

# S6744

## MEDIUM POWER CONTROL APPLICATIONS

- Repetitive Peak Off-State Voltage :  $V_{DRM} = 400V$   
Repetitive Peak Reverse Voltage :  $V_{RRM} = 400V$
- Average On-State Current :  $I_T (AV) = 8A$
- A Large Current Pulse Capability

## MAXIMUM RATINGS

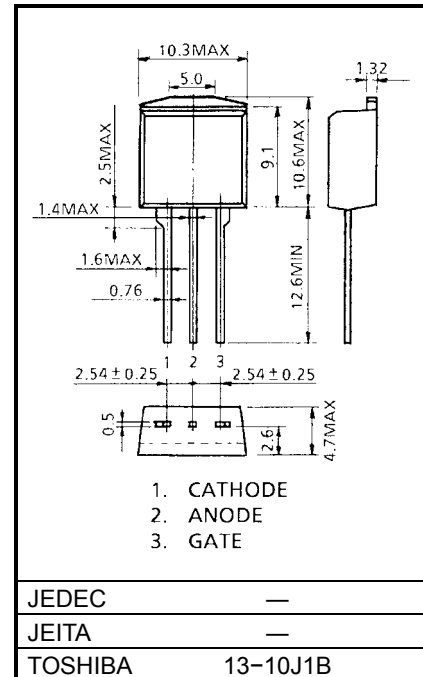
CHARACTERISTIC	SYMBOL	RATING	UNIT
Repetitive Peak Off-State Voltage and Repetitive Peak Reverse Voltage	$V_{DRM}$ $V_{RRM}$	400	V
Non-Repetitive Peak Reverse Voltage (Non-Repetitive < 5ms, $T_j = 0 \sim 125^\circ C$ )	$V_{RSM}$	500	V
Average On-State Current (Half Sine Waveform $T_c = 72^\circ C$ )	$I_T (AV)$	8	A
R.M.S On-State Current	$I_T (RMS)$	12.6	A
Peak One Cycle Surge On-State Current (Non-Repetitive)	$I_{TSM}$	200 (50Hz) 220 (60Hz)	A
$I^2 t$ Limit Value	$I^2 t$	200	$A^2 s$
Repetitive Peak Surge On-State Current (Note 1)	$I_{TRM}$	1300	A
Critical Rate of Rise of On-State Current (Note 2)	$di / dt$	100	A / $\mu s$
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	$V_{RGM}$	-5	V
Peak Forward Gate Current	$I_{GM}$	2	A
Junction Temperature	$T_j$	-40~125	$^\circ C$
Storage Temperature Range	$T_{stg}$	-40~125	$^\circ C$

Note 1:  $C_M \leq 500\mu F$ ,  $t_w \leq 300\mu s$ ,  $V_D \leq 350V$

Note 2:  $di / dt$  Test condition

$V_{DRM} = 0.5 \times \text{Rated}$ ,  $I_{TM} \leq 25A$ ,  $t_{gw} \geq 10\mu s$ ,  $t_{gr} \leq 250ns$ ,  $i_{gp} = I_{GT} \times 2.0$

