

TOSHIBA HIGH SPEED THYRISTOR SILICON PLANAR TYPE

SH0R3D42

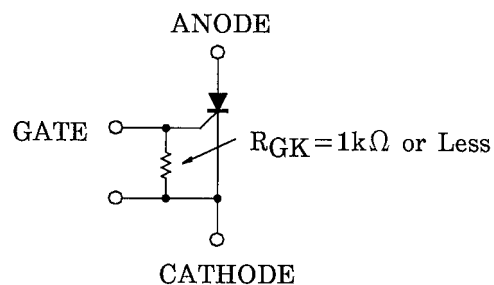
HIGH SPEED SWITCHING AND CONTROL APPLICATIONS

- Repetitive Peak Off-State Voltage : $V_{DRM} = 200V$
- Average On-State Current : $I_T (AV) = 300mA$
- Plastic Mold Type.

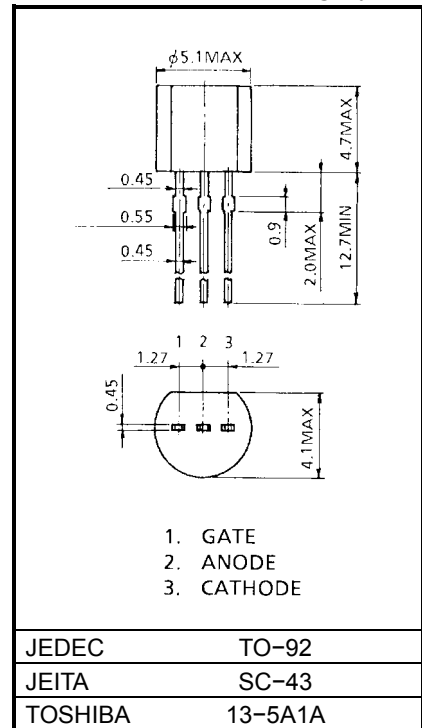
MAXIMUM RATINGS

CHARACTERISTIC	SYMBOL	RATING	UNIT
Repetitive Peak Off-State Voltage ($R_{GK} = 1k\Omega$)	V_{DRM}	200	V
Non-Repetitive Peak Off-State Voltage ($R_{GK} = 1k\Omega$)	V_{DSM}	250	V
Average On-State Current (Half Sine Waveform $T_a = 30^\circ C$)	$I_T (AV)$	300	mA
R.M.S On-State Current	$I_T (RMS)$	450	mA
Peak One Cycle Surge On-State Current (Non-Repetitive)	I_{TSM}	7 (50Hz)	A
$I^2 t$ Limit Value	$I^2 t$	0.3	$A^2 s$
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}	-7	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: Should be used with gate resistance as follows.



