

TOSHIBA THYRISTOR SILICON PLANAR TYPE

SF0R3G42

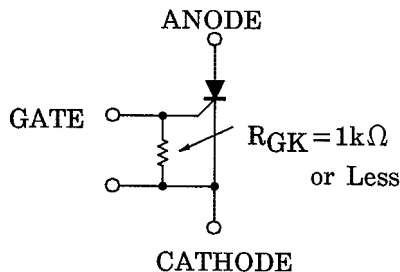
LOW POWER SWITCHING AND CONTROL APPLICATIONS

- Repetitive Peak Off-State Voltage : $V_{DRM} = 400V$
 Repetitive Peak Reverse Voltage : $V_{RRM} = 400V$
- Average On-State Current : $I_T (AV) = 300mA$
- Plastic Mold Type.

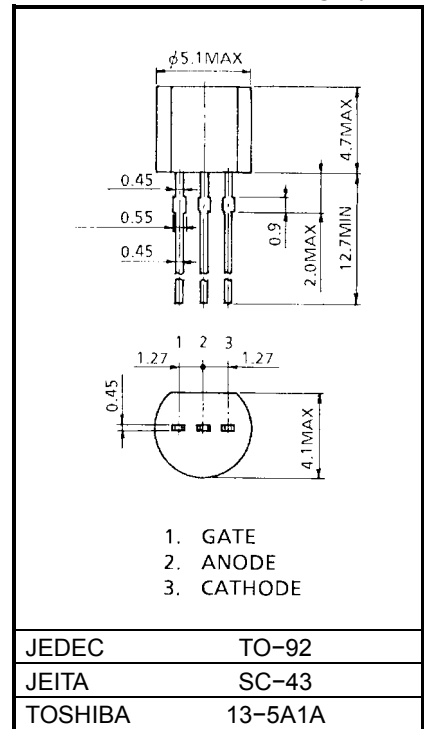
MAXIMUM RATINGS

CHARACTERISTIC	SYMBOL	RATING	UNIT
Repetitive Peak Off-State Voltage and Repetitive Peak Reverse Voltage ($R_{GK} = 1k\Omega$)	V_{DRM} V_{RRM}	400	V
Non-Repetitive Peak Reverse Voltage (Non-Repetitive < 5ms, $R_{GK} = 1k\Omega$, $T_j = 0 \sim 125^\circ C$)	V_{RSM}	500	V
Average On-State Current (Half Sine Waveform $T_a = 45^\circ C$)	$I_T (AV)$	300	mA
R.M.S On-State Current	$I_T (RMS)$	450	mA
Peak One Cycle Surge On-State Current (Non-Repetitive)	I_{TSM}	9 (50Hz)	A
		9.9 (60Hz)	
I^2t Limit Value	I^2t	0.4	A^2s
Peak Gate Power Dissipation	P_{GM}	0.1	W
Average Gate Power Dissipation	$P_G (AV)$	0.01	W
Peak Forward Gate Voltage	V_{FGM}	3.5	V
Peak Reverse Gate Voltage	V_{RGM}	-5	V
Peak Forward Gate Current	I_{GM}	125	mA
Junction Temperature	T_j	-40~125	$^\circ C$
Storage Temperature Range	T_{stg}	-40~125	$^\circ C$

Note: Should be used with gate resistance as follows.



Unit: mm

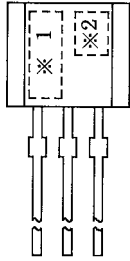


Weight: 0.2g

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

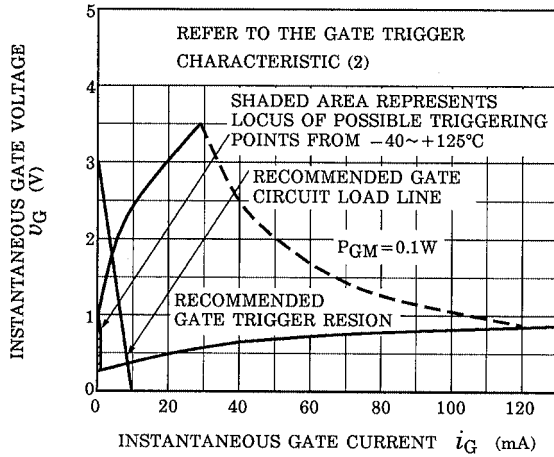
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN	TYP.	MAX	UNIT
Repetitive Peak Off-State Current and Repetitive Peak Reverse Current	I_{DRM} I_{RRM}	$V_{DRM} = V_{RRM} = \text{Rated}$ $R_{GK} = 1k\Omega, T_j = 125^\circ\text{C}$	—	—	100	μA
Peak On-State Voltage	V_{TM}	$I_{TM} = 2\text{A}$	—	—	2.0	V
Gate Trigger Voltage	V_{GT}	$V_D = 6\text{V}, R_L = 100\Omega, R_{GK} = 1k\Omega$	—	—	0.8	V
Gate Trigger Current	I_{GT}		—	—	200	μA
Gate Non-Trigger Voltage	V_{GD}	$V_D = \text{Rated}, R_{GK} = 1k\Omega,$ $T_a = 125^\circ\text{C}$	0.2	—	—	V
Holding Current	I_H	$R_L = 100\Omega, R_{GK} = 1k\Omega$	—	4	—	mA
Thermal Resistance	$R_{th(j-a)}$	Junction to Ambient	—	—	250	$^\circ\text{C} / \text{W}$

