

TOSHIBA THYRISITOR SILICON PLANAR TYPE

**SF5GZ47, SF5JZ47**

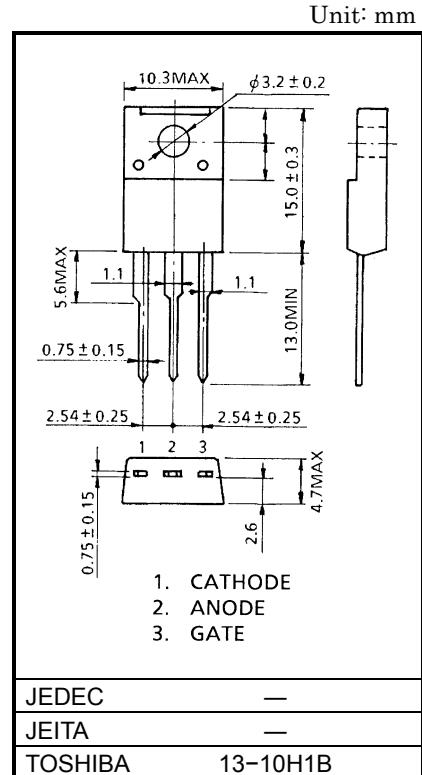
## MEDIUM POWER CONTROL APPLICATIONS

- Repetitive Peak off-State Voltage :  $V_{DRM} = 400, 600V$
- Repetitive Peak Reverse Voltage :  $V_{RRM} = 400, 600V$
- Average On-State Current :  $I_T (AV) = 5A$
- Isolation Voltage :  $V_{Isol} = 1500V AC$

**MAXIMUM RATINGS**

CHARACTERISTIC		SYMBOL	RATING	UNIT
Repetitive Peak Off-State Voltage and Repetitive Peak Reverse Voltage	SF5GZ47	$V_{DRM}$ $V_{RRM}$	400	V
	SF5JZ47		600	
Non-Repetitive Peak Reverse Voltage (Non-Repetitive < 5ms, $T_j = 0 \sim 125^\circ C$ )	SF5GZ47	$V_{RSM}$	500	V
	SF5JZ47		720	
Average On-State Current (Half Sine Waveform $T_c = 85^\circ C$ )	$I_T (AV)$		5	A
R.M.S. On-State Current	$I_T (RMS)$		7.8	A
Peak One Cycle Surge On-State Current (Non-Repetitive)	$I_{TSM}$		80 (50Hz)	A
			88 (60Hz)	
$I^2 t$ Limit Value	$I^2 t$		32	$A^2 s$
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 ~ 125	$^\circ C$
Isolation Voltage (AC, $t = 1\text{min.}$ )	$V_{Isol}$		1500	V

Note 1:  $di / dt$  test condition,  $V_{DRM} = 0.5 \times$  Rated,  $I_{TM} \leq 15A$ ,  $t_{gw} \geq 10\mu s$ ,  
 $t_{gr} \leq 250\text{ns}$ ,  $i_{gp} = I_{GT} \times 2.0$

