

TOSHIBA THYRISITOR SILICON PLANAR TYPE

# SF5GZ47, SF5JZ47

## MEDIUM POWER CONTROL APPLICATIONS

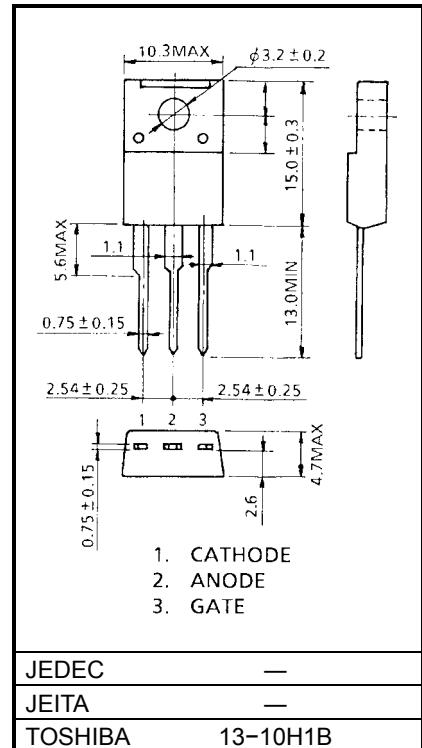
- Repetitive Peak off-State Voltage :  $V_{DRM} = 400, 600V$   
 Repetitive Peak Reverse Voltage :  $V_{RRM} = 400, 600V$
- Average On-State Current :  $I_T (AV) = 5A$
- Isolation Voltage :  $V_{Isol} = 1500V AC$

## 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)	
$I^2t$ Limit Value		$I^2t$	32	$A^2s$
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, $t = 1min.$ )		$V_{Isol}$	1500	V

