

TOSHIBA**SG4000JX26**

TOSHIBA GATE TURN-OFF THYRISTOR LOW SNUBBER TYPE

SG4000JX26

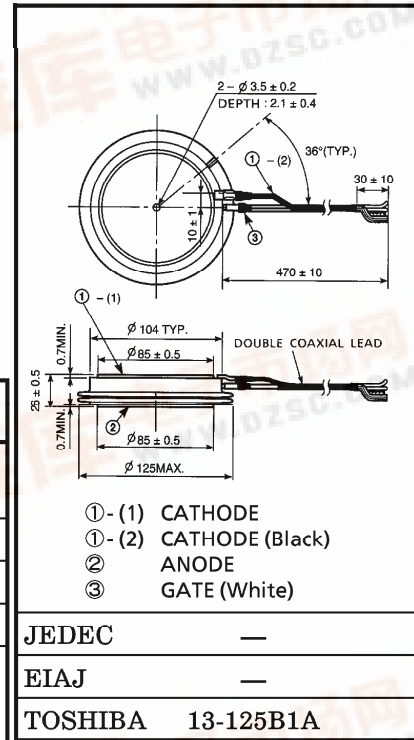
INVERTER APPLICATION

Unit in mm

- Repetitive Peak Off-State Voltage : $V_{DRM}=6000V$ (Note 1)
- R.M.S On-State Current : $I_T(RMS)=1600A$ ($T_f=75^\circ C$)
- Peak Turn-Off Current : $I_{TGQM}=4000A$
- Critical Rate of Rise of On-State Current : $di/dt=500A/\mu s$
- Critical Rate of Rise of Off-State Voltage : $dv/dt=1250V/\mu s$

MAXIMUM RATING

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



Weight : 1700g

(Note 1) $V_{GK} = -2V$ (Note 2) $V_{DM}=5500V$, $C_S=6\mu F$, $diGQ/dt=50A/\mu s$, $V_{DSP}(T_j=25^\circ C) \leq 1400V$, $L_S \leq 0.2\mu H$ (Note 3) 50Hz Half Sine Waveform at $T_f=75^\circ C$ (Note 4) $V_D=1/2V_{DRM}$, $I_{TM}=4000A$, $I_{GM}=25A$ (Note 5) Ambient Temperature of coaxial gate-cathode lead= $90^\circ C$

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ELECTRICAL CHARACTERISTICS

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Repetitive Peak Off State Current	I_{DRM}	$V_{\text{DRM}} = \text{Rated}$, $V_{\text{GK}} = -2\text{V}$, $T_j = 125^\circ\text{C}$	—	—	150	mA
Repetitive Peak Reverse Current	I_{RRM}	$V_{\text{RRM}} = \text{Rated}$, $T_j = 125^\circ\text{C}$	—	—	10	mA
Repetitive Peak Reverse Gate Current	I_{RGM}	$V_{\text{RGM}} = 16\text{V}$, $T_j = 125^\circ\text{C}$	—	—	10	mA
Peak On-State Voltage	V_{TM}	$I_{\text{TM}} = 3000\text{A}$, $T_j = 125^\circ\text{C}$	—	—	4.5	V
Gate Trigger Voltage	V_{GT}	$V_{\text{D}} = 24\text{V}$, $R_{\text{L}} = 0.1\Omega$	$T_j = -40^\circ\text{C}$	—	—	V
			$T_j = 25^\circ\text{C}$	—	1.50	V
Gate Trigger Current	I_{GT}		$T_j = -40^\circ\text{C}$	—	—	A
			$T_j = 25^\circ\text{C}$	—	4.0	A
Turn-On Delay Time	t_{d}	$V_{\text{D}} = 1/2V_{\text{DRM}}$, $I_{\text{TM}} = 4000\text{A}$, $di/dt = 500\text{A}/\mu\text{s}$, $I_{\text{GM}} = 25\text{A}$, $di_{\text{G}}/dt = 20\text{A}/\mu\text{s}$, $T_j = 25^\circ\text{C}$	—	—	3	μs
Turn-On Time	t_{gt}		—	—	10	μs
Critical Rate of Rise of Off-State Voltage	dv/dt	$V_{\text{DRM}} = 2/3\text{RATED}$, $T_j = 125^\circ\text{C}$, $V_{\text{GK}} = -10\text{V}$	1250	—	—	$\text{V}/\mu\text{s}$
Storage Time	t_{s}	$I_{\text{TGQ}} = 4000\text{A}$, $V_{\text{DM}} = 5500\text{V}$, $V_{\text{D}} = 1/2V_{\text{DRM}}$, $di_{\text{GQ}}/dt = 50\text{A}/\mu\text{s}$, $C_{\text{S}} = 6\mu\text{F}$, $R_{\text{S}} = 5\Omega$, $T_j = 125^\circ\text{C}$	—	—	30	μs
Gate Turn-Off Time	t_{gq}		—	—	32	μs
Tail Time	t_{tail}		—	—	150	μs
Gate Turn-Off Current	I_{GQ}		—	850	—	A
Thermal Resistance (Junction to Fin)	$R_{\text{th(j-f)}}$	DC	—	—	0.011	$^\circ\text{C}/\text{W}$

