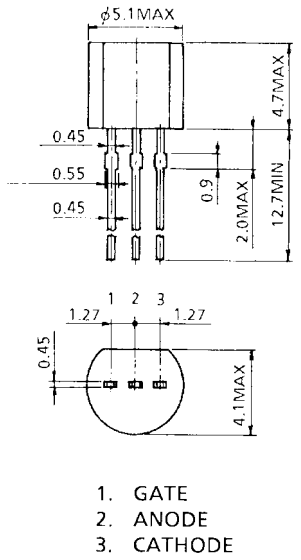
TOSHIBA HIGH SPEED THYRISTOR SILICON PLANAR TYPE

SH0R3D42

Unit: mm

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.



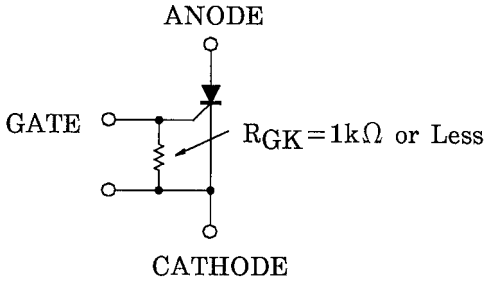
JEDEC	TO−92
JEITA	SC−43
TOSHIBA	13−5A1A

Weight: 0.2g

MAXIMUM RATINGS

CHARACTERISTIC	SYMBOL	RATING	UNIT
Repetitive Peak Off−State Voltage (R_{GK} = 1kΩ)	V_{DRM}	200	V
Non−Repetitive Peak Off−State Voltage (R_{GK} = 1kΩ)	V_{DSM}	250	V
Average On−State Current (Half Sine Waveform Ta = 30°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^2t Limit Value	I^2t	0.3	A^2s
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	°C
Storage Temperature Range	T_{stg}	−40~125	°C

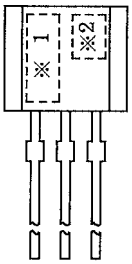
Note: Should be used with gate resistance as follows.



ELECTRICAL CHARACTERISTICS (Ta = 25°C)

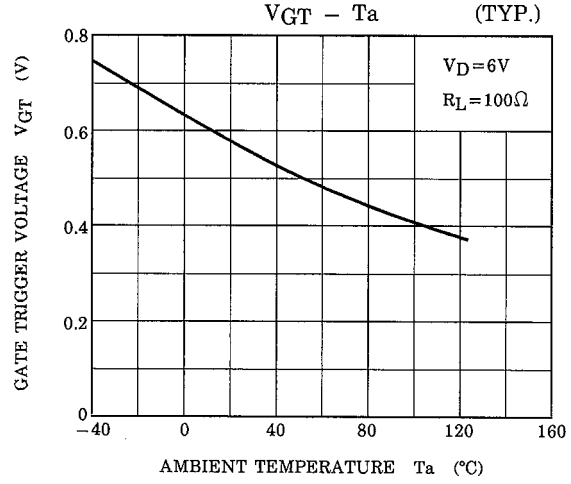
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN	MAX	UNIT
Repetitive Peak Off−State Current and Peak Reverse Current	I_{DRM}	T_j = 125°C, V_{DRM} = Rated R_{GK} = 1kΩ	—	100	μA
Peak On−State Voltage	V_{TM}	I_{TM} = 2A	—	1.8	V
Gate Trigger Voltage	V_{GT}	V_D = 6V, R_L = 100Ω	—	0.9	V
Gate Trigger Current	I_{GT}		—	1.0	mA
Gate Non−Trigger Voltage	V_{GD}	V_D = Rated, Tc = 110°C	0.3	—	V
Turn−On Time	t_{gt}	V_D = Rated, I_{TM} = 4A I_G = 10mA	—	2.0	μs
Turn−Off Time	t_q	V_D = 20V, I_P = 1A, R_{GK} = 1kΩ	—	6.0	μs
Critical Rate of Rise of Off−State Voltage	dv / dt	V_D = Rated, R_{GK} = 1kΩ Tc = 110°C, Exponential Rise	15	—	V / μs
Holding Current	I_H	R_L = 100Ω, R_{GK} = 1kΩ	—	15	mA
Thermal Resistance	$R_{th\ (j-c)}$	Junction to Ambient	—	250	°C / W

