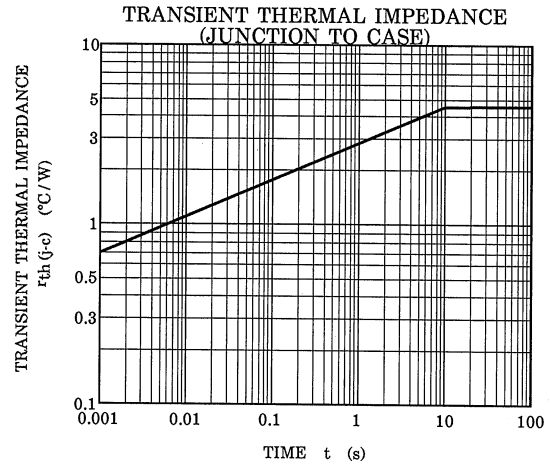
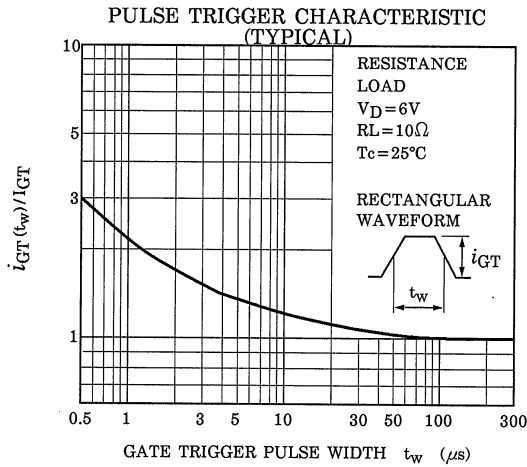
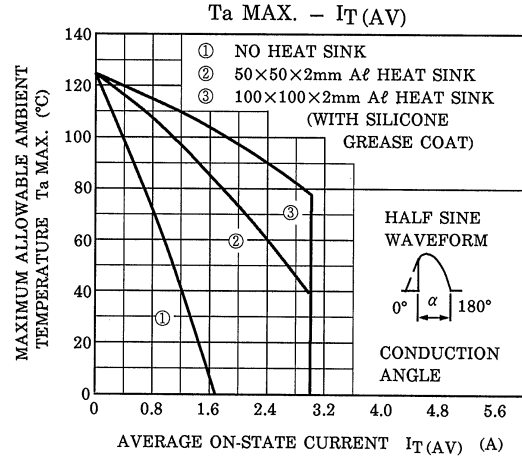
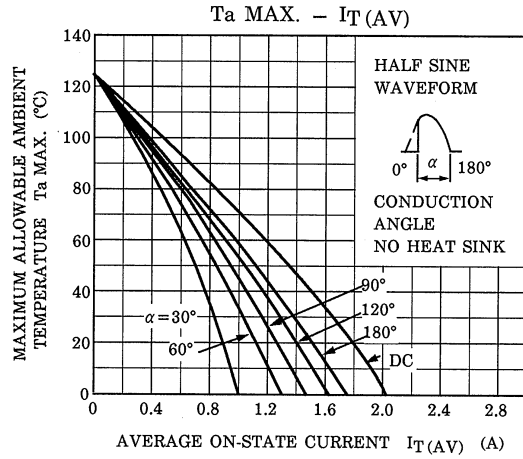
MARKING



*1	Part No. (or abbreviation code)	Part No.
	F3GZ47	SF3GZ47
	F3JZ47	SF3JZ47







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