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

Unit: mm

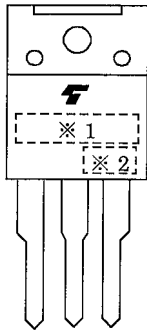


Weight: 1.7g

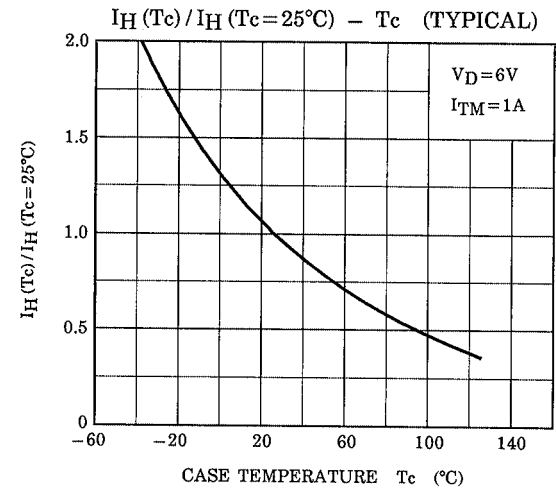
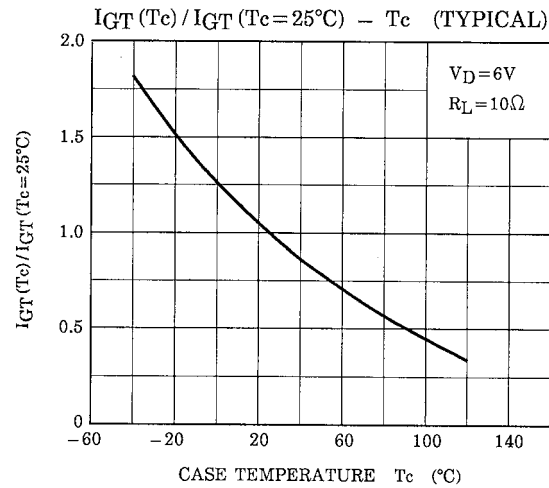
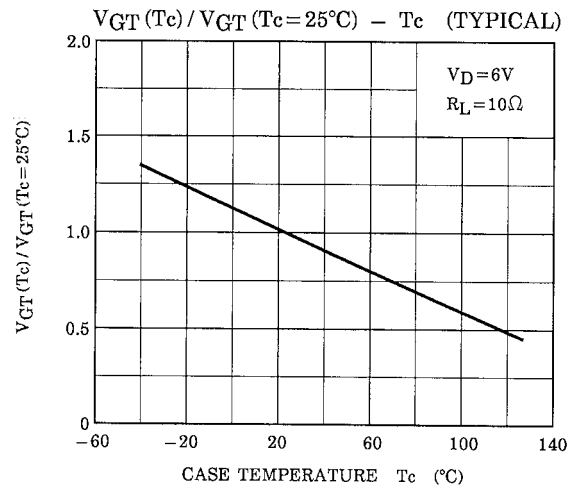
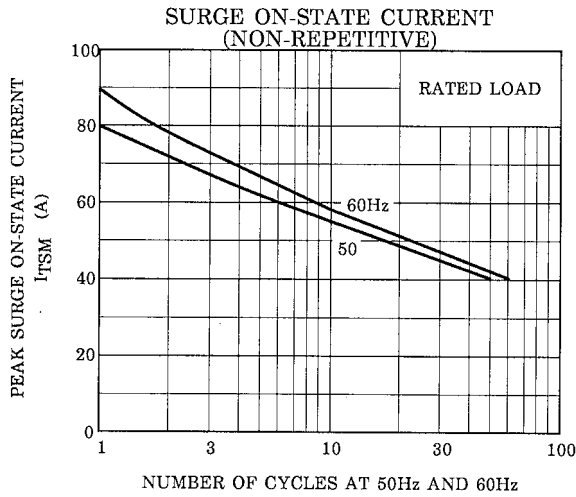
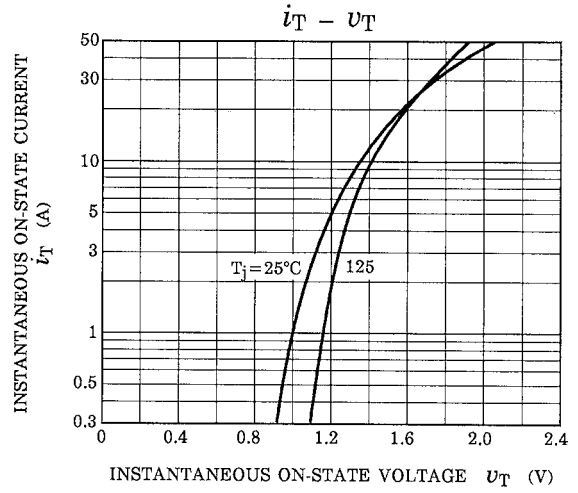
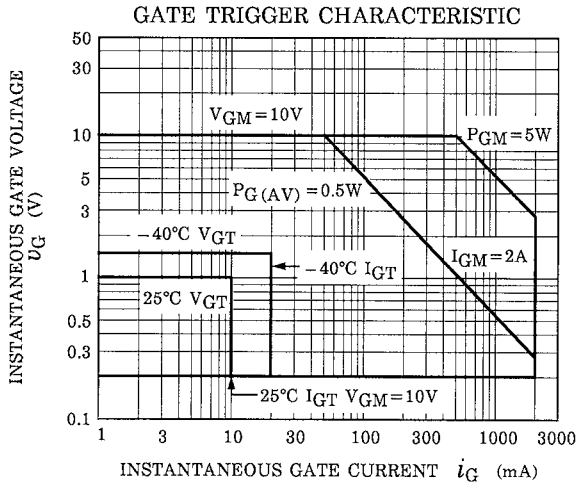
## ELECTRICAL CHARACTERISTICS (Ta = 25°C)

