

TOSHIBA THYRISTOR SILICON PLANAR TYPE

USF05G49

LOW POWER SWITCHING AND CONTROL APPLICATIONS

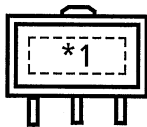
- Repetitive Peak Off-State Voltage : $V_{DRM} = 400V$
Repetitive Peak Reverse Voltage : $V_{RRM} = 400V$
- Average On-State Current : $I_T (AV) = 500mA$

MAXIMUM RATINGS

CHARACTERISTIC	SYMBOL	RATING	UNIT
Repetitive Peak Off-State Voltage and Repetitive Peak Reverse Voltage	V_{DRM}	400	V
	V_{RRM}		
Non-Repetitive Peak Reverse Voltage (Non-Repetitive<5ms, $T_j = 0\sim125^{\circ}C$)	V_{RSM}	500	V
Average On-State Current (Half Sine Waveform)	$I_T (AV)$	500	mA
R.M.S On-State Current	$I_T (RMS)$	800	mA
Peak One Cycle Surge On-State Current (Non-Repetitive)	I_{TSM}	9 (50Hz)	A
		10 (60Hz)	
I^2t Limit Value	I^2t	0.4	A^2s
Critical Rate of Rise of On-State Current (Note 1)	di / dt	10	$A / \mu s$
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	$^{\circ}C$

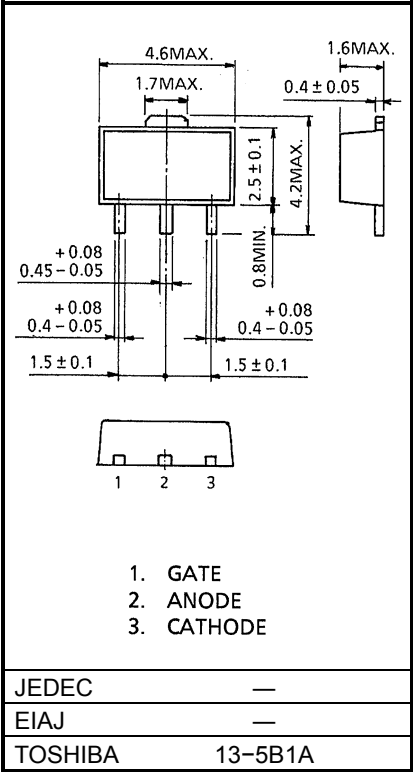
Note 1: di / dt Test condition $i_G = 5mA$, $t_{gw} = 10\mu s$, $t_{gr} \leq 250ns$

