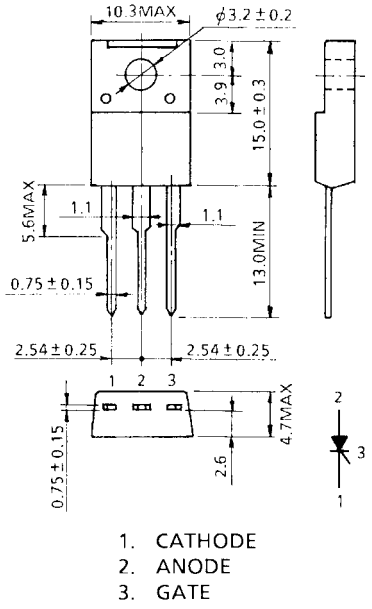
TOSHIBA HIGH SPEED THYRISTOR SILICON PLANAR TYPE

S6785G

HIGH SPEED SWITCHING AND CONTROL APPLICATIONS

Unit: mm



JEDEC	—
JEITA	—
TOSHIBA	13−10H1B

Weight: 1.7 g

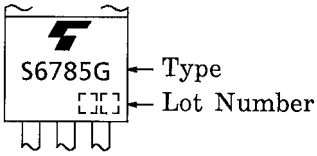
MAXIMUM RATINGS

CHARACTERISTIC	SYMBOL	RATING	UNIT
Repetitive Peak Off−State Voltage and Repetitive Peak Reverse Voltage	V_{DRM} V_{RRM}	400	V
Non−Repetitive Peak Reverse Voltage (Non−Repetitive <5ms, T_j = 0~125°C)	V_{RSM}	500	V
Average On−State Current (Half Sine Waveform)	$I_{T\ (AV)}$	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}	60 (50Hz)	A
		66 (60Hz)	
I^2t Limit Value	I^2t	18	A^2s
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}	−6	V
Peak Forward Gate Current	I_{GM}	2	A
Junction Temperature	T_j	−40~125	°C
Storage Temperature Range	T_{stg}	−40~125	°C

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

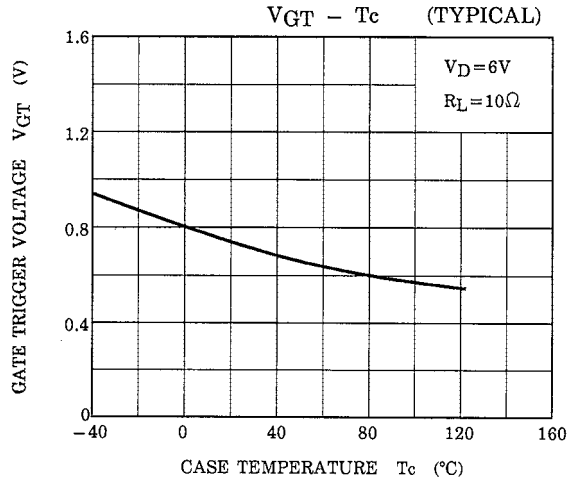
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	MAX.	UNIT
Repetitive Peak Off−State Current and Repetitive Peak Reverse Current	I_{DRM}	V_{DRM} =VRRM = Rated, T_j = 125°C	—	1.0	mA
	I_{RRM}		—	2.0	
Peak On−State Voltage	V_{TM}	I_{TM} = 20A	—	2.0	V
Gate Trigger Voltage	V_{GT}	V_D = 6V, R_L = 10Ω	—	1.5	V
Gate Trigger Current	I_{GT}		—	25.0	mA
Gate Non−Trigger Voltage	V_{GD}	V_D = Rated, Tc = 100°C	0.2	—	V
Gate Non−Trigger Current	I_{GD}		0.2	—	mA
Turn−On Time	t_{gt}	V_D = Rated, I_{TM} = 3A, I_G = 120mA, t_{gr} < 1μs	—	3.0	μs
Turn−Off Time	t_q	V_D = Rated, I_{TM} = 20A, V_G = − 2.5V, dv / dt ≥ 100V / μs, Tc = 90°C	—	3.5	μs
Critical Rate of Rise of Off−State Voltage	dv / dt	V_D = Rated, R_{GK} = 100Ω, V_G = −2.5V, Tc = 125°C, Exponential Rise	100	—	V / μs
Holding Current	I_H	R_L = 10Ω	—	80.0	mA
Thermal Resistance	$R_{th\ (j-c)}$	Junction to Case, DC	—	4.0	°C / W

