

TOSHIBA GATE TURN-OFF THYRISTOR LOW SNUBBER TYPE

SG600GXH26

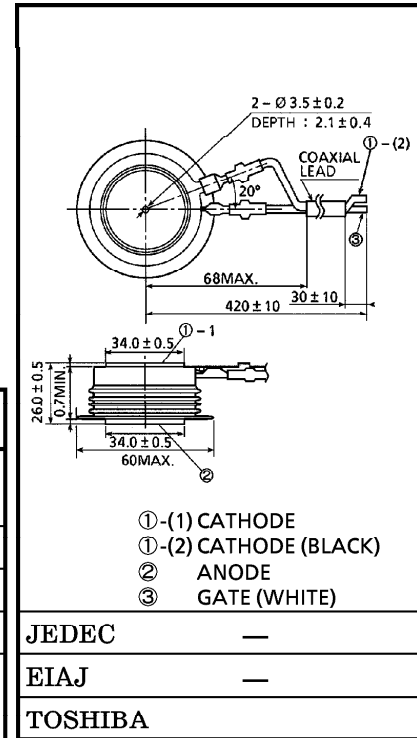
INVERTER APPLICATION

Unit in mm

- Repetitive Peak Off-State Voltage : $V_{DRM} = 4500V$
- R.M.S On-State Current : $I_T (RMS) = 300A$
- Peak Turn-Off Current : $I_{TGQM} = 600A$
- Critical Rate of Rise of On-State Current : $di / dt = 600A / \mu s$
- Critical Rate of Rise of Off-State Voltage : $dv / dt = 1200V / \mu s$

MAXIMUM RATINGS

CHARACTERISTIC	SYMBOL	RATING	UNIT
Repetitive Peak Off-state Voltage, (Note. 1)	V_{DRM}	4500	V
Repetitive Peak Reverse Voltage	V_{RRM}	16	V
Peak Turn-Off Current (Note. 2)	I_{TGQM}	600	A
R.M.S On-State Current (Note. 3)	$I_T (RMS)$	300	A
Peak One Cycle Surge On-State Current (non repetitive, 10ms width half sine waveform)	I_{TSM}	4000	A
Critical Rate Of Rise Of On-State Current (Note. 4)	di / dt	600	A / μs
Peak Gate Current	I_{GM}	280	A
Average Gate Power Dissipation	$P_G (AV)$	55	W
R.M.S Gate Current (Note. 5)	$I_G (RMS)$	35	A
Peak Reverse Gate Voltage (at Static)	V_{RGM}	16	V
Operating Junction Temperature Range	T_j	-40~125	°C
Storage Temperature Range	T_{stg}	-40~150	°C
Mounting Force	—	11.8±1.2	kN



Weight : 320g

Note. 1 $V_{GK} \leq -2V$

Note. 2 $V_{DM} \leq 4000V$, $C_s \geq 0.5\mu F$, $di_{GQ} / dt \geq 20A / \mu s$, $L_s \leq 0.2\mu H$ ($V_{DSP} \leq 650V$)

Note. 3 50Hz Half Sine Waveform at $T_f \leq 85^\circ C$

Note. 4 $V_D \leq 2250V$, $I_{GM} \geq 20A$ ($t_r \leq 1\mu s$)

Note. 5 Ambient Temperature of coaxial gate-cathode lead $\leq 90^\circ C$

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ELECTRICAL CHARACTERISTICS

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT	
Repetitive Peak Off-State Current	I_{DRM}	$V_{DRM} = 4500V$, $V_{GK} = -2V$, $T_j = 125^\circ C$	—	—	20	mA	
Repetitive Peak Reverse Current	I_{RRM}	$V_{RRM} = 16V$, $T_j = 125^\circ C$	—	—	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}	$I_{TM} = 600A$, $T_j = 125^\circ C$	—	—	4.0	V	
Gate Trigger Voltage	V_{GT}	$V_D = 24V$, $R_L = 0.1\Omega$	$T_j = -40^\circ C$	—	—	1.5	V
	$T_j = 25^\circ C$		—	—	1.0		
Gate Trigger Current	I_{GT}		$T_j = -40^\circ C$	—	—	4.5	A
	$T_j = 25^\circ C$		—	—	1.5		
Turn-On Delay Time	t_d	$V_D = 2250V$, $I_{TM} = 600A$, $di/dt = 600A/\mu s$, $I_{GM} = 20A$ ($t_r = 1\mu s$), $T_j = 25^\circ C$	—	—	3.0	μs	
Turn-On Time	t_{gt}		—	—	10.0	μs	
Critical Rate Of Rise Of Off-State Voltage	dv/dt	$V_{DRM} = 3000V$, $V_{GK} = -2V$, Exponential Rise, $T_j = 125^\circ C$	1200	—	—	$V/\mu s$	
Storage Time	t_s	$I_{TGQ} = 600A$, $V_D = 2250V$, $V_{DM} = 4000V$, $C_S = 0.5\mu F$, $T_j = 125^\circ C$, $di_{GQ}/dt = 20A/\mu s$, Off Squeeze Current $\geq 500mA$	—	—	15	μs	
Gate Turn-Off Time	t_{gq}		—	—	17	μs	
Gate Turn-Off Current	I_{GQ}		—	250	—	A	
Tail Time	t_{tail}		—	—	40	μs	
Thermal Resistance (Junction to Fin)	$R_{th(j-f)}$	DC	—	—	0.045	$^\circ C/W$	

