

TOSHIBA THYRISTOR SILICON PLANAR TYPE

# SF10G41A, SF10J41A

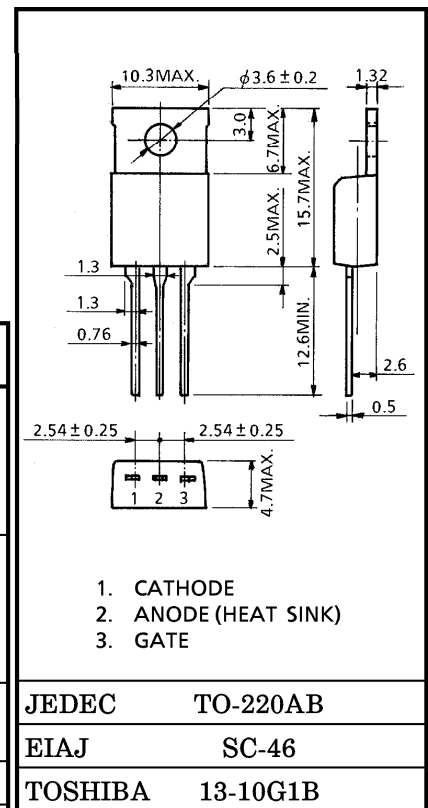
MEDIUM POWER CONTROL APPLICATIONS

Unit in mm

- Repetitive Peak Off-State Voltage :  $V_{DRM}$  } = 400, 600V
- Repetitive Peak Reverse Voltage :  $V_{RRM}$  }
- Average On-State Current :  $I_T(AV) = 10A$
- Gate Trigger Current :  $I_{GT} = 15mA (Max.)$

**MAXIMUM RATINGS**

CHARACTERISTIC		SYMBOL	RATING	UNIT
Repetitive Peak Off-State Voltage and Repetitive Peak Reverse Voltage	SF10G41A	$V_{DRM}$ $V_{RRM}$	400	V
	SF10J41A		600	
Non-Repetitive Peak Reverse Voltage (Non-Repetitive < 5ms, $T_j = 0 \sim 125^\circ C$ )	SF10G41A	$V_{RSM}$	500	V
	SF10J41A		720	
Average On-State Current (Half Sine Waveform $T_c = 79^\circ C$ )		$I_T(AV)$	10	A
R.M.S On-State Current		$I_T(RMS)$	16	A
Peak One Cycle Surge On-State Current (Non-Repetitive)		$I_{TSM}$	160 (50Hz)	A
			176 (60Hz)	
$I^2t$ Limit Value		$I^2t$	125	$A^2s$
Critical Rate of Rise of On-State Current		$di/dt$	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	$^\circ C$



Weight : 2g

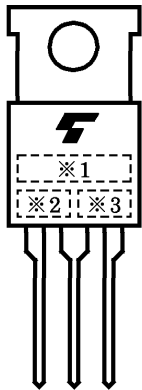
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ELECTRICAL CHARACTERISTICS (Ta = 25°C)

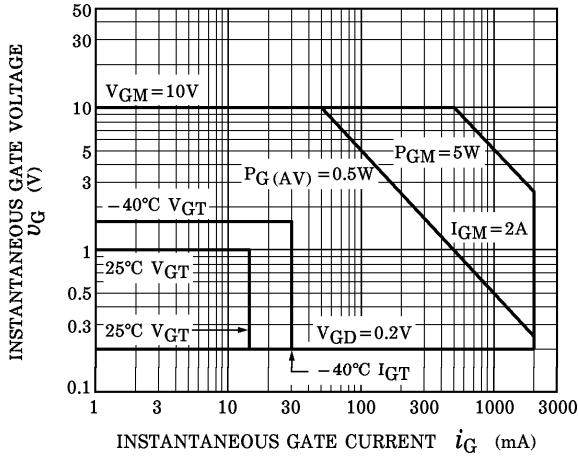
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	MAX.	UNIT
Repetitive Peak Off-State Current and Repetitive Peak Reverse Current	$I_{DRM}$ $I_{RRM}$	$V_{DRM} = V_{RRM} = \text{Rated}$	—	10	$\mu\text{A}$
Peak On-State Voltage	$V_{TM}$	$I_{TM} = 30\text{A}$	—	1.6	V
Gate Trigger Voltage	$V_{GT}$	$V_D = 6\text{V}, R_L = 10\Omega$	—	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	—	2.0	$^\circ\text{C}/\text{W}$