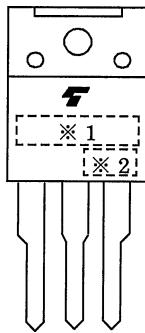


Weight: 1.7g

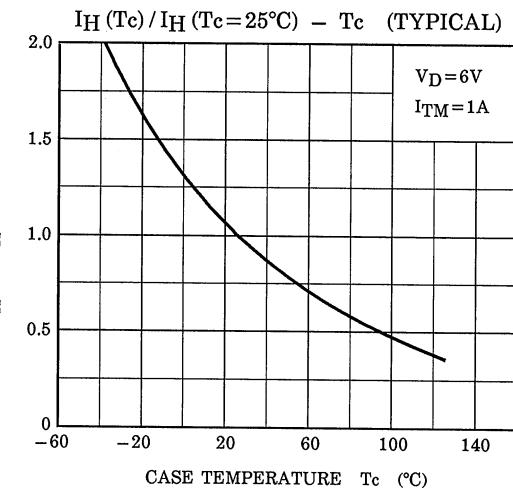
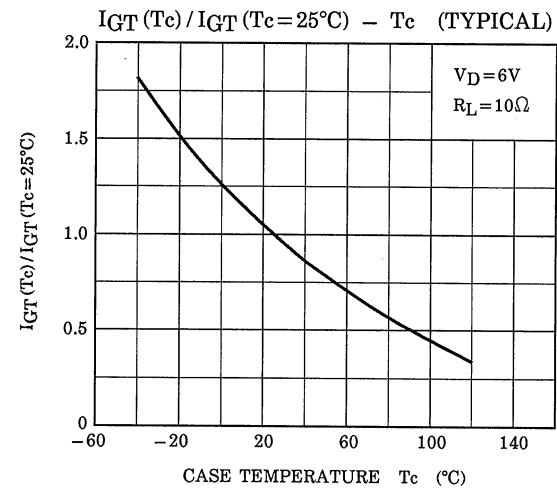
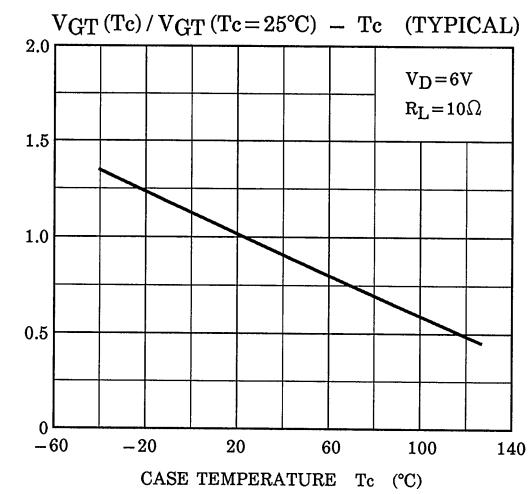
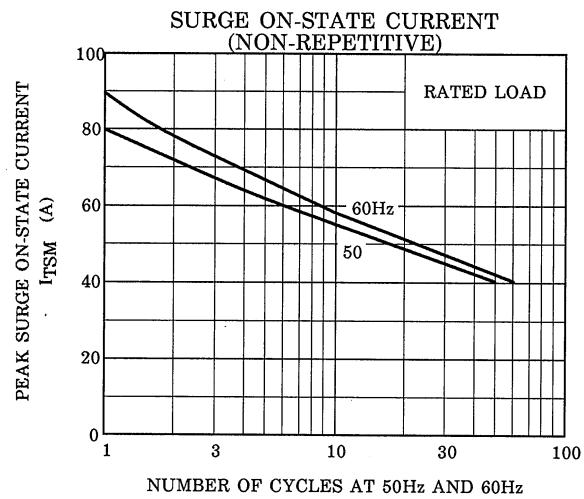
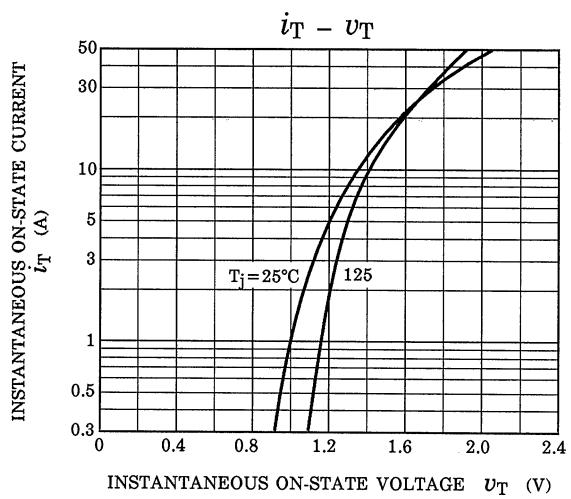
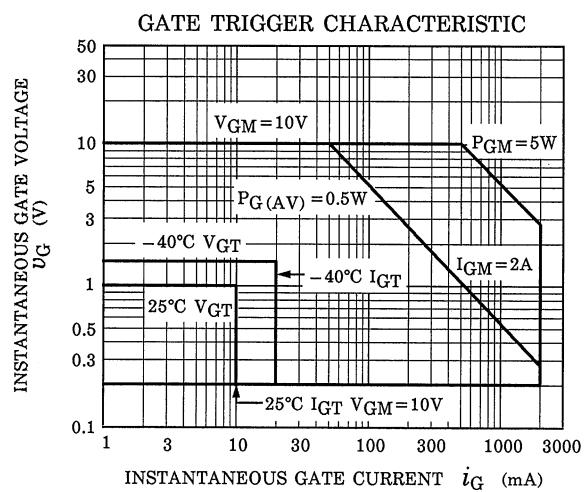
## ELECTRICAL CHARACTERISTICS (Ta = 25°C)

