

SG1200EX21

GATE TURN-OFF THYRISTOR SILICON DIFFUSED TYPE

CHOPPER, INVERTER APPLICATION.

FEATURES:

- . Repetitive Peak Off-State Voltage : $V_{DRM}=2500V$
- . Repetitive Peak Reverse Voltage : $V_{RRM}=500V$
- . R.M.S On-State Current : $I_T(RMS)=700A$
- . 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
: $dv/dt=500V/\mu s$
- . Flat Package

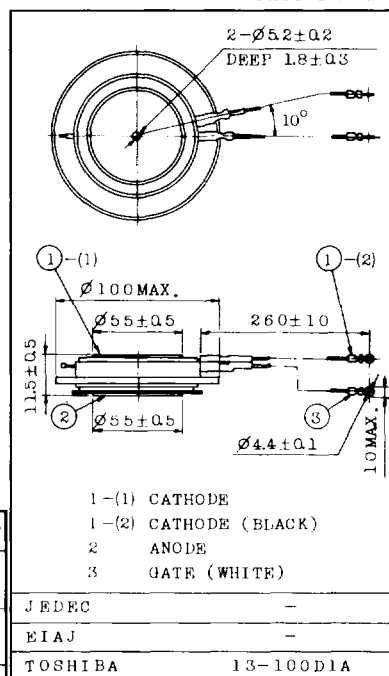
MAXIMUM RATINGS

CHARACTERISTIC	SYMBOL	RATING	UNIT
Repetitive Peak Off-State Voltage	V_{DRM}	2500	V
Repetitive Peak Reverse Voltage	V_{RRM}	500	V
Peak Turn-Off Current (Note 2)	I_{TGQM}	1200	A
R.M.S On-State Current	$I_T(RMS)$	700	A
Peak One Cycle Surge On-State Current (Non-Repetitive)	I_{TSM}	12000(50Hz)	A
		13200(60Hz)	
Critical Rate of Rise of On-State Current (Note 1)	di/dt	250	A/ μs
Peak Forward Gate Power Dissipation	P_{FGM}	20	W
Peak Reverse Gate Power Dissipation	P_{RGM}	10	kW
Average Forward Gate Power Dissipation	$P_G(AV)$	4	W
Peak Forward Gate Current	I_{FGM}	20	A
Peak Reverse Gate Voltage	V_{RGM}	12	V
Storage Temperature Range	T_{stg}	-40 ~ 115	°C
Operating Junction Temperature Range	T_j	-40 ~ 115	°C
Mounting Force	-	2000±200	kg

Note 1 : $V_D=1/2$ Rated, Gate Supply ($I_G=20A$, $t_r \leq 1\mu s$), $f=50Hz$

Note 2 : Snubber $C_S=2\mu F$, $R_S=20\Omega$

Unit in mm



ELECTRICAL CHARACTERISTICS

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Repetitive Peak Off-State Current	I_{DRM}	$V_{\text{DRM}}, V_{\text{RRM}} = \text{Rated}$ $R_{\text{GK}} = 20\Omega, T_{\text{J}} = 115^{\circ}\text{C}$	-	-	50	mA
Repetitive Peak Reverse Current	I_{RRM}		-	-	50	mA
Peak On-State Voltage	V_{TM}	$I_{\text{TM}} = 1200\text{A}, T_{\text{c}} = 25^{\circ}\text{C}$	-	-	2.5	V
Gate Trigger Voltage	V_{GT}	$V_{\text{D}} = 12\text{V}$ $R_{\text{L}} = 0.5\Omega$	$T_{\text{c}} = -40^{\circ}\text{C}$	1.0	-	V
			$T_{\text{c}} = 25^{\circ}\text{C}$	0.7	1.5	
Gate Trigger Current	I_{GT}	$R_{\text{L}} = 0.5\Omega$	$T_{\text{c}} = -40^{\circ}\text{C}$	5.0	-	A
			$T_{\text{c}} = 25^{\circ}\text{C}$	0.5	1.0	
Gate Non-Trigger Voltage	V_{GD}	$V_{\text{D}} = 1/2 \text{ Rated}, T_{\text{c}} = 115^{\circ}\text{C}$	0.3	-	-	V
Gate Non-Trigger Current	I_{GD}		10	-	-	mA
Delay Time	t_{d}	$V_{\text{D}} = 1/2 \text{ Rated}, T_{\text{c}} = 25^{\circ}\text{C}$ Gate Supply ($I_{\text{G}} = 10\text{A}, t_{\text{r}} \leq 2\mu\text{s}$)	-	-	6	μs
Gate Turn-On Time	t_{gt}		-	-	12	μs
Critical Rate of Rise of Off-State Voltage	dv/dt	$V_{\text{DRM}} = 2/3 \text{ Rated}$ $T_{\text{J}} = 115^{\circ}\text{C}, R_{\text{GK}} = 20\Omega$ $V_{\text{G}} = -4\text{V}$ Exponential Rise	500	-	-	$\text{V}/\mu\text{s}$
Holding Current	I_{H}	$T_{\text{c}} = 25^{\circ}\text{C}, R_{\text{GK}} = 20\Omega, R_{\text{L}} = 0.5\Omega$	-	10	-	A
Gate Turn-Off Voltage	V_{GQ}	$I_{\text{T}} = 1200\text{A}$ $V_{\text{DRM}} = 2/3 \text{ Rated}$ $dv/dt = 200\text{V}/\mu\text{s}, T_{\text{c}} = 110^{\circ}\text{C}$	-	35	-	V
Gate Turn-Off Current	I_{GQ}		-	300	-	A
Storage Time	t_{s}	$dI_{\text{RG}}/dt = 30\text{A}/\mu\text{s}$ $I_{\text{T}} = 1200\text{A}, I_{\text{RG}} = 350\text{A}$ $dv/dt = 200\text{V}/\mu\text{s}, T_{\text{c}} = 110^{\circ}\text{C}$	-	-	18	μs
Gate Turn-Off Time	t_{gq}	$V_{\text{DRM}} = 2/3 \text{ Rated}$	-	-	22	μs
Thermal Resistance	$R_{\text{th}}(\text{j-f})$	Junction to Fin	-	-	0.03	$^{\circ}\text{C}/\text{W}$

