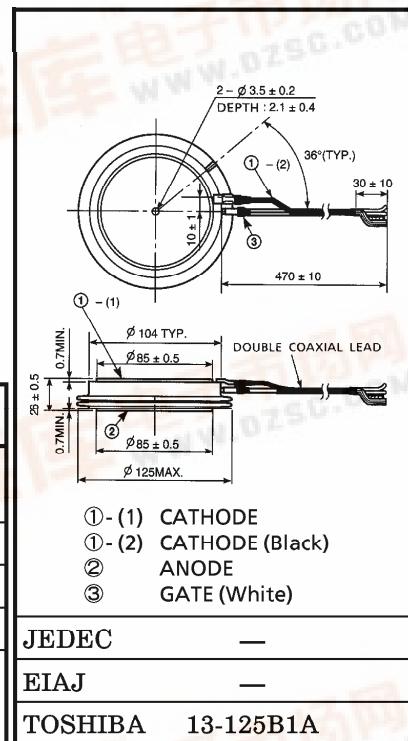


TOSHIBA GATE TURN-OFF THYRISTOR LOW SNUBBER TYPE

## SG4000JX26

## INVERTER APPLICATION

Unit in mm



Weight : 1700g

## MAXIMUM RATING

CHARACTERISTIC	SYMBOL	RATING	UNIT
Repetitive Peak Off-State Voltage (Note 1)	V <sub>DRM</sub>	6000	V
Repetitive Peak Reverse Voltage	V <sub>RRM</sub>	16	V
Peak Turn-Off Current (Note 2)	I <sub>TGQM</sub>	4000	A
R.M.S On-State Current (Note 3)	I <sub>T</sub> (RMS)	1600	A
Peak One Cycle Surge On-State Current (Non-Repetitive, 10ms Width Half Sine Waveform)	I <sub>TSM</sub>	20000	A
Critical Rate of Rise of On-State Current (Note 4)	di / dt	500	A / $\mu$ s
Peak Forward Gate Current	I <sub>FGM</sub>	100	A
Average Forward Gate Power Dissipation	P <sub>FG</sub> (AV)	100	W
Average Reverse Gate Power Dissipation	P <sub>RG</sub> (AV)	300	W
Peak Reverse Gate Power Dissipation	P <sub>RGPM</sub>	30	kW
R.M.S Gate Current (Note 5)	I <sub>G</sub> (RMS)	84	A
Peak Reverse Gate Voltage (at Static)	V <sub>RGM</sub>	16	V
Operating Junction Temperature Range	T <sub>j</sub>	-40~125	°C
Storage Temperature Range	T <sub>stg</sub>	-40~150	°C
Mounting Force	—	38.2±5.9	kN

(Note 1) V<sub>GK</sub> = -2V(Note 2) V<sub>DM</sub> = 5500V, C<sub>S</sub> = 6  $\mu$ F, di<sub>GQ</sub> / dt = 50A /  $\mu$ s, V<sub>DS</sub> (T<sub>j</sub> = 25°C)  $\leq$  1400V, L<sub>S</sub>  $\leq$  0.2  $\mu$ H(Note 3) 50Hz Half Sine Waveform at T<sub>f</sub> = 75°C(Note 4) V<sub>D</sub> = 1/2 V<sub>DRM</sub>, I<sub>TM</sub> = 4000A, I<sub>GM</sub> = 25A

(Note 5) Ambient Temperature of coaxial gate-cathode lead = 90°C

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## ELECTRICAL CHARACTERISTICS

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Repetitive Peak Off State Current	$I_{DRM}$	$V_{DRM} = \text{Rated}$ , $V_{GK} = -2V$ , $T_j = 125^\circ C$	—	—	150	mA
Repetitive Peak Reverse Current	$I_{RRM}$	$V_{RRM} = \text{Rated}$ , $T_j = 125^\circ C$	—	—	10	mA
Repetitive Peak Reverse Gate Current	$I_{RGM}$	$V_{RGM} = 16V$ , $T_j = 125^\circ C$	—	—	10	mA
Peak On-State Voltage	$V_{TM}$	$I_{TM} = 3000A$ , $T_j = 125^\circ C$	—	—	4.5	V
Gate Trigger Voltage	$V_{GT}$	$V_D = 24V$ , $R_L = 0.1\Omega$	$T_j = -40^\circ C$	—	—	V
Gate Trigger Current	$I_{GT}$		$T_j = 25^\circ C$	—	1.50	V
Turn-On Delay Time	$t_d$		$T_j = -40^\circ C$	—	—	A
Turn-On Time	$t_{gt}$		$T_j = 25^\circ C$	—	4.0	A
Critical Rate of Rise of Off-State Voltage	$dv/dt$	$V_{DRM} = 2/3 \text{ RATED}$ , $T_j = 125^\circ C$ , $V_{GK} = -10V$	1250	—	—	V/ $\mu$ s
Storage Time	$t_s$	$IT_{GQ} = 4000A$ , $V_{DM} = 5500V$ , $V_D = 1/2 V_{DRM}$ , $diGQ/dt = 50A/\mu s$ , $C_S = 6\mu F$ , $R_S = 5\Omega$ , $T_j = 125^\circ C$	—	—	30	$\mu$ s
Gate Turn-Off Time	$t_{gq}$		—	—	32	$\mu$ s
Tail Time	$t_{tail}$		—	—	150	$\mu$ s
Gate Turn-Off Current	$I_{GQ}$		—	850	—	A
Thermal Resistance (Junction to Fin)	$R_{th(j-f)}$	DC	—	—	0.011	$^\circ C/W$