MARKING

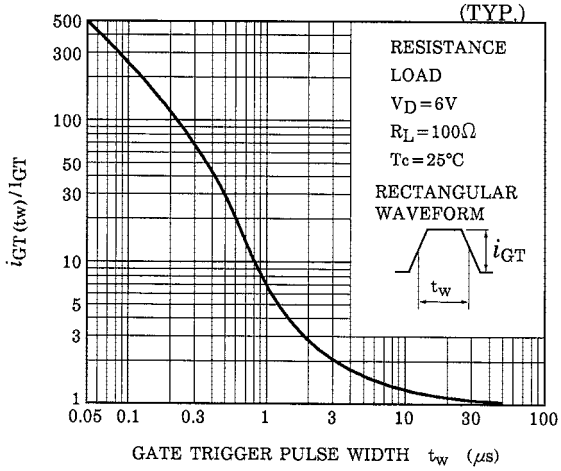


NUMBER	SYMBOL		MARK
*1	TYPE	SH0R3D42	H0R3D
*2	Lot Number □ □ Month (Starting from Alphabet A) Year (Last Decimal Digit of the Current Year)		Example 8A : January 1998 8B : February 1998 8L : December 1998

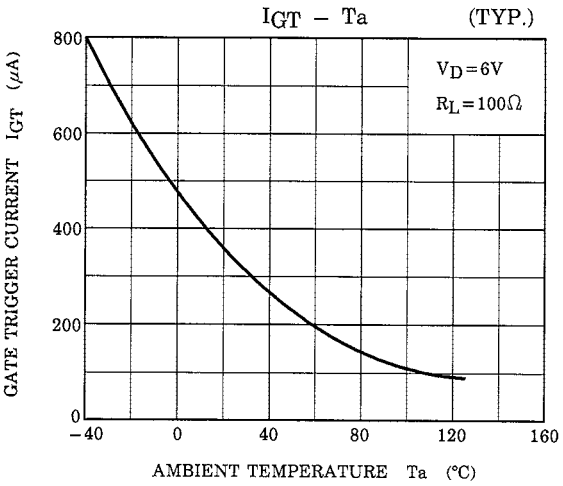
V_{GT} – Ta (TYP.)



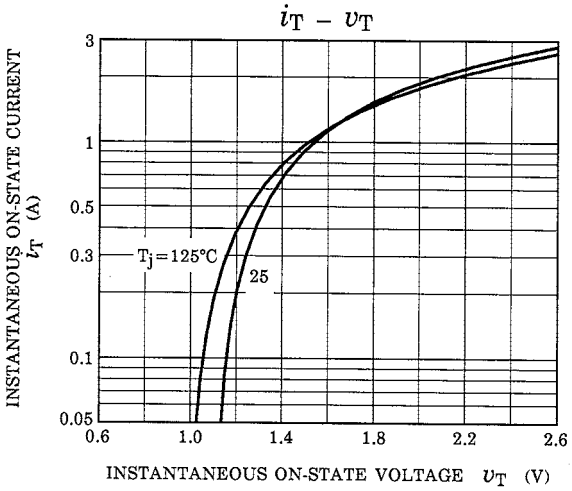
PULSE TRIGGER CHARACTERISTIC (TYP.)



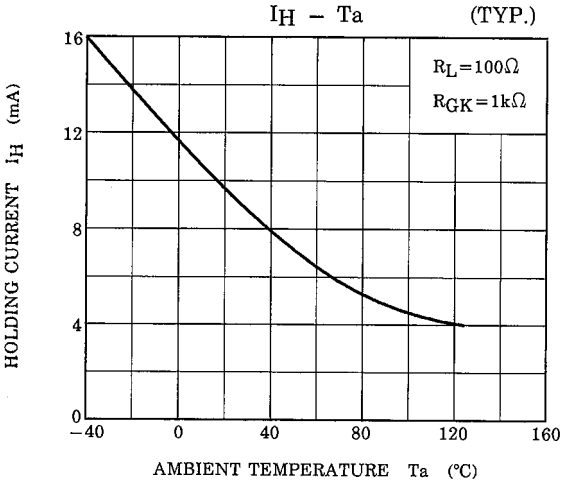
I_{GT} – Ta (TYP.)



i_T – v_T



I_H – Ta (TYP.)



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