MARK



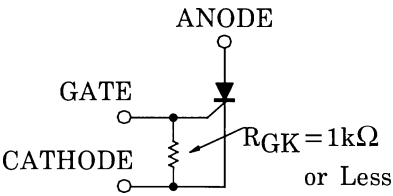
NUMBER	TYPE	MARK
*1	USF05G49	PA

Unit: mm



Weight: 0.2 g

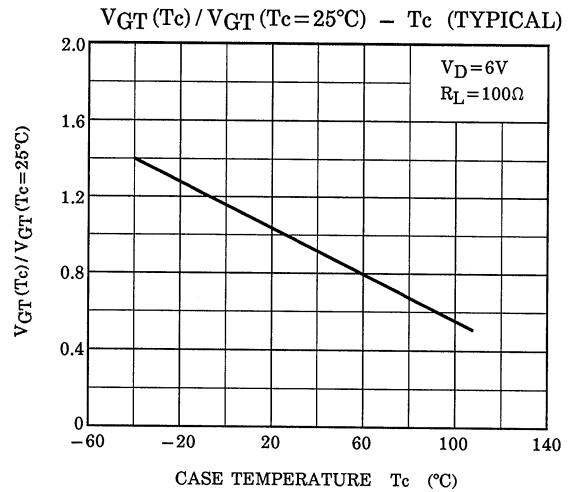
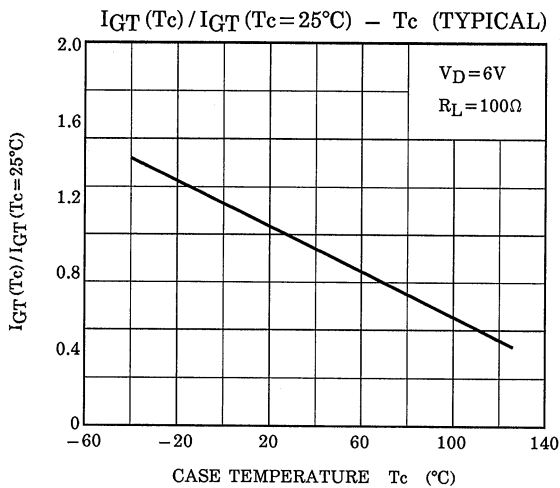
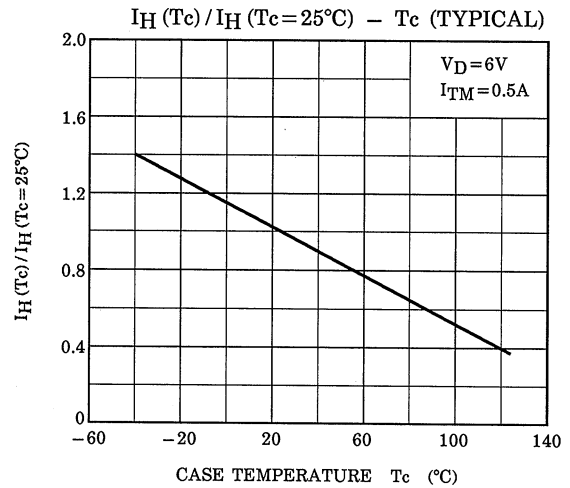
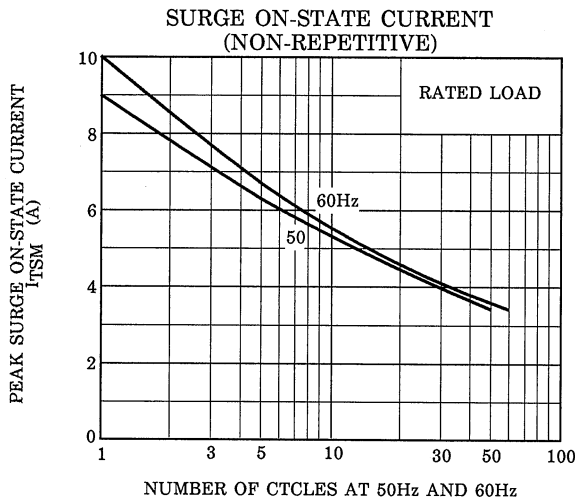
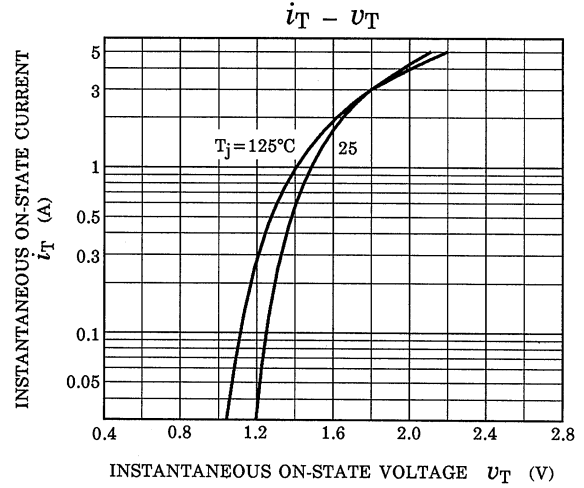
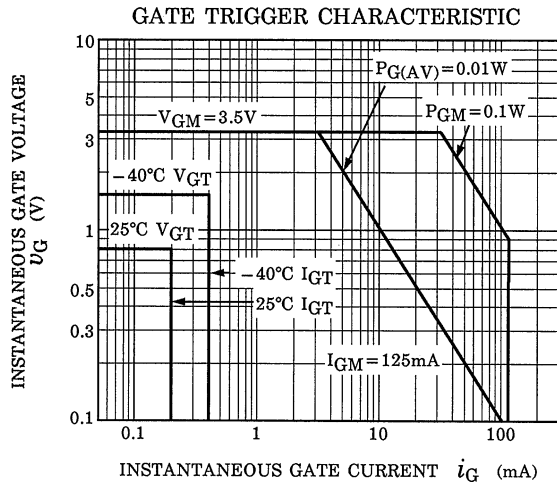
Note: Should be used with gate resistance as follows.

