

THYRISTOR
SILICON DIFFUSED TYPE

SF1500GX21

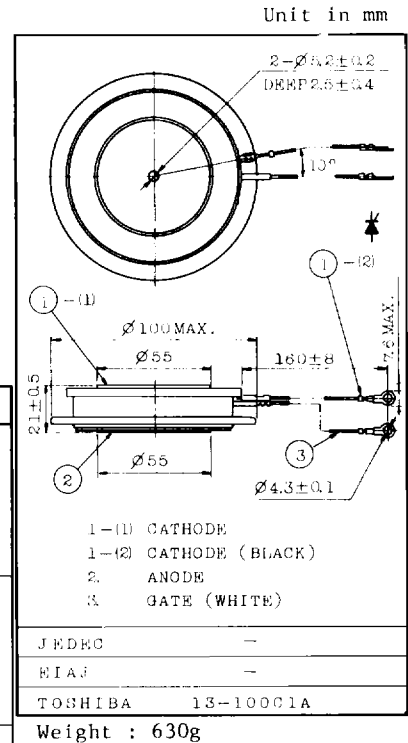
HIGH POWER CONTROL APPLICATIONS.

- . Repetitive Peak Off-State Voltage : V_{DRM} } = 400 ~ 1200V
- . Repetitive Peak Reverse Voltage : V_{RRM}
- . Average On-State Current : $I_T(AV)=1500A$
- . Critical Rate of Rise of On-State Current : $di/dt=200A/\mu s$
- . 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 and Repetitive Peak Reverse Voltage	SF1500G27	400	V
	SF1500J27	600	
	SF1500L27	800	
	SF1500Q27	1200	
Non-Repetitive Peak Reverse Voltage (Non-Repetitive $\leq 5ms$, $T_j=0 \sim 125^\circ C$)	SF1500G27	500	V
	SF1500J27	720	
	SF1500L27	960	
	SF1500Q27	1350	
R.M.S On-State Current	$I_{T(RMS)}$	2355	A
Average On-State Current $T_f=62^\circ C$	$I_T(AV)$	1500	A
Peak One Cycle Surge On-State Current (Non-Repetitive)	I_{TSM}	30000(50Hz)	A
		33000(60Hz)	
I^2t Limit Value	I^2t	4500×10^3	A^2s
Critical Rate of Rise of On-State Current (Note)	di/dt	200	$A/\mu s$
Peak Gate Power Dissipation	P_{GM}	30	W
Average Gate Power Dissipation	$P_{G(AV)}$	4	W
Peak Forward Gate Current	I_{GM}	6	A
Peak Forward Gate Voltage	V_{FGM}	20	V
Peak Reverse Gate Voltage	V_{RGM}	5	V
Junction Temperature	T_j	$-40 \sim 125$	$^\circ C$
Storage Temperature Range	T_{stg}	$-40 \sim 125$	$^\circ C$
Mounting Force	-	2000 ± 200	kg

Note : $V_{\eta}=1/2$ Rated, $T_c=120^\circ C$, Gate Supply ($V_G=15V$, $R_G=8\Omega$, $t_r \leq 1\mu s$)



ELECTRICAL CHARACTERISTICS

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	MAX.	UNIT
Repetitive Peak Off-State Current and Repetitive Peak Reverse Current	I_{DRM} I_{RRM}	$V_{DRM}=V_{RRM}=\text{Rated}$, $T_j=125^\circ\text{C}$	-	120	mA
Peak On-State Voltage	V_{TM}	$I_{TM}=5000\text{A}$, $T_c=25^\circ\text{C}$	-	2.4	V
Gate Trigger Voltage	V_{GT}	$V_D=12\text{V}$, $R_L=6\Omega$	$T_c=-40^\circ\text{C}$	4.5	V
			$T_c=25^\circ\text{C}$	3.5	
Gate Trigger Current	I_{GT}		$T_c=-40^\circ\text{C}$	600	mA
			$T_c=25^\circ\text{C}$	400	
Gate Non-Trigger Voltage	V_{GD}	$V_D=1/2 \text{ Rated}$, $T_c=125^\circ\text{C}$	0.2	-	V
Gate Non-Trigger Current	I_{GD}		5	-	mA
Delay Time	t_d	$V_D=0.5 \text{ Rated}$, $T_c=25^\circ\text{C}$	-	5	μs
Gate Turn-On Time	t_{gt}	Gate Supply ($V_G=15\text{V}$, $R_G=8\Omega$, $t_r \leq 1\mu\text{s}$)	-	10	μs
Turn-Off Time	t_q	$I_T=1200\text{A}$, $V_R \leq 200\text{V}$, $dv/dt=25\text{V}/\mu\text{s}$, $T_c=115^\circ\text{C}$, $V_{DRM}=1/2 \text{ Rated}$	-	400	μs
Holding Current	I_H	$T_c=25^\circ\text{C}$, $R_L=6\Omega$	-	300	mA
Critical Rate of Rise of Off-State Voltage	dv/dt	$V_{DRM}=1/2 \text{ Rated}$, $T_j=125^\circ\text{C}$ Gate Open Exponential Rise	1500	-	$\text{V}/\mu\text{s}$
Thermal Resistance	$R_{th(j-f)}$	Junction to Fin	-	0.015	$^\circ\text{C}/\text{W}$