MARKING

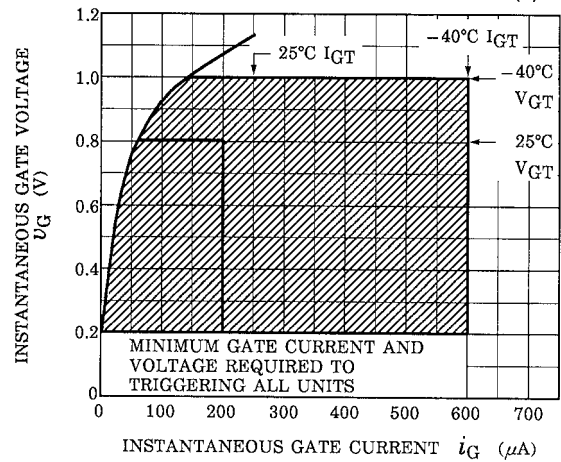


NUMBER	SYMBOL		MARK
*1	TYPE	SF0R3G42	F0R3G
*2	Lot Number Month (Starting from Alphabet A) Year (Last Decimal Digit of the Current Year)		Example 8A : January 1998 8B : February 1998 8L : December 1998

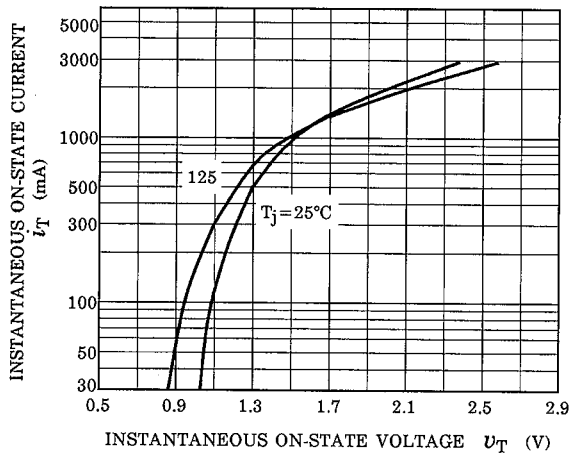
GATE TRIGGER CHARACTERISTIC (1)



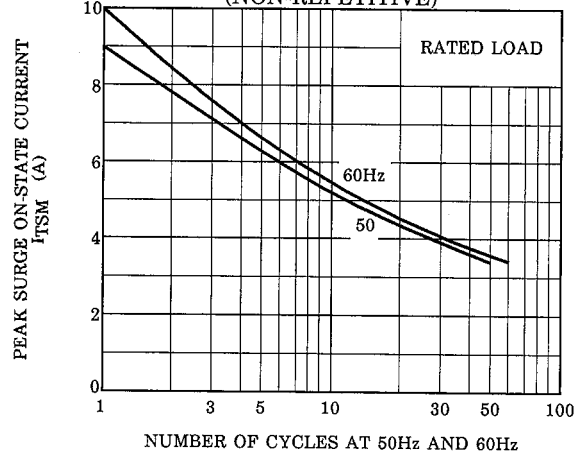
GATE TRIGGER CHARACTERISTIC (2)