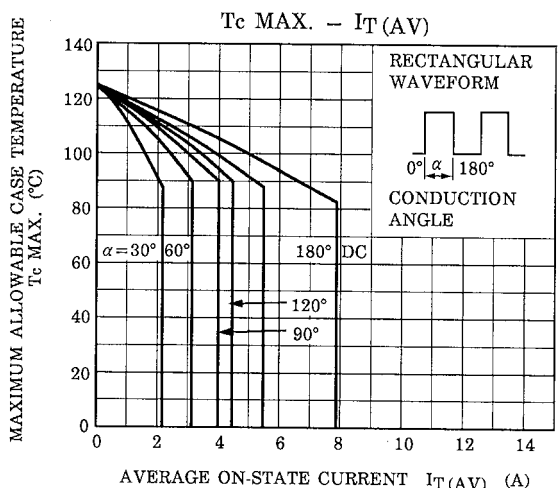
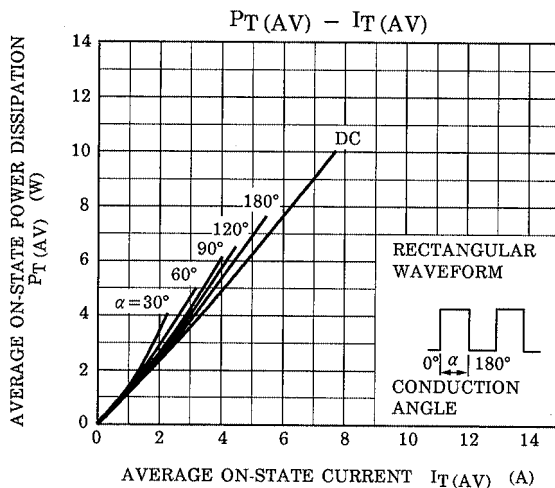
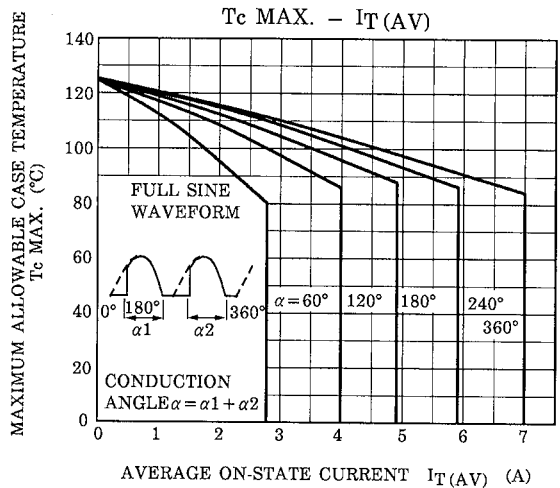
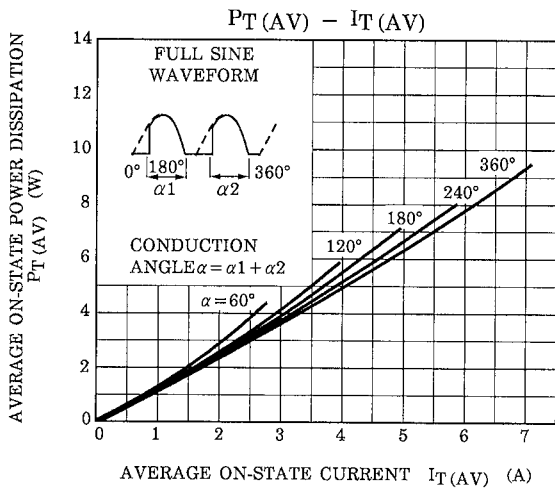
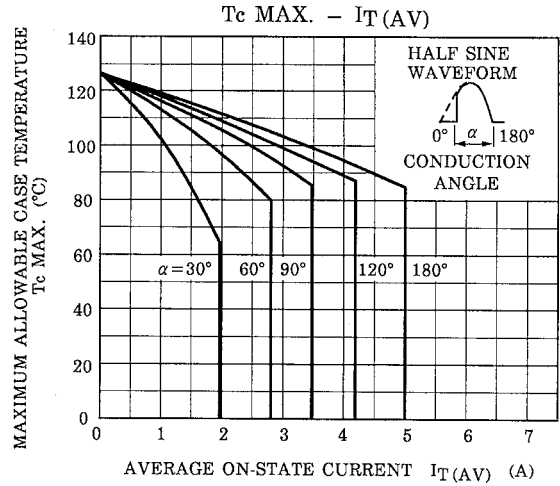
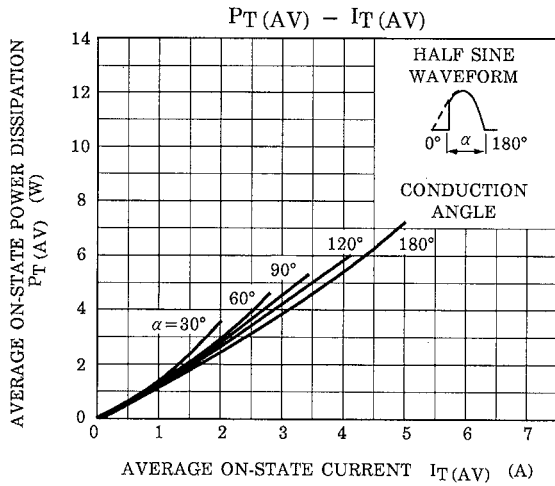
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN	TYP.	MAX	UNIT
Repetitive Peak Off-State Current and Repetitive Peak Reverse Current	$I_{DRM}$ $I_{RRM}$	$V_{DRM} = V_{RRM} = \text{Rated}$	—	—	10	$\mu\text{A}$
Peak On-State Voltage	$V_{TM}$	$I_{TM} = 15\text{A}$	—	—	1.5	V
Gate Trigger Voltage	$V_{GT}$	$V_D = 6\text{V}, R_L = 10\Omega$	—	—	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 / $\mu\text{s}$
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	—	—	4.2	$^\circ\text{C}/\text{W}$