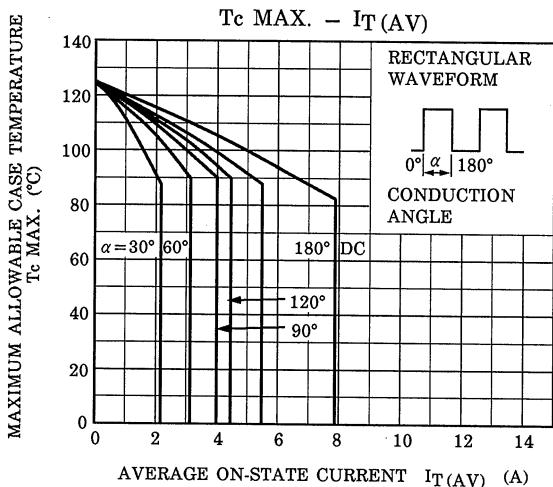
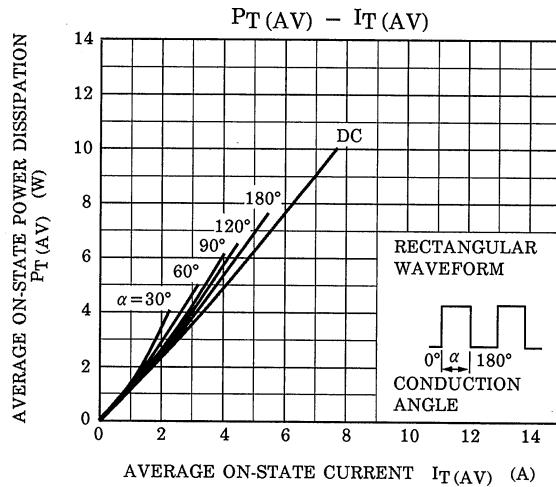
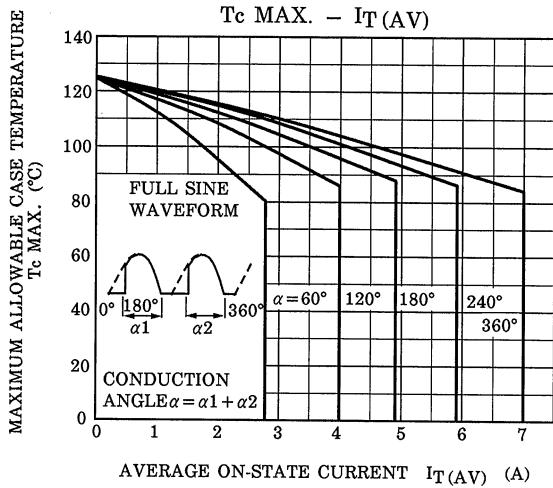
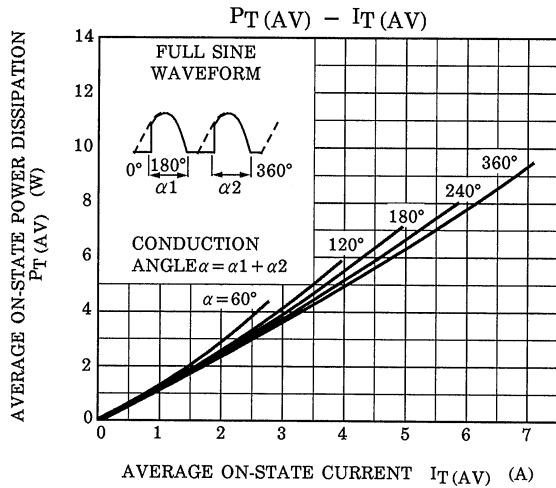
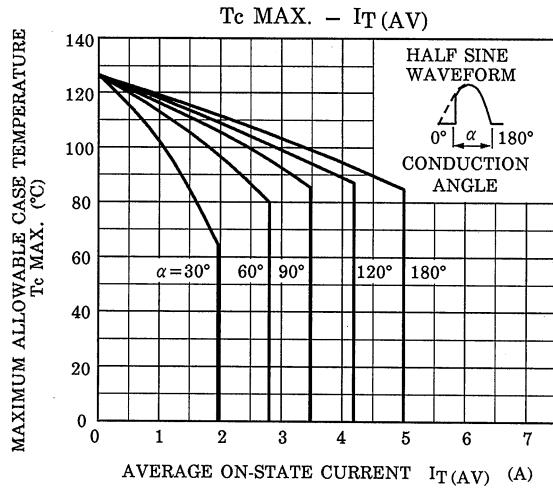
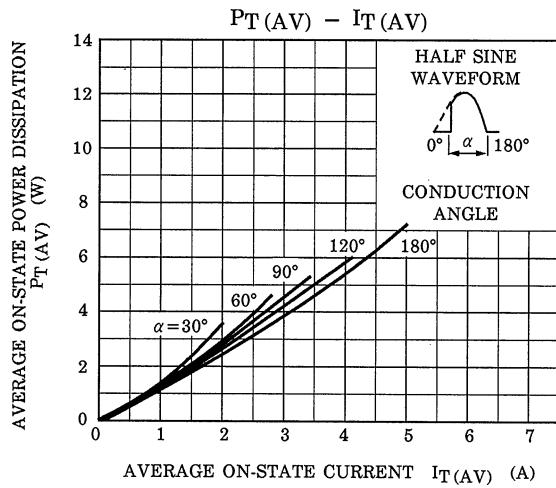
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN	TYP.	MAX	UNIT
Repetitive Peak Off-State Current and Repetitive Peak Reverse Current	$I_{DRM}$ $I_{RRM}$	$V_{DRM} = V_{RRM}$ = Rated	—	—	10	μA
Peak On-State Voltage	$V_{TM}$	$I_{TM} = 15A$	—	—	1.5	V
Gate Trigger Voltage	$V_{GT}$	$V_D = 6V$ , $R_L = 10\Omega$	—	—	1.0	V
Gate Trigger Current	$I_{GT}$		—	—	10	mA
Gate Non-Trigger Voltage	$V_{GD}$	$V_D$ = Rated $\times 2/3$ , $T_c = 125^\circ C$	0.2	—	—	V
Critical Rate of Rise of Off-State Voltage	$dv/dt$	$V_{DRM}$ = Rated, $T_c = 125^\circ C$ Exponential Rise	—	50	—	V / μs
Holding Current	$I_H$	$V_D = 6V$ , $I_{TM} = 1A$	—	—	40	mA
Latching Current	$I_L$	$V_D = 6V$ , $f = 50Hz$ , $t_{gw} = 50\mu s$ $i_G = 30mA$	—	—	50	mA
Thermal Resistance	$R_{th(j-c)}$	Junction to Case	—	—	4.2	°C / W