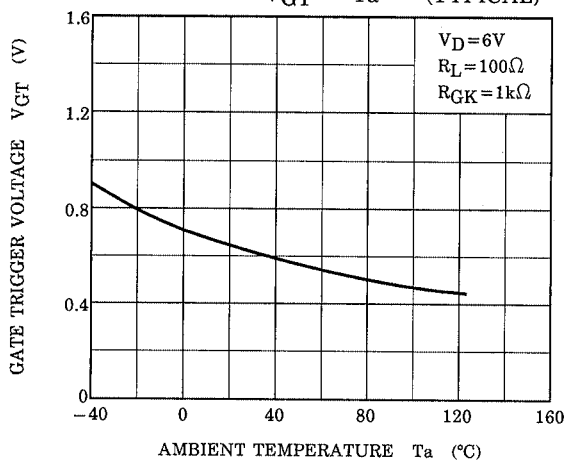
$i_T - v_T$



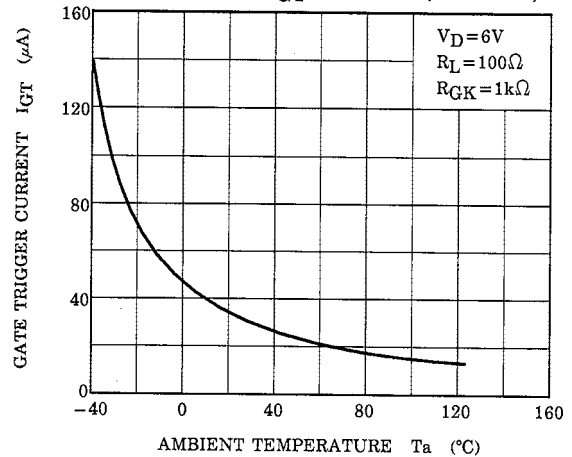
SURGE ON-STATE CURRENT (NON-REPETITIVE)

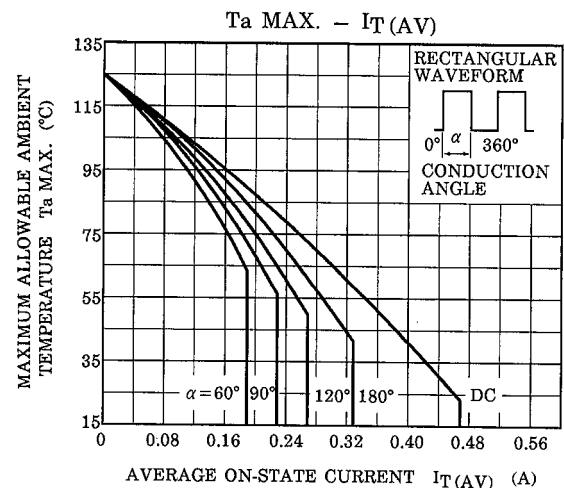
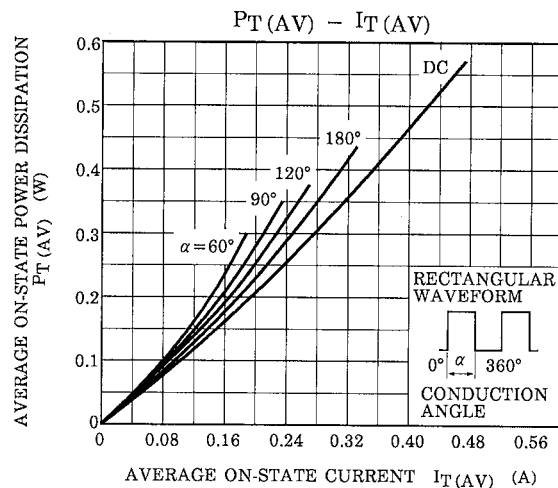
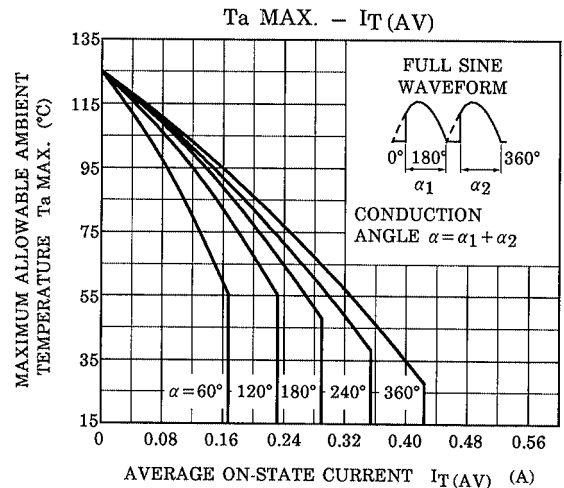
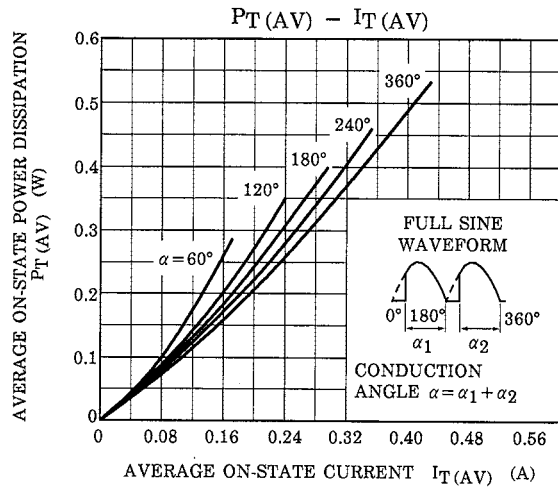
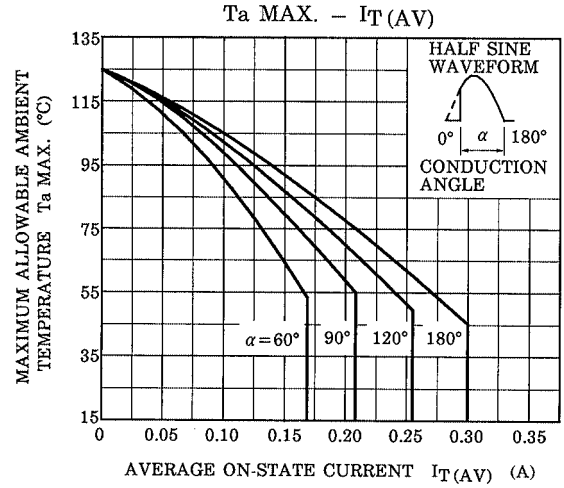
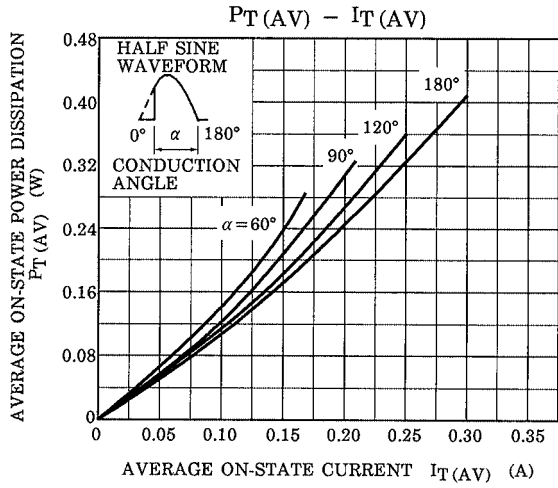