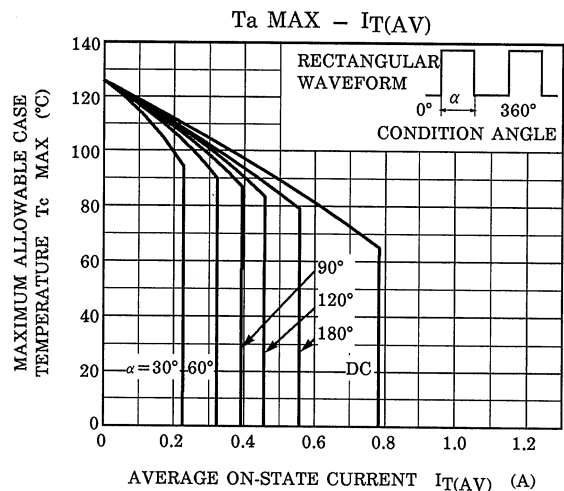
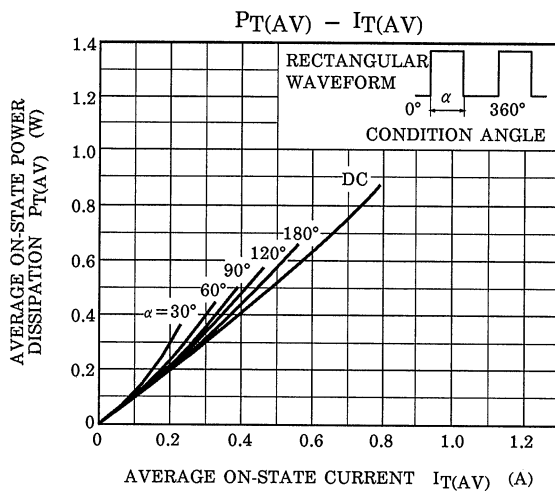
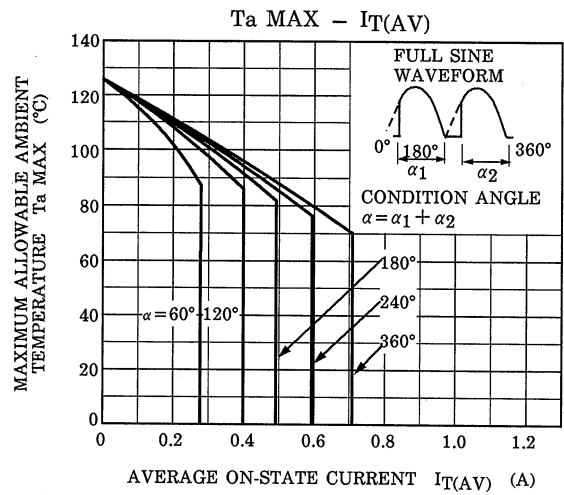
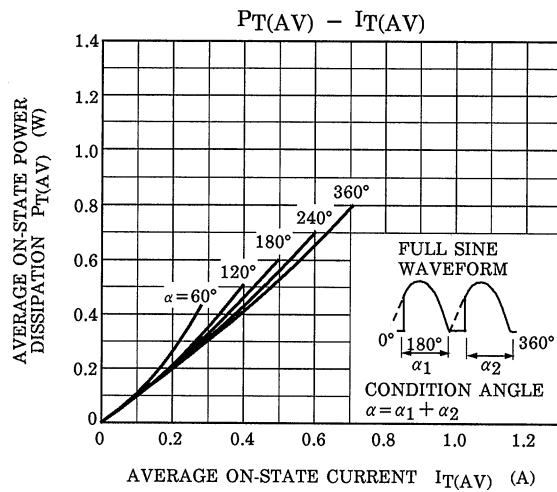
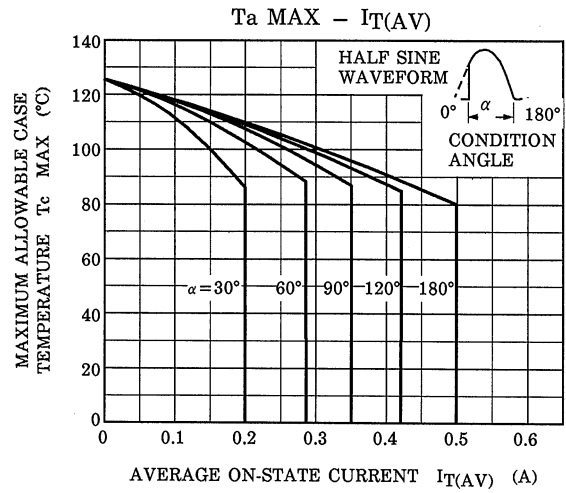
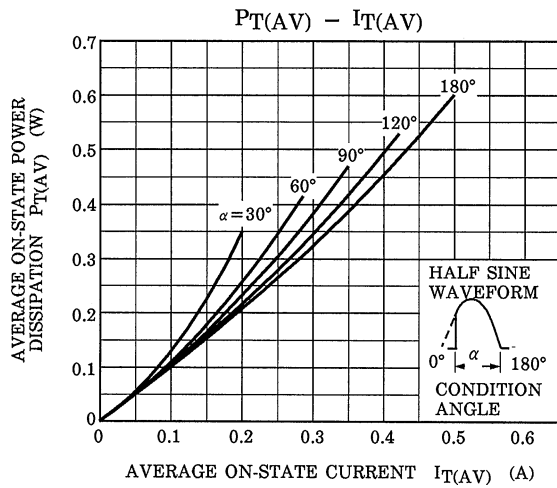