Unit: mm

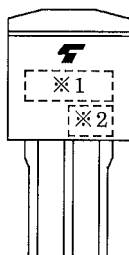





Weight: 1.7 g

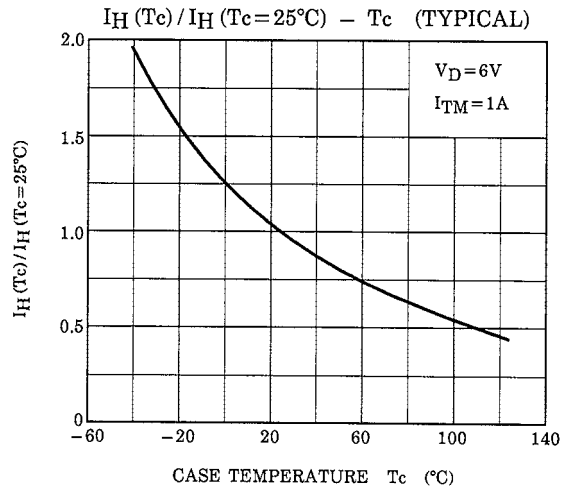
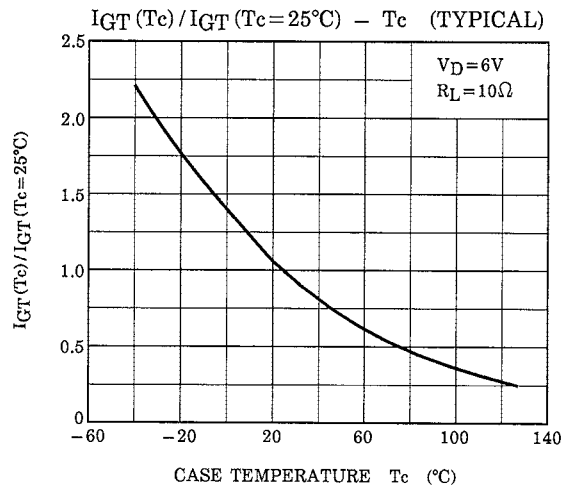
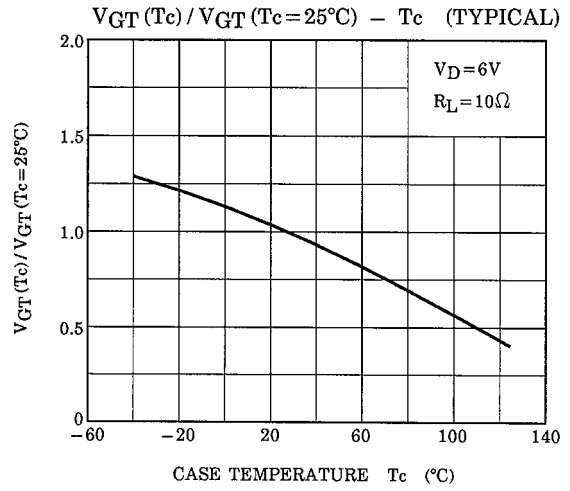
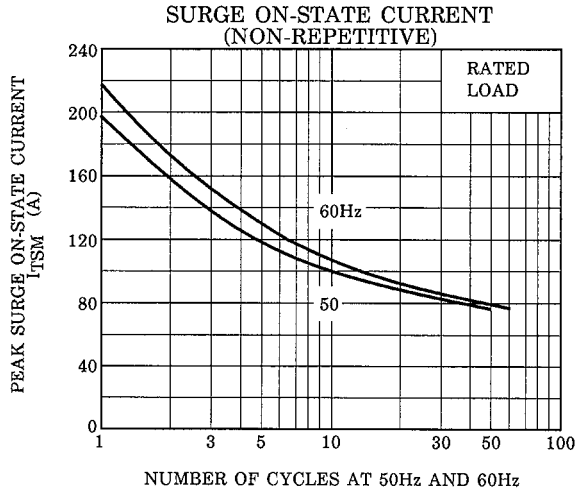
## ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN	TYP.	MAX	UNIT
Repetitive Peak Off-State Current and Repetitive Peak Reverse Current	$I_{DRM}$ $I_{RRM}$	$V_{DRM} = V_{RRM} = \text{Rated}$	—	—	10	$\mu\text{A}$
Peak On-State Voltage	$V_{TM}$	$I_{TM} = 25\text{A}$	—	—	1.5	V
Gate Trigger Voltage	$V_{GT}$	$V_D = 6\text{V}, R_L = 10\Omega$	—	—	1.0	V
Gate Trigger Current	$I_{GT}$		—	—	20	mA
Gate Non-Trigger Voltage	$V_{GD}$	$V_D = \text{Rated} \times 2 / 3, T_c = 125^\circ\text{C}$	0.2	—	—	V
Critical Rate of Rise of Off-State Voltage	$dv / dt$	$V_{DRM} = \text{Rated}, T_c = 125^\circ\text{C}, \text{Exponential Rise}$	—	50	—	$\text{V} / \mu\text{s}$
Holding Current	$I_H$	$V_D = 6\text{V}, I_{TM} = 1\text{A}$	—	—	40	mA
Latching Current	$I_L$	$V_D = 6\text{V}, f = 50\text{Hz}, t_{gw} = 100\mu\text{s}, I_G = 40\text{mA}$	—	—	60	mA
Thermal Resistance	$R_{th(j-a)}$	Junction to Ambient	—	—	70	$^\circ\text{C} / \text{W}$

## MARKING



*1	TYPE NAME	S6744	MARK	S6744
*2	<p>Lot Number</p> <p>   Month (Starting from Alphabet A) </p> <p>  Year (Last Decimal Digit of the Current Year) </p>		<p>Example</p> <p>8A : January 1998</p> <p>8B : February 1998</p> <p>8L : December 1998</p>	



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