

Silicon Diffused Type
Thyristor

SF300 (L,N,Q,R,U)13

HIGH POWER CONTROL APPLICATIONS.

FEATURES:

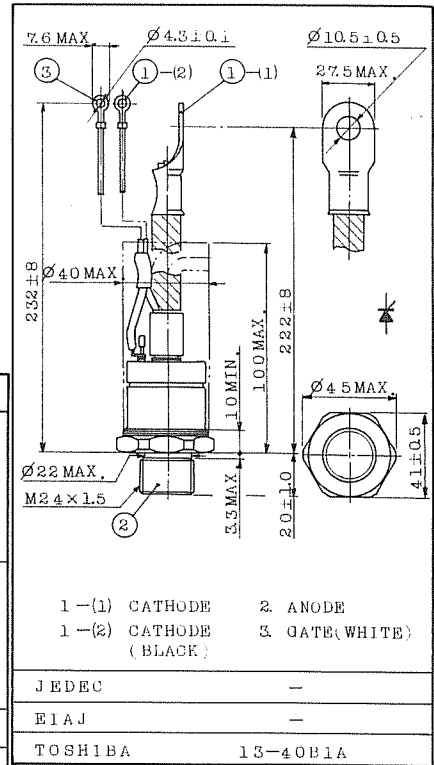
- Repetitive Peak Off-State Voltage : V_{DRM} } = 800 ~ 1600V
- Repetitive Peak Reverse Voltage : V_{RRM}
- Average On-State Current : $I_{T(AV)}=300A$
- Turn-Off Time : $t_q=150\mu s$ (Typ.)
- Critical Rate of Rise of On-State Current : $di/dt=100A/\mu s$
- Critical Rate of Rise Off-State Voltage : $dv/dt=200V/\mu s$

MAXIMUM RATINGS

CHARACTERISTIC	SYMBOL	RATING	UNIT
Repetitive Peak Off-State Voltage and Repetitive Peak Reverse Voltage	SF300L13	800	V
	SF300N13	1000	
	SF300Q13	1200	
	SF300R13	1300	
	SF300U13	1600	
Non-Repetitive Peak Reverse Voltage (Non-Repetitive <5ms, $T_j=0 \sim 125^\circ C$)	SF300L13	960	V
	SF300N13	1200	
	SF300Q13	1450	
	SF300R13	1500	
	SF300U13	1850	
R.M.S On-State Current	$I_{T(RMS)}$	470	A
Average On-State Current (Half Sine Waveform $T_c=61^\circ C$)	$I_{T(AV)}$	300	A
Peak One Cycle Surge On-State Current (Non-Repetitive)	I_{TSM}	6000(50Hz)	A
		6600(60Hz)	
I^2t Limit Value	I^2t	180×10^3	A^2s
Critical Rate of Rise of On-State Current (Note)	di/dt	100	$A/\mu s$
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	$-40 \sim 125$	$^\circ C$
Storage Temperature Range	T_{stg}	$-40 \sim 125$	$^\circ C$
Stud Torque	-	610	$kg \cdot cm$

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 : 493g

ELECTRICAL CHARACTERISTICS

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Repetitive Peak Off-State Current and Repetitive Peak Reverse Current	I_{DRM} I_{RRM}	$V_{DRM}=V_{RRM}=\text{Rated}$, $T_j=125^\circ\text{C}$	-	-	20	mA
Peak On-State Voltage	V_{TM}	$I_{TM}=1000\text{A}$, $T_c=25^\circ\text{C}$	-	-	1.65	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}		$T_c=-40^\circ\text{C}$	-	400	mA
			$T_c=25^\circ\text{C}$	-	260	
Gate Non-Trigger Voltage	V_{GD}	$V_D=1/2 \text{ Rated}$, $T_c=125^\circ\text{C}$	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	$I_T=600\text{A}$, $V_R \geq 50\text{V}$ $dv/dt=20\text{V}/\mu\text{s}$, $T_c=120^\circ\text{C}$ $V_{DRM}=1/2 \text{ Rated}$	-	150	-	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	200	-	-	$\text{V}/\mu\text{s}$
Thermal Resistance	$R_{th(j-c)}$	Junction to Case	-	-	0.11	$^\circ\text{C}/\text{W}$

