

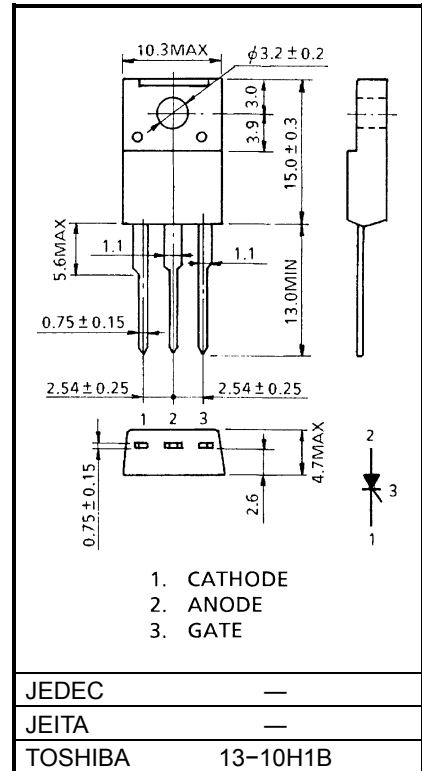
# S6785G

HIGH SPEED SWITCHING AND CONTROL APPLICATIONS

## 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, $T_j = 0\sim 125^\circ\text{C}$ )	$V_{RSM}$	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	$\text{A}^2\text{s}$
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	$V_{RGM}$	-6	V
Peak Forward Gate Current	$I_{GM}$	2	A
Junction Temperature	$T_j$	-40~125	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-40~125	$^\circ\text{C}$

Unit: mm

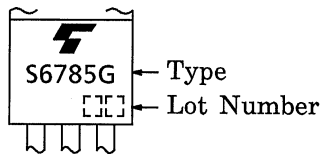


Weight: 1.7 g

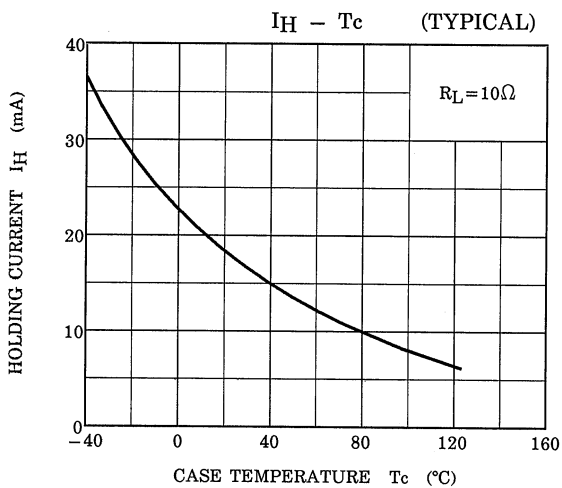
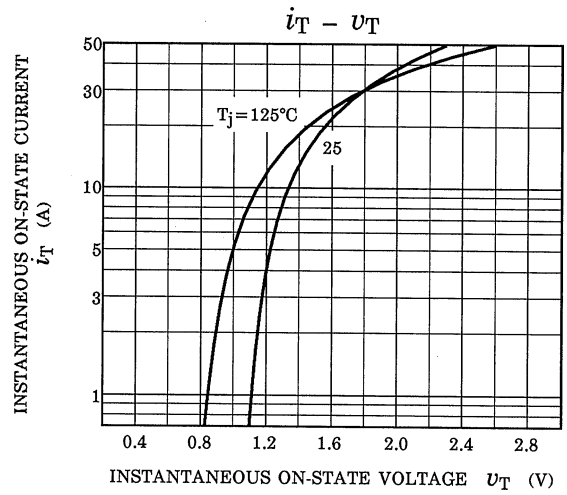
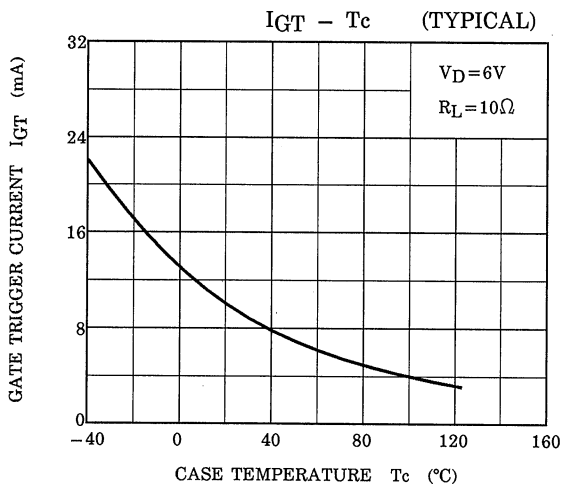
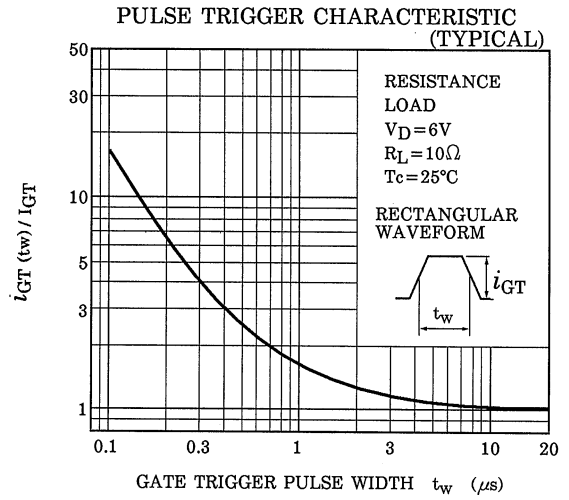
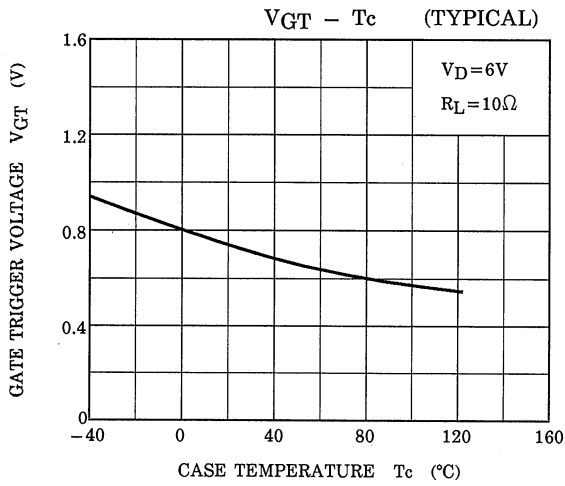
## ELECTRICAL CHARACTERISTICS (Ta = 25°C)

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

## MARKING



NUMBER	SYMBOL	MARK
*1	TYPE	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



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