

THYRISTOR
SILICON DIFFUSED TYPE

SF1500EX24

HIGH POWER CONTROL APPLICATIONS.

FEATURES:

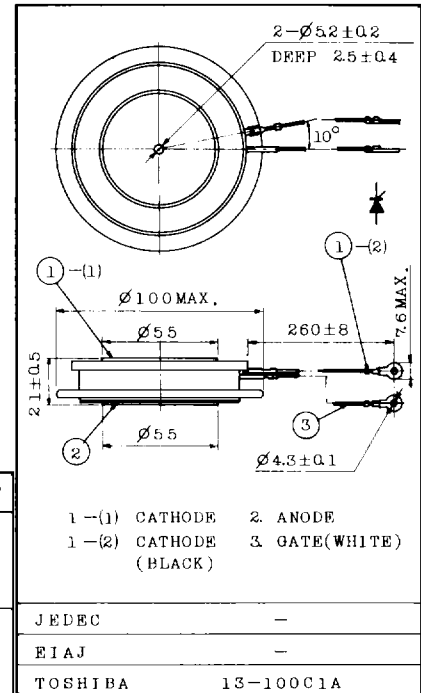
- . Repetitive Peak Off-State Voltage : V_{DRM}
Repetitive Peak Reverse Voltage : V_{RRM} } =2500V
- . Average On-State Current : $I_{T(AV)}=1500A$
- . Turn-Off Time : $t_q=400\mu s$ (Max.)
- . Critical Rate of Rise of On-State Current : $di/dt=200A/\mu s$
- . Critical Rate of Rise of Off-State Voltage : $dv/dt=500V/\mu s$
- . Flat Package

MAXIMUM RATINGS

CHARACTERISTIC	SYMBOL	RATING	UNIT
Repetitive Peak Off-State Voltage and Repetitive Peak Reverse Voltage	V_{DRM}	2500	V
	V_{RRM}		
Non-Repetitive Peak Reverse Voltage (Non-Repetitive $<5ms$, $T_j=0 \sim 125^\circ C$)	V_{RSM}	2750	V
R.M.S On-State Current	$I_{T(RMS)}$	2355	A
Average On-State Current	$I_{T(AV)}$	1500	A
Peak One Cycle Surge On-State Current (Non-Repetitive)	I_{TSM}	30000(50Hz)	A
		33000(60Hz)	
I^2t Limit Value	I^2t	3125×10^3	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: $V_D=1/2$ Rated, $T_c=120^\circ C$, Gate Supply ($V_G=15V$, $R_G=8\Omega$, $t_r \leq 1\mu s$)

Unit in mm

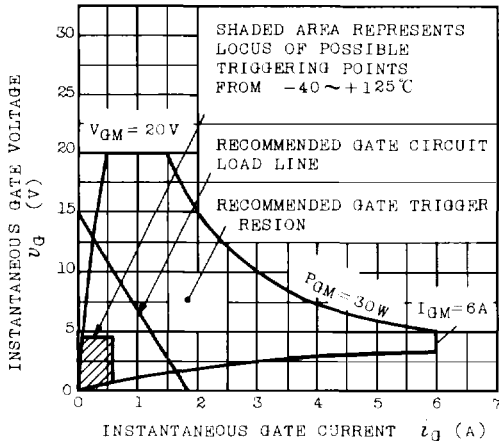


Weight : 630g

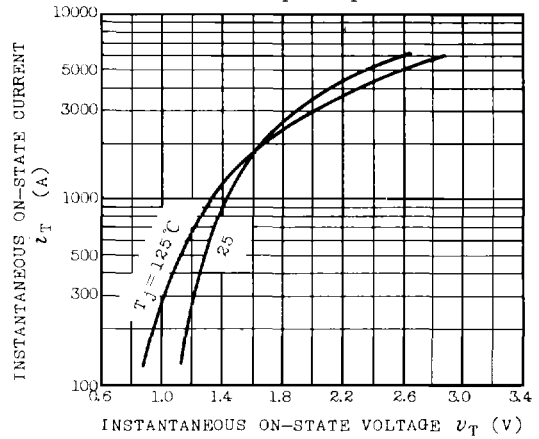
ELECTRICAL CHARACTERISTICS

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}	$I_{TM}=2500\text{A}$, $T_c=25^{\circ}\text{C}$		-	1.75	V
Gate Trigger Voltage	V_{GT}	$V_D=6\text{V}$, $R_L=6\Omega$	$T_c=-40^{\circ}\text{C}$	-	4.5	V
			$T_c=25^{\circ}\text{C}$	-	3.5	
Gate Trigger Current	I_{GT}		$T_c=-40^{\circ}\text{C}$	-	600	mA
			$T_c=25^{\circ}\text{C}$	-	450	
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	$V_D=0.5 \text{ Rated}$, $T_c=25^{\circ}\text{C}$ Gate Supply ($V_G=15\text{V}$, $R_G=8\Omega$, $t_r \leq 1\mu\text{s}$)		-	5	μs
Gate Turn-On Time	t_{gt}			-	10	μs
Turn-Off Time	t_q	$I_T=1200\text{A}$, $V_R \geq 200\text{V}$, $dv/dt=25\text{V}/\mu\text{s}$ $T_c=115^{\circ}\text{C}$, $V_{DRM}=1/2 \text{ Rated}$		-	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	$V_{DRM}=2/3 \text{ Rated}$, $T_j=125^{\circ}\text{C}$ Gate Open Exponential Rise		500	-	$\text{V}/\mu\text{s}$
Thermal Resistance	$R_{th(j-f)}$	Junction to Fin		-	0.025	$^{\circ}\text{C}/\text{W}$

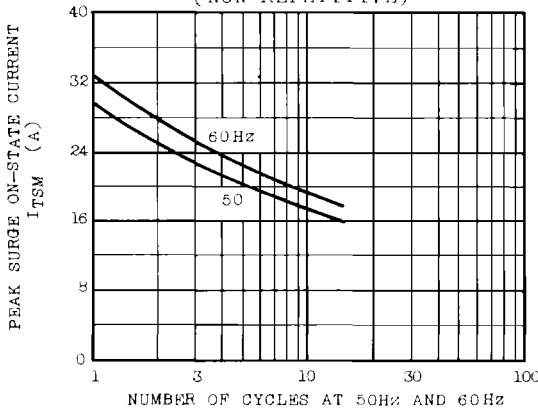
GATE TRIGGER CHARACTERISTIC



$i_T - v_T$



SURGE ON-STATE CURRENT (NON-REPETITIVE)



$P_T(AV) - I_T(AV)$