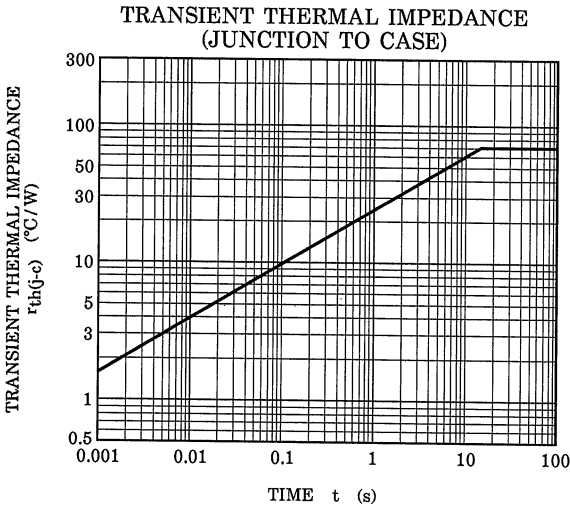
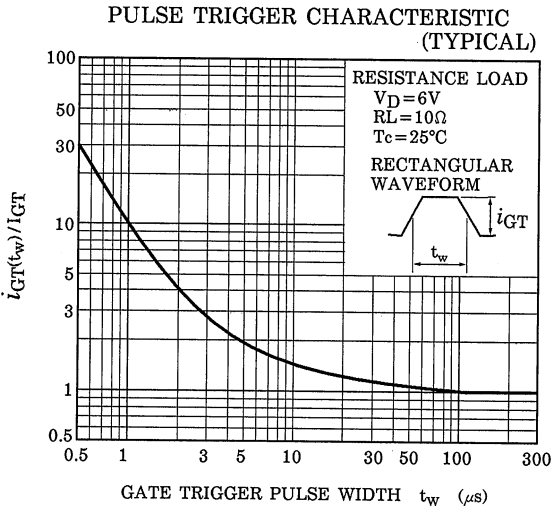
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN	TYP.	MAX	UNIT
Repetitive Peak Off-State Current and Repetitive Peak Reverse Current	I_{DRM} I_{RRM}	$V_{\text{DRM}} = V_{\text{RRM}} = \text{Rated}$	—	—	10	μA
Peak On-State Voltage	V_{TM}	$I_{\text{TM}} = 1\text{A}$	—	—	1.5	V
Gate Trigger Voltage	V_{GT}	$V_{\text{D}} = 6\text{V}$, $R_{\text{L}} = 100\Omega$ $R_{\text{GK}} = 1\text{k}\Omega$	—	—	0.8	V
Gate Trigger Current	I_{GT}		—	—	200	μA
Holding Current	I_{H}	$I_{\text{TM}} = 500\text{mA}$, $V_{\text{D}} = 6\text{V}$ $R_{\text{GK}} = 1\text{k}\Omega$	—	—	6	mA
Critical Rate of Rise of Off-State Voltage	dV / dt	$V_{\text{DRM}} = \text{Rated}$, $R_{\text{GK}} = 1\text{k}\Omega$ Exponential Rise	—	200	—	V / μs
Gate Turn-On Time	t_{gt}	$V_{\text{D}} = \text{Rated}$, $i_{\text{G}} = 5\text{mA}$ $R_{\text{GK}} = 1\text{k}\Omega$	—	—	1.5	μs
Thermal Resistance	$R_{\text{th(j-a)}}$	Junction to Ambient	—	—	70	$^{\circ}\text{C} / \text{W}$

Note: Thermal Resistance Test Condition
Use 0.6×30×30mm Alumina Plate







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