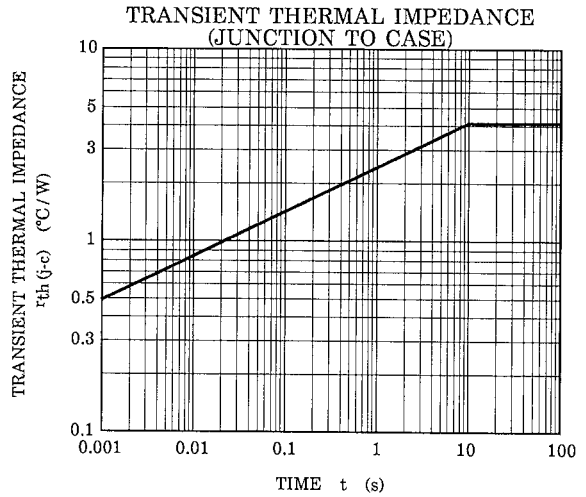
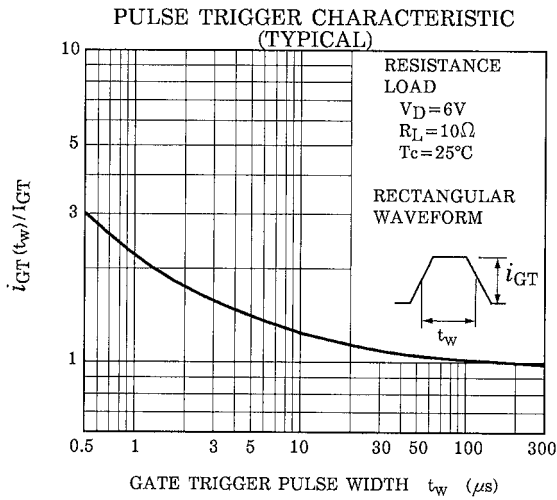
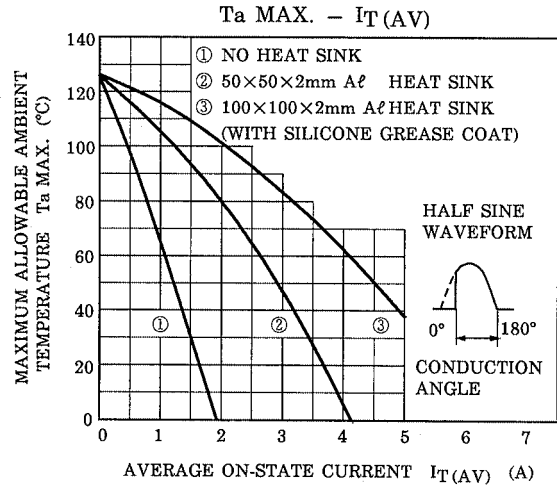
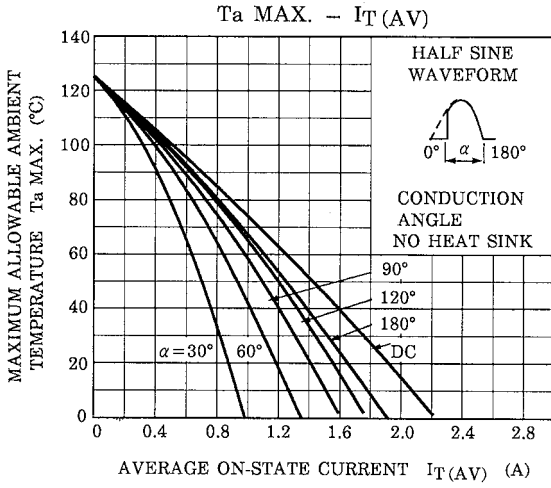
## MARKING



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







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