

TOSHIBA THYRISTOR SILICON DIFFUSED TYPE

SF5G41A, SF5J41A

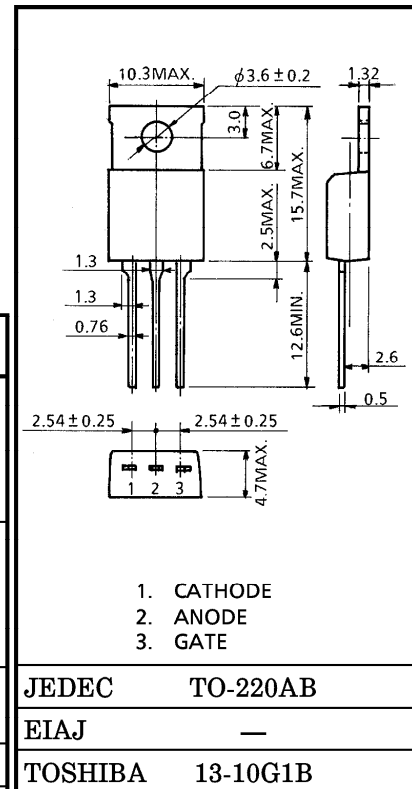
MEDIUM POWER CONTROL APPLICATIONS.

Unit in mm

- Repetitive Peak Off-State Voltage : V_{DRM}
- Repetitive Peak Reverse Voltage : V_{RRM} } = 400, 600V
- Average On-State Current : $I_{\text{T(AV)}} = 5\text{A}$
- Gate Trigger Current : $I_{\text{GT}} = 15\text{mA (MAX.)}$

MAXIMUM RATINGS

CHARACTERISTIC		SYMBOL	RATING	UNIT
Repetitive Peak Off-State Voltage and Repetitive Peak Reverse Voltage	SF5G41A	V_{DRM} V_{RRM}	400	V
	SF5J41A		600	
Non-Repetitive Peak Reverse Voltage (Non-Repetitive < 5ms, $T_j = 0 \sim 125^{\circ}\text{C}$)	SF5G41A	V_{RSM}	500	V
	SF5J41A		720	
Average On-State Current (Half Sine Waveform $T_c = 91^{\circ}\text{C}$)		$I_{T(AV)}$	5	A
R.M.S On-State Current		$I_{T(RMS)}$	7.8	A
Peak One Cycle Surge On-State Current (Non-Repetitive)		I_{TSM}	80 (50Hz)	A
			88 (60Hz)	
I^2t Limit Value ($t = 1 \sim 10\text{ms}$)		I^2t	32	A^2s
Critical Rate of Rise of On-State Current		di / dt	100	$\text{A} / \mu\text{s}$
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}	-5	V
Peak Forward Gate Current		I_{GM}	2	mA
Junction Temperature		T_j	$-40 \sim 125$	$^{\circ}\text{C}$
Storage Temperature Range		T_{stg}	$-40 \sim 125$	$^{\circ}\text{C}$



Weight : 2g

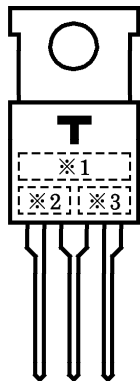
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ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	MAX.	UNIT
Repetitive Peak Off-State Current and Repetitive Peak Reverse Current	I_{DRM} I_{RRM}	$V_{DRM}=V_{RRM}=\text{Rated}$	—	10	μA
Peak On-State Voltage	V_{TM}	$I_{TM}=15\text{A}$	—	1.6	V
Gate Trigger Voltage	V_{GT}	$V_D=6\text{V}, R_L=10\Omega$	—	1.0	V
Gate Trigger Current	I_{GT}		—	15	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	$V_{DRM}=\text{Rated}\times 2/3, T_c=125^\circ\text{C},$ Exponential Rise	100	—	$\text{V}/\mu\text{s}$
Holding Current	I_H	$V_D=6\text{V}, I_{TM}=1\text{A}$	—	40	mA
Latching Current	I_L	$V_D=6\text{V}, f=50\text{Hz}, t_{gw}=50\mu\text{s},$ $i_G=30\text{mA}$	—	60	mA
Thermal Resistance	$R_{th(j-c)}$	Junction to Case	—	3	$^\circ\text{C}/\text{W}$

