

(SG1200EX24)

INVERTER APPLICATION

- Repetitive Peak Off-State Voltage : $V_{DRM}=2500V$
- R.M.S On-State Current : $I_T(RMS)=500A$
- Peak Turn-Off Current : $I_{TGQM}=1200A$
- Critical Rate of Rise of On-State Current : $di/dt=250A/\mu s$
- Critical Rate of Rise of Off-State Voltage : $dv/dt=900V/\mu s$

MAXIMUM RATINGS

CHARACTERISTIC	SYMBOL	RATING	UNIT
Repetitive Peak Off-State Voltage (Note 1)	V_{DRM}	2500	V
Repetitive Peak Reverse Voltage	V_{RRM}	15	V
Peak Turn-Off Current (Note 2)	I_{TGQM}	1200	A
R.M.S On-State Current (Note 3)	$I_T(RMS)$	500	A
Peak One Cycle Surge On-State Current (Non Repetitive, 10ms Width Half Sine Waveform)	I_{TSM}	6500	A
Critical Rate of Rise of On-state Current (Note 4)	di/dt	250	A / μs
Peak Gate Current	I_{GM}	450	A
Average Gate Power Dissipation	$P_G(AV)$	80	W
R.M.S Gate Current (Note 5)	$I_G(RMS)$	42	A
Peak Reverse Gate Voltage (at Static)	V_{RGM}	15	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

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

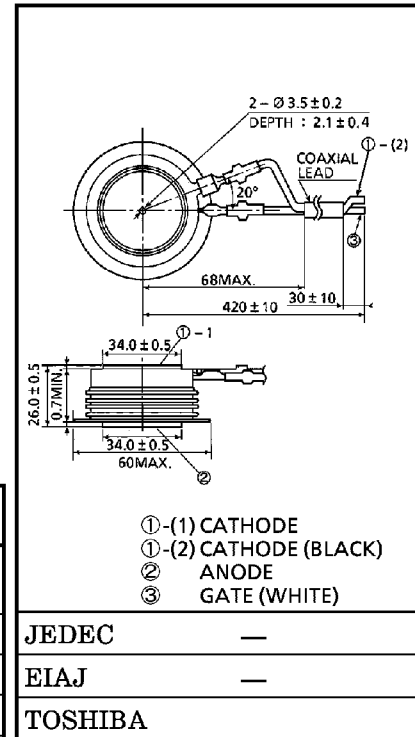
Note 2 : $V_{DM} \leq 2000V$, $C_S \geq 2.0\mu F$, $di_{GQ}/dt \geq 30A/\mu s$, $L_S \leq 0.2\mu H$ ($V_{DSP} \leq 600V$)

Note 3 : 50Hz Half Sine Waveform at $T_f \leq 82^\circ C$

Note 4 : $V_D \leq 1250V$, $I_{GM} \geq 18A$ ($t_r \leq 1\mu s$)

Note 5 : Ambient temperature of coaxial gate and cathode lead $\leq 90^\circ C$

Unit in mm



Weight : 320g

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ELECTRICAL CHARACTERISTICS

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Repetitive Peak Off-State Current	I_{DRM}	$V_{DRM} = 2500V$, $V_{GK} = -2V$, $T_j = 125^\circ C$	—	—	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}	$I_{TM} = 1000A$, $T_j = 125^\circ C$	—	—	2.6	V
Gate Trigger Voltage	V_{GT}	$V_D = 24V$, $R_L = 0.1\Omega$	$T_j = -40^\circ C$	—	—	V
	$T_j = 25^\circ C$		—	—	1.2	
Gate Trigger Current	I_{GT}		$T_j = -40^\circ C$	—	—	A
			$T_j = 25^\circ C$	—	—	
Turn-On Delay Time	t_d	$V_D = 1250V$, $I_{TM} = 1200A$, $di/dt = 250A/\mu s$, $I_{GM} = 18A$ ($t_r = 1\mu s$), $T_j = 25^\circ C$	—	—	2.0	μs
Turn-On Time	t_{gt}		—	—	8.0	μs
Critical Rate of Rise of Off-State Voltage	dv/dt	$V_{DRM} = 1700V$, $V_{GK} = -2V$, Exponential Rise, $T_j = 125^\circ C$	900	—	—	V/ μs
Storage Time	t_s	$I_{TGQ} = 1200A$, $V_D = 1250V$, $V_{DM} = 1700V$, $C_S = 2.0\mu F$, $T_j = 125^\circ C$, $di_{GQ}/dt = 30A/\mu s$, Off Squeeze Current $\geq 265mA$	—	—	18	μs
Gate Turn-Off Time	t_{gq}		—	—	20	μs
Gate Turn-Off Current	I_{GQ}		—	320	—	A
Tail Time	t_{tail}		—	—	51	μs
Thermal Resistance (Junction to Fin)	$R_{th(j-f)}$	DC	—	—	0.045	$^\circ C/W$

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