MARKING

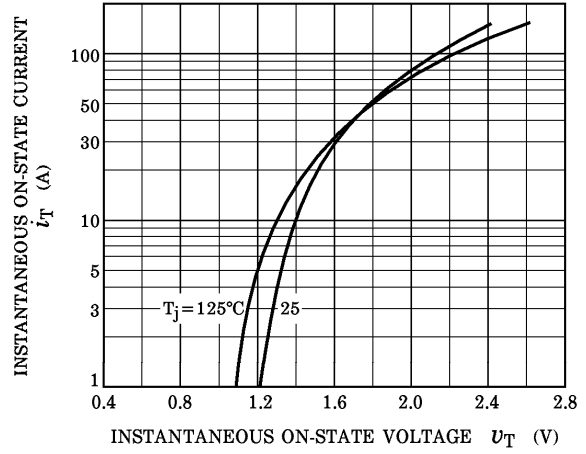


NUMBER	SYMBOL	MARK
*1	SF10G41A	SF10G41
	SF10J41A	SF10J41
*2	SF10G41A, SF10J41A	A
*3	Lot Number Month (Starting from Alphabet A) Year (Last Decimal Digit of the Current Year)	Example 8A : January 1998 8B : February 1998 8L : December 1998

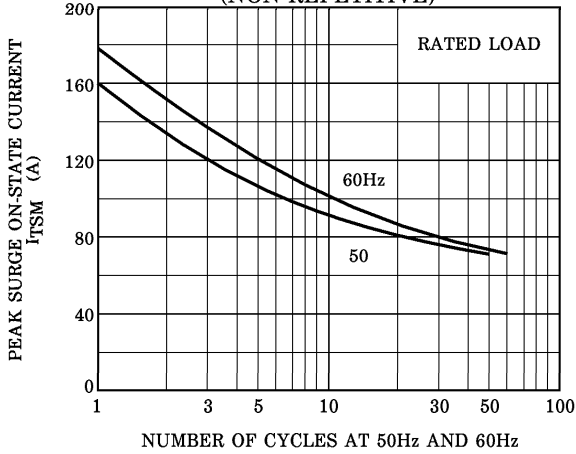
GATE TRIGGER CHARACTERISTIC



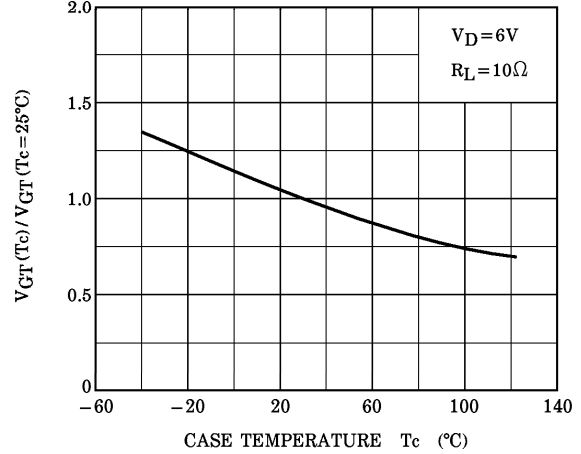
$i_T - v_T$



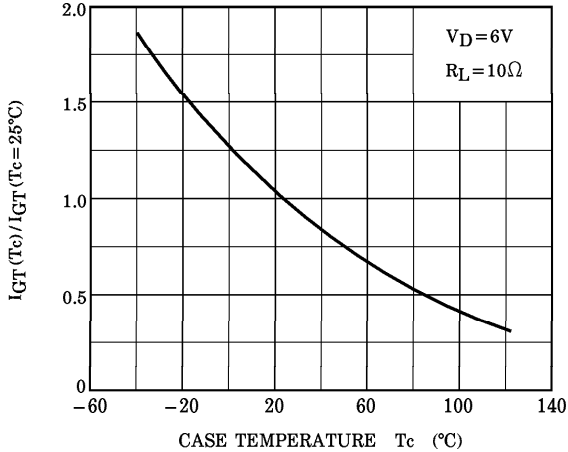
SURGE ON-STATE CURRENT (NON-REPETITIVE)



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

