

SH200(D,F,G,J,L)21A

THYRISTOR
SILICON DIFFUSED TYPE

HIGH SPEED APPLICATIONS.

FEATURES:

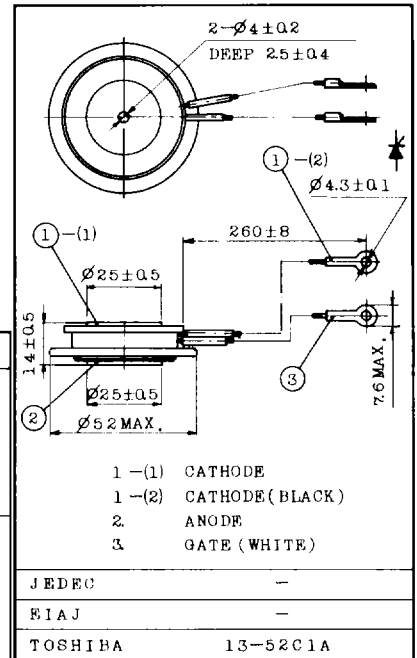
- Repetitive Peak Off-State Voltage : V_{DRM} } = 200 ~ 800V
- Repetitive Peak Reverse Voltage : V_{RRM} }
- Average On-State Current : $I_T(AV)$ = 200A
- Turn-Off Time : t_q = 15 μ s (Max.)
- Critical Rate of Rise of On-State Current : di/dt = 200A/ μ s
- Critical Rate of Rise of Off-State Voltage : dv/dt = 200V/ μ s
- Flat Package

MAXIMUM RATINGS

CHARACTERISTIC	SYMBOL	RATING	UNIT
Repetitive Peak Off-State Voltage and Repetitive Peak Reverse Voltage	SH200D21A SH200F21A	200	V
		300	
	SH200G21A SH200J21A SH200L21A	400	
		600	
		800	
Non-Repetitive Peak Reverse Voltage (Non-Repetitive < 5ms, $T_j \sim 125^\circ\text{C}$)	SH200D21A SH200F21A	300	V
		400	
	SH200G21A SH200J21A SH200L21A	500	
		720	
		960	
R.M.S On-State Current	$I_T(RMS)$	314	A
Average On-State Current (Half Sine Waveform $T_f=80^\circ\text{C}$)	$I_T(AV)$	200	A
Peak One Cycle Surge On-State Current (Non-Repetitive)	I_{TSM}	4000(50Hz)	A
		4400(60Hz)	
I^2t Limit Value	I^2t	80×10^3	A ² s
Critical Rate of Rise of On-State Current (Note 1)	di/dt	200	A/ μ s
Peak Gate Power Dissipation	P_{GM}	16	W
Average Gate Power Dissipation	$P_{G(AV)}$	3	W
Peak Forward Gate Current	I_{GM}	4	A
Peak Forward Gate Voltage	V_{FGM}	16	V
Peak Reverse Gate Voltage	V_{RGM}	5	V
Junction Temperature	T_j	-40 ~ 125	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-40 ~ 125	$^\circ\text{C}$
Mounting Force (Note 2)	-	600 ~ 800	kg

Note 1 : V_D =Rated, $T_c=120^\circ\text{C}$, Gate Supply ($V_G=15\text{V}$, $R_G=8\Omega$, $t_r \leq 1\mu\text{s}$)
 2 : Recommended 700 \pm 50kg

Unit in mm



Weight : 82g

ELECTRICAL CHARACTERISTICS

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	MAX.	UNIT	
Repetitive Peak Off-State Current and Repetitive Peak Reverse Current	I_{DRM} I_{RRM}	$V_{DRM}=V_{RRM}=\text{Rated}$, $T_j=125^\circ\text{C}$	-	30	mA	
Peak On-State Voltage	V_{TM}	$I_{TM}=630\text{A}$, $T_c=25^\circ\text{C}$	-	1.85	V	
Gate Trigger Voltage	V_{GT}	$V_D=6\text{V}$, $R_L=6\Omega$	$T_c=-40^\circ\text{C}$	-	4.0	V
			$T_c=25^\circ\text{C}$	-	3.0	
Gate Trigger Current	I_{GT}		$T_c=-40^\circ\text{C}$	-	300	mA
			$T_c=25^\circ\text{C}$	-	150	
Gate Non-Trigger Voltage	V_{GD}	$V_D=\text{Rated}$, $T_c=125^\circ\text{C}$	0.15	-	V	
Gate Non-Trigger Current	I_{GD}		1.5	-	mA	
Delay Time	t_d	$V_D=0.5 \text{ Rated}$, $T_c=25^\circ\text{C}$ Gate Supply ($V_G=15\text{V}$, $R_G=8\Omega$, $t_r \leq 1\mu\text{s}$)	-	4	μs	
Gate Turn-On Time	t_{gt}		-	6	μs	
Turn-Off Time	t_q	$I_{TM}=400\text{A}$, $V_R \geq 50\text{V}$ $di/dt=20\text{V}/\mu\text{s}$, $T_c=120^\circ\text{C}$ $V_{DRM}=\text{Rated}$	-	15	μs	
Holding Current	I_H	$T_c=25^\circ\text{C}$, $R_L=6\Omega$	-	200	mA	
Critical Rate of Rise of Off-State Voltage	dv/dt	$V_{DRM}=\text{Rated}$, $T_j=125^\circ\text{C}$ Gate Open, Exponential Rise	200	-	$\text{V}/\mu\text{s}$	
Thermal Resistance	$R_{th(j-f)}$	Junction to Fin	-	0.1	$^\circ\text{C}/\text{W}$	

