

Unit in mm

Inverter Application

- Repetitive Peak Off-State Voltage: $V_{DRM}=4500V, 3300V$
- R.M.S. On-State Current: $I_T (RMS)=1000A$
- Peak Turn-Off Current: $I_{TGQM}=2200A$
- Critical Rate of Rise of On-State Current: $di/dt=400A/\mu s$
- Critical Rate of Rise of Off-State Voltage: $dv/dt=1000V/\mu s$

Maximum Ratings

CHARACTERISTIC		SYMBOL	RATINGS	UNIT
Repetitive Peak Off-State Voltage (Note 1)	SG2200FXF24	V_{DRM}	3300	V
	SG2200GXH24		4500	
Repetitive Peak Reverse Voltage		V_{RRM}	16	V
Peak Turn-Off Current (Note 2)		I_{TGQM}	2200	A
R.M.S. On-State Current (Note 3)		$I_T (RMS)$	1000	A
Peak One Cycle Surge On-State Current (Non-Repetitive, 10ms-Width Half Sine Waveform)		I_{TSM}	16000	A
Critical Rate of Rise of On-State Current (Note 4)		di/dt	400	$A/\mu s$
Peak Forward Gate Current		I_{FGM}	100	A
Average Forward Gate Power Dissipation		$P_{FG (AV)}$	50	W
Average Reverse Gate Power Dissipation		$P_{RG (AV)}$	120	W
R.M.S. Gate Current (Note 5.)		$I_G (RMS)$	42	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		—	20.6±2.9	kN

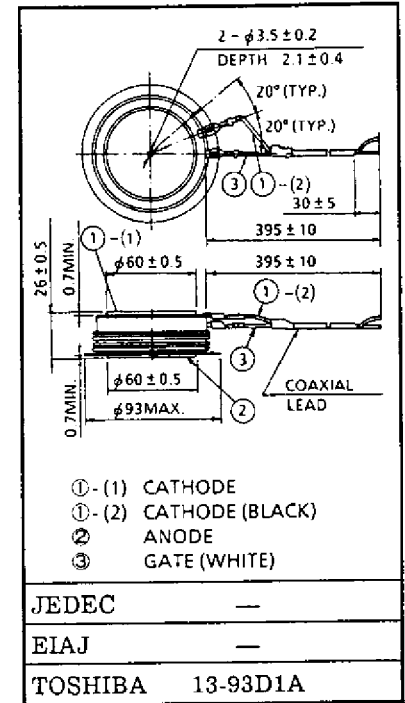
Note 1. $V_{GK}=-2V$

Note 2. $V_{DM}=V_{DRM}$, $C_S=4\mu F$, $R_S=5\Omega$, $di_{GQ}/dt=35A/\mu s$, $V_{DSP}\leq 650V$, $L_S\leq 0.3\mu$

Note 3. 50Hz Half Sine Waveform, $T_f=76^\circ C$

Note 4. $V_D=1/2 V_{DRM}$, $I_{GM}=25A$

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



Weight : 800g

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Electrical Characteristics

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MX.	UNIT	
Repetitive Peak Off-State Current	I_{DRM}	$V_{DRM} = \text{Rated}, V_{GK} = -2V, T_j = 125^\circ\text{C}$	–	–	100	mA	
Repetitive Peak Reverse Current	I_{RRM}	$V_{RRM} = \text{Rated}, T_j = 125^\circ\text{C}$	–	–	10	mA	
Repetitive Peak Reverse Gate Current	I_{RGM}	$V_{RGM} = 16V, T_j = 125^\circ\text{C}$	–	–	10	mA	
Peak On-State Voltage	V_{TM}	$I_{TM} = 2200A, T_j = 125^\circ\text{C}$	–	–	3.5	V	
Gate Trigger Current	V_{GT}	$V_D = 24V,$ $R_L = 0.1\Omega$	$T_j = -40^\circ\text{C}$	–	–	1.7	V
			$T_j = 25^\circ\text{C}$	–	–	1.2	
Gate Trigger Voltage	I_{GT}		$T_j = -40^\circ\text{C}$	–	–	7.5	A
			$T_j = 25^\circ\text{C}$	–	–	3.0	
Turn-On Delay Time	t_d	$V_D = 1/2V_{DRM},$ $di/dt = 400A/\mu s, I_{GM} = 25A,$ $T_j = 25^\circ\text{C}$	–	–	3	μs	
Turn-On Time	t_{gt}		–	–	10	μs	
Critical Rate of Rise of Off-State Voltage	dv/dt	$V_{DRM} = 2/3 \text{ Rated},$ Exponential Rise, $T_j = 125^\circ\text{C}, V_{GK} = -2V$	1000	–	–	$V/\mu s$	
Storage Time	t_s	$I_{TGQ} = 2200A, V_{DM} = V_{DRM},$ $V_D = 1/2V_{DRM}, di_{GQ}/dt = 35A/\mu s,$ $C_S = 4\mu F,$ $R_s = 5\Omega, T_j = 125^\circ\text{C}, L_S \leq 0.3\mu H$	–	–	23	μs	
Gate Turn-Off Time	t_{gq}		–	–	25	μs	
Gate Turn-Off Current	I_{GQ}		–	100	–	μs	
Tail Time	t_{tail}		–	520	–	A	
Thermal Resistance (Junction to Fin)	$R_{th(j-f)}$		DC	–	–	0.020	$^\circ\text{C/W}$