Unit: mm

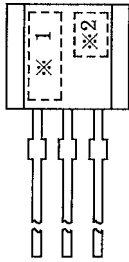





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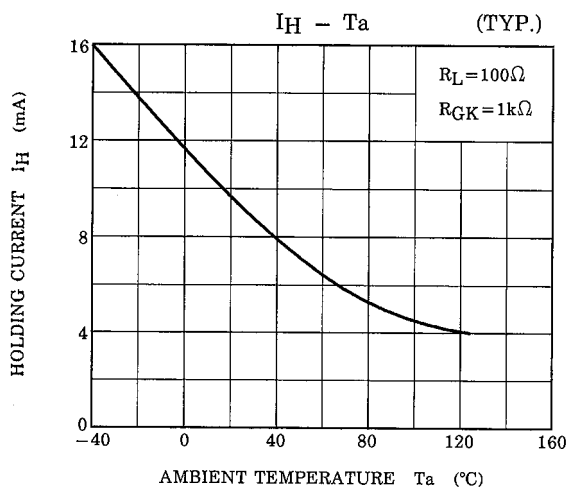
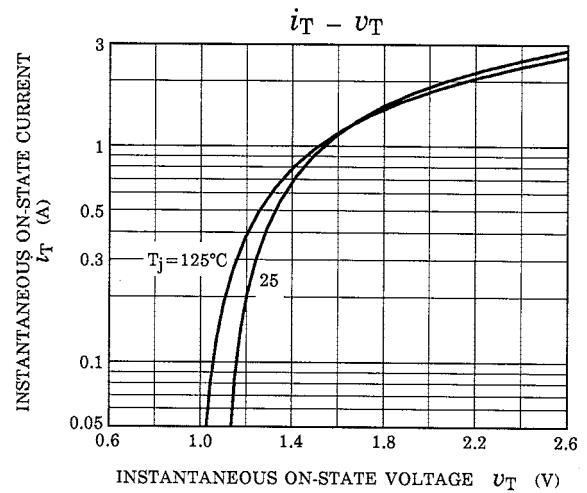
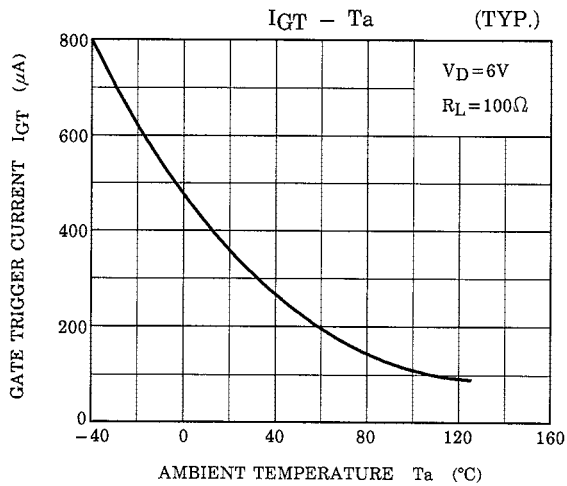
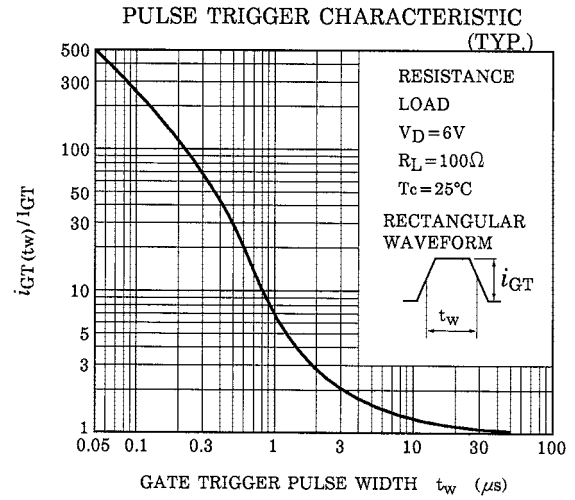
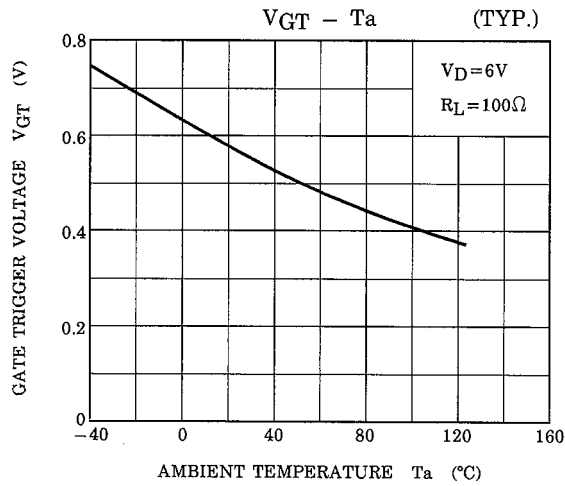
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN	MAX	UNIT
Repetitive Peak Off-State Current and Peak Reverse Current	I_{DRM}	$T_j = 125^{\circ}\text{C}$, $V_{\text{DRM}} = \text{Rated}$ $R_{\text{GK}} = 1\text{k}\Omega$	—	100	μA
Peak On-State Voltage	V_{TM}	$I_{\text{TM}} = 2\text{A}$	—	1.8	V
Gate Trigger Voltage	V_{GT}	$V_{\text{D}} = 6\text{V}$, $R_{\text{L}} = 100\Omega$	—	0.9	V
Gate Trigger Current	I_{GT}		—	1.0	mA
Gate Non-Trigger Voltage	V_{GD}	$V_{\text{D}} = \text{Rated}$, $T_{\text{c}} = 110^{\circ}\text{C}$	0.3	—	V
Turn-On Time	t_{gt}	$V_{\text{D}} = \text{Rated}$, $I_{\text{TM}} = 4\text{A}$ $I_{\text{G}} = 10\text{mA}$	—	2.0	μs
Turn-Off Time	t_{q}	$V_{\text{D}} = 20\text{V}$, $I_{\text{P}} = 1\text{A}$, $R_{\text{GK}} = 1\text{k}\Omega$	—	6.0	μs
Critical Rate of Rise of Off-State Voltage	dv / dt	$V_{\text{D}} = \text{Rated}$, $R_{\text{GK}} = 1\text{k}\Omega$ $T_{\text{c}} = 110^{\circ}\text{C}$, Exponential Rise	15	—	V / μs
Holding Current	I_{H}	$R_{\text{L}} = 100\Omega$, $R_{\text{GK}} = 1\text{k}\Omega$	—	15	mA
Thermal Resistance	$R_{\text{th (j-c)}}$	Junction to Ambient	—	250	$^{\circ}\text{C} / \text{W}$

MARKING



NUMBER	SYMBOL		MARK
*1	TYPE	SH0R3D42	H0R3D
*2	<p>Lot Number</p> <p>  </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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