MARK



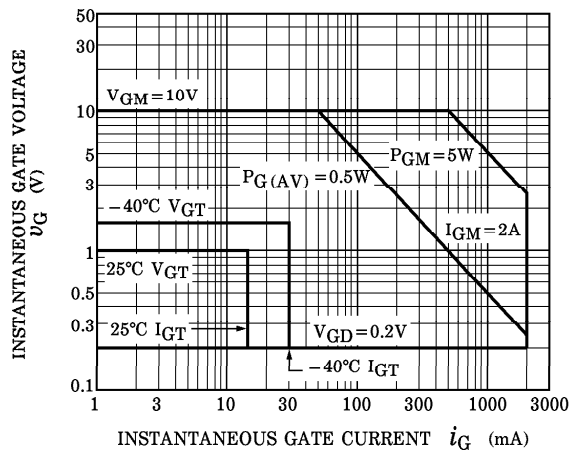
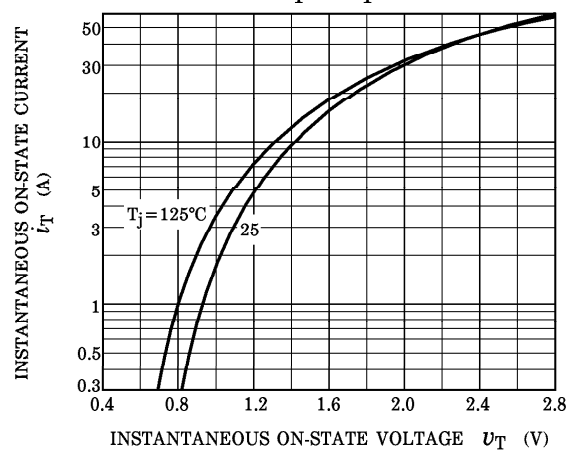
NUMBER	SYMBOL		MARK
※1	TYPE	SF5G41	SF5G41A
		SF5J41	SF5J41A
※2		SF5G41A, SF5J41A	A
※3	Lot Number Month (Starting from Alphabet A) Year (Last Number of the Christian Era)		Example 2A : January 1992 2B : February 1992 2L : December 1992

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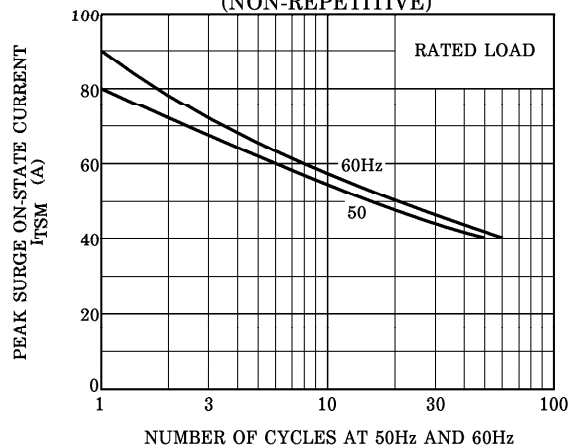
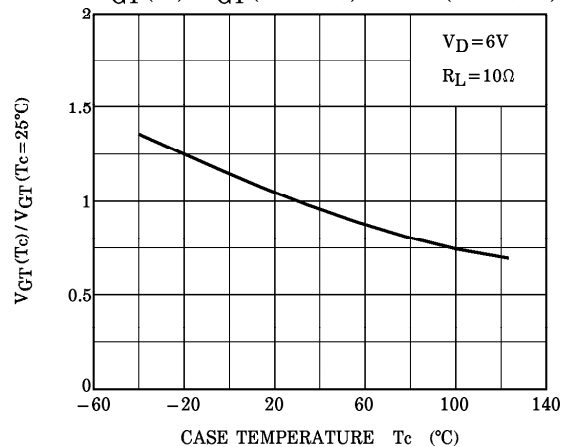
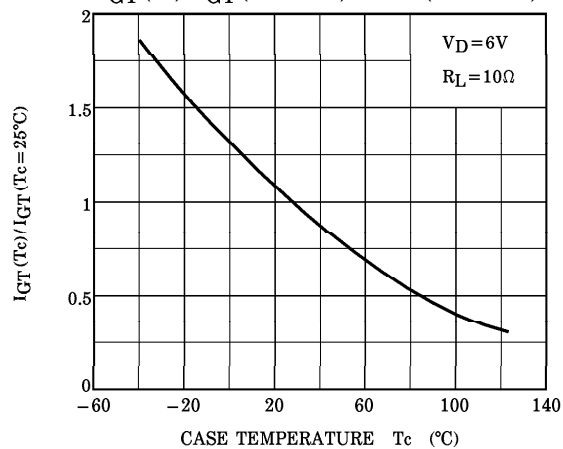
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GATE TRIGGER CHARACTERISTIC

 $i_T - v_T$ 

SURGE ON-STATE CURRENT (NON-REPETITIVE)

 $V_{GT}(T_c) / V_{GT}(T_c = 25^\circ C) - T_c$ (TYPICAL) $I_{GT}(T_c) / I_{GT}(T_c = 25^\circ C) - T_c$ (TYPICAL) $I_H(T_c) / I_H(T_c = 25^\circ C) - T_c$ (TYPICAL)