TOSHIBA HIGH SPEED THYRISTOR SILICON PLANAR TYPE

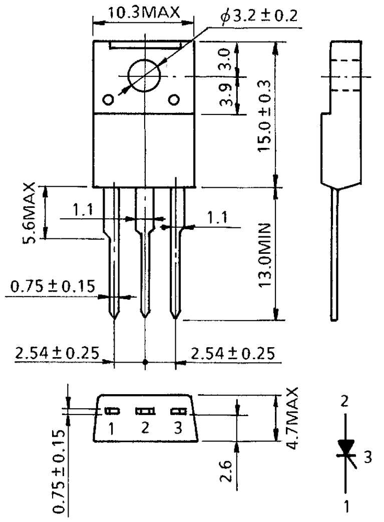
S6785G

HIGH SPEED SWITCHING AND CONTROL APPLICATIONS

Unit in mm

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, $T_j = 0\sim125°C$)	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



1. CATHODE
2. ANODE
3. GATE

JEDEC	—
EIAJ	—
TOSHIBA	13-10H1B

Weight : 1.7g

961001EAA2

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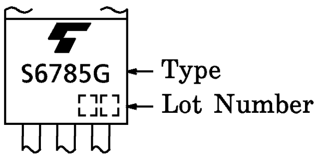
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

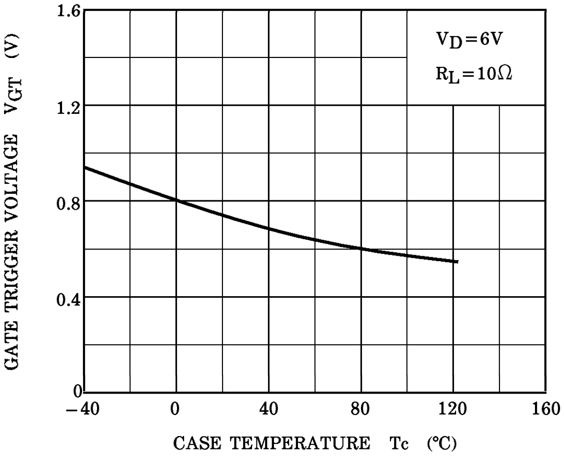
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	MAX.	UNIT
Repetitive Peak Off-State Current and Repetitive Peak Reverse Current	I_{DRM}	$V_{DRM} = V_{RRM} =$ Rated, $T_j = 125°C$	—	1.0	mA
	I_{RRM}		—	2.0	
Peak On-State Voltage	V_{TM}	$I_{TM} = 20A$	—	2.0	V
Gate Trigger Voltage	V_{GT}	$V_D = 6V$, $R_L = 10\Omega$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

MARKING

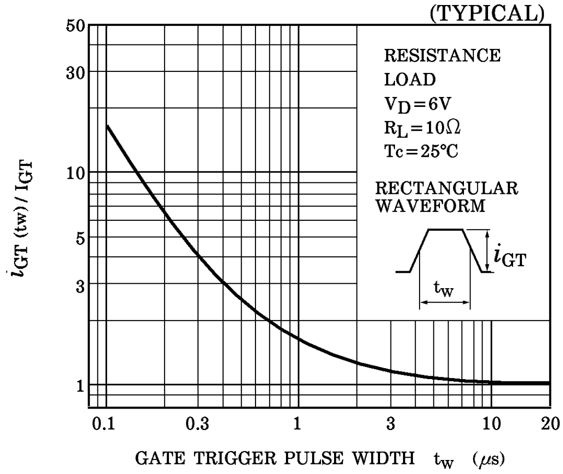


NUMBER	SYMBOL		MARK
※1	TYPE	S6785G	S6785G
※2	Lot Number □ □ Month (Starting from Alphabet A) Year (Last Decimal Digit of the Current Year)		Example 8A : January 1998 8B : February 1998 8L : December 1998

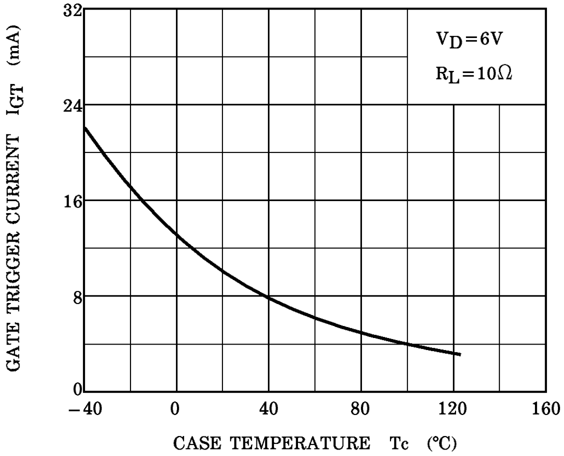
V_{GT} – Tc (TYPICAL)



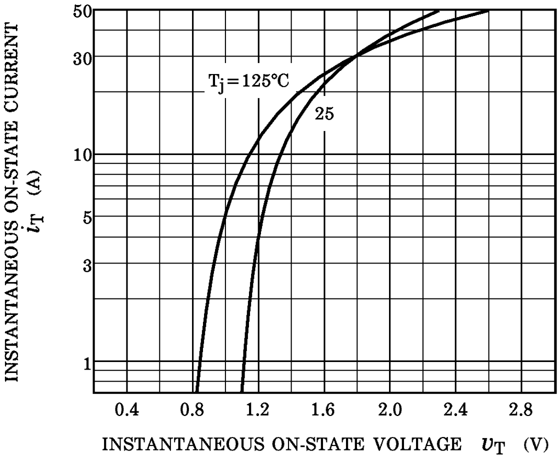
PULSE TRIGGER CHARACTERISTIC (TYPICAL)



I_{GT} – Tc (TYPICAL)



i_T – v_T



I_H – Tc (TYPICAL)