MARKING

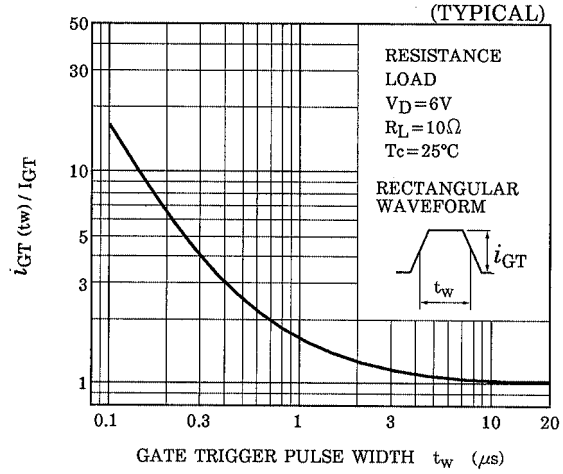


NUMBER	SYMBOL		MARK
*1	TYPE	S6785G	S6785G
*2	Lot Number Month (Starting from Alphabet A) Year (Last Decimal Digit of the Current Year)		Example 8A : January 1998 8B : February 1998 8L : December 1998

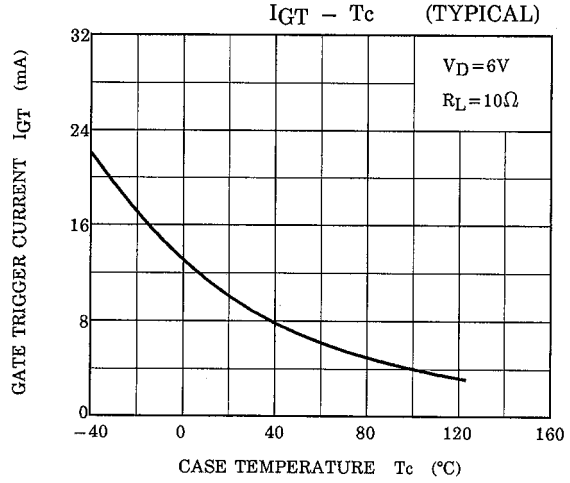
V_{GT} – Tc (TYPICAL)



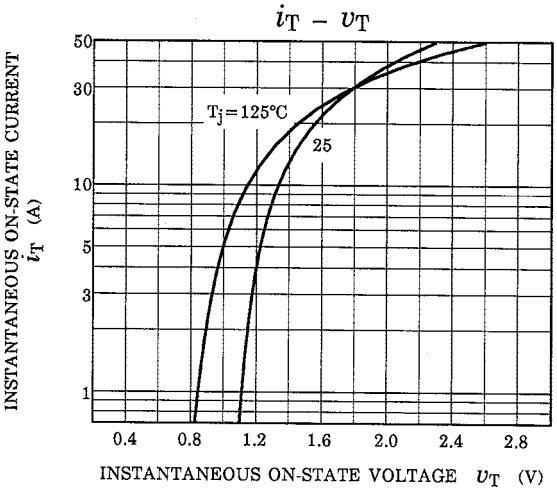
PULSE TRIGGER CHARACTERISTIC (TYPICAL)



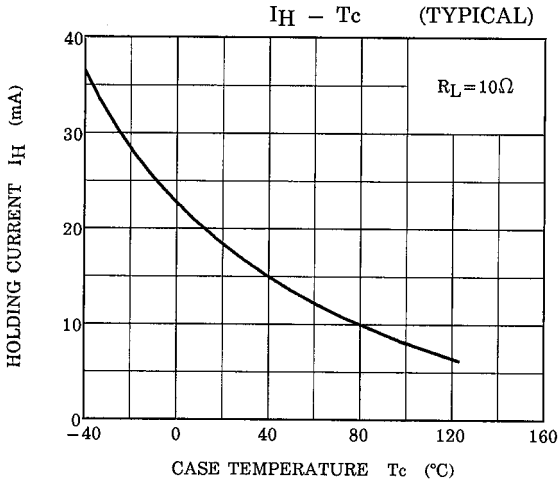
I_{GT} – Tc (TYPICAL)



i_T – v_T



I_H – Tc (TYPICAL)



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