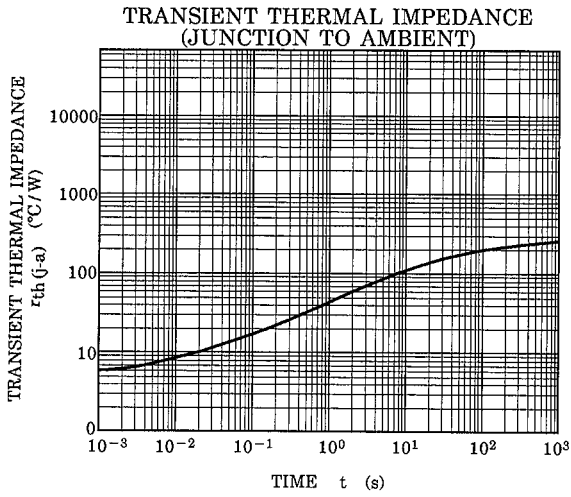
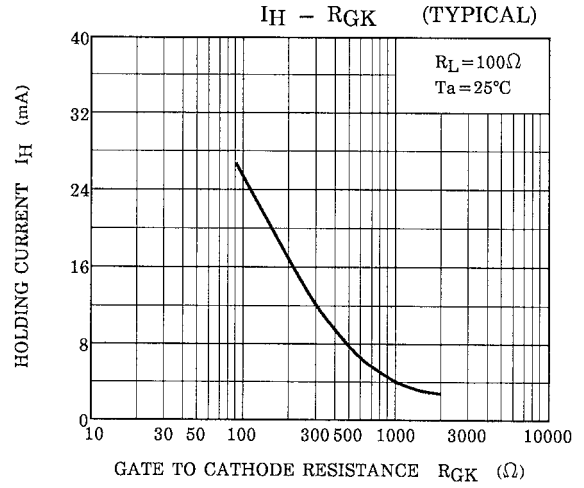
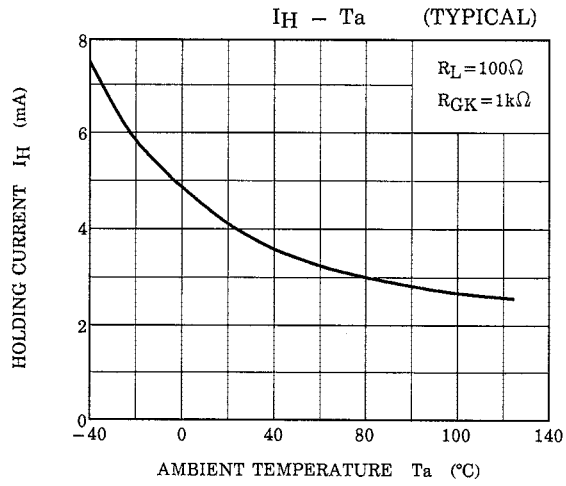
$V_{GT} - T_a$ (TYPICAL)



$I_{GT} - T_a$ (TYPICAL)







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