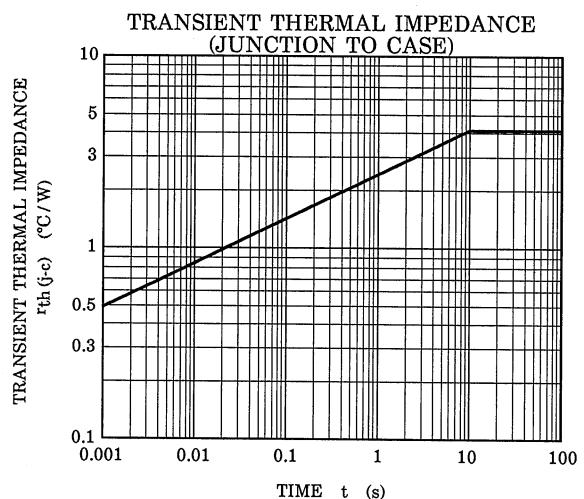
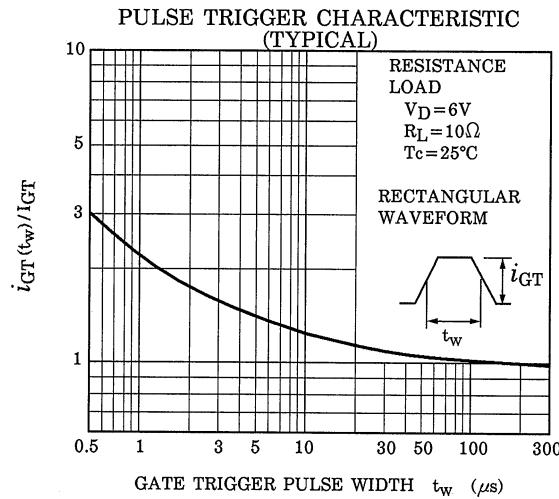
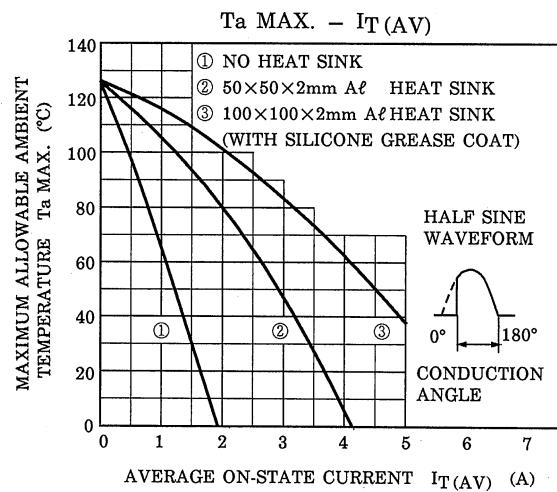
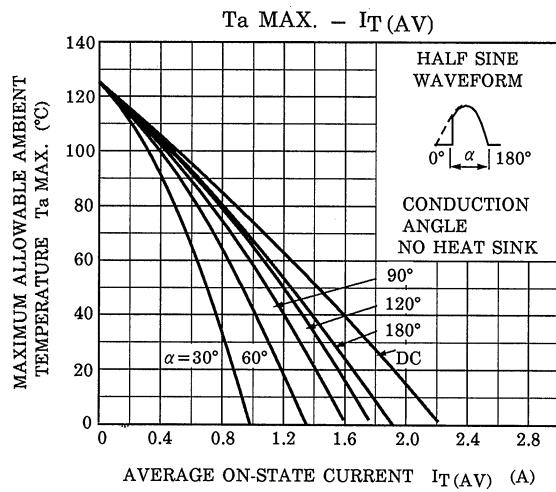
## MARKING



*1	TYPE	F5GZ47	TYPE NAME	SF5GZ47
		F5JZ47		SF5JZ47
*2	Lot Number 		Example 8A:January 1998 8B:February 1998 8L:December 1998	







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