

GATE TURN-OFF THYRISTOR
SILICON DIFFUSED TYPE

SG2000EX21(VRRM)

TENTATIVE DATA

CHOPPER, INVERTER APPLICATION.

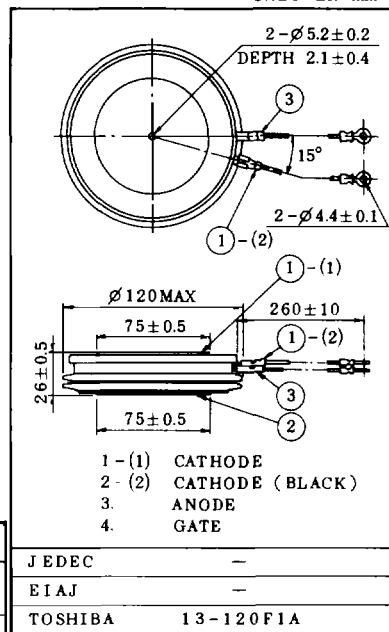
- . Repetitive Peak Off-State Voltage : $V_{DRM}=2500V$
- . Repetitive Peak Reverse Voltage : $V_{RRM}=2000V$
- . R.M.S On-State Current : $I_T(RMS)=800A$
- . Peak Turn-Off Current : $I_{TGQM}=2000A$
- . Critical Rate of Rise of On-State Current
: $di/dt=250A/\mu s$
- . Critical Rate of Rise of Off-State 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}	2000	V
Peak Turn-Off Current (Note 2)	I_{TGQM}	2000	A
R.M.S On-State Current	$I_T(RMS)$	800	A
Peak One Cycle Surge On-State Current (Non-Repetitive)	I_{TSM}	18000(50Hz) 20000(60Hz)	A
Critical Rate of Rise of On-State Current (Note 1)	di/dt	250	A/ μs
Peak Forward Gate Power Dissipation	P_{FGM}	50	W
Peak Reverse Gate Power Dissipation	P_{RGM}	10	kW
Average Forward Gate Power Dissipation	$P_G(AV)$	14	W
Peak Forward Gate Current	I_{FGM}	50	A
Peak Reverse Gate Voltage	V_{RGM}	15	V
Storage Temperature Range	T_{stg}	-40~115	°C
Operating Junction Temperature Range	T_j	-40~115	°C
Mounting Force	-	3000 $\pm$ 200	kg

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

Unit in mm



Weight : 1500g

ELECTRICAL CHARACTERISTICS

CHARACTERISTIC	SYMBOL	TEST CONDITION		MIN.	TYP.	MAX.	UNIT
Repetitive Peak Off-State Current	I_{DRM}	V_{DRM}, V_{RRM} =Rated $R_{GK}=10\Omega$, $T_j=115^{\circ}\text{C}$		-	-	80	mA
Repetitive Peak Reverse Current	I_{RRM}			-	-	80	mA
Peak On-State Voltage	V_{TM}	$I_{TM}=2000\text{A}$, $T_c=25^{\circ}\text{C}$		-	-	2.75	V
Gate Trigger Voltage	V_{GT}	$V_D=24\text{V}$ $R_L=0.5\Omega$	$T_c=-40^{\circ}\text{C}$	-	-	2.5	V
			$T_c=25^{\circ}\text{C}$	-	0.7	1.5	
Gate Trigger Current	I_{GT}		$T_c=-40^{\circ}\text{C}$	-	-	3.0	A
			$T_c=25^{\circ}\text{C}$	-	0.8	1.5	
Gate Non-Trigger Voltage	V_{GD}	$V_D=1/2$ Rated, $T_c=115^{\circ}\text{C}$		0.3	-	-	V
Gate Non-Trigger Current	I_{GD}			10	-	-	mA
Delay Time	t_d	$V_D=1/2$ Rated, $T_c=25^{\circ}\text{C}$ Gate Supply		-	4	8	μs
Gate Turn-On Time	t_{gt}	$(I_G=20\text{A}, t_r \leq 1\mu\text{s})$		-	-	15	μs
Critical Rate of Rise of Off-Stage Voltage	dv/dt	$V_{DRM}=2/3$ Rated, $V_G=-4\text{V}$ $T_j=115^{\circ}\text{C}$, $R_{GK}=10\Omega$ Exponential Rise		500	-	-	$\text{V}/\mu\text{s}$
Holding Current	I_H	$T_c=25^{\circ}\text{C}$, $R_{GK}=10\Omega$, $R_L=0.5\Omega$		-	40	-	A
Gate Turn-Off Voltage	V_{GQ}	$I_T=2000\text{A}$ $V_{DRM}=2/3$ Rated $T_c=110^{\circ}\text{C}$		-	35	-	V
Gate Turn-Off Current	I_{GQ}			-	400	-	A
Storage Time	t_s	$di_{RG}/dt=40\text{A}/\mu\text{s}$ $I_T=2000\text{A}$, $I_{RG}=400\text{A}$ $T_c=110^{\circ}\text{C}$		-	-	21	μs
Gate Turn-Off Time	t_{gq}	$V_{DRM}=2/3$ Rated		-	-	23	μs
Thermal Resistance	$R_{th(j-f)}$	Junction to Fin		-	-	0.02	$^{\circ}\text{C}/\text{W}$

Note 2

