

TOSHIBA

SF300HX32

TOSHIBA THYRISTOR SILICON DIFFUSED TYPE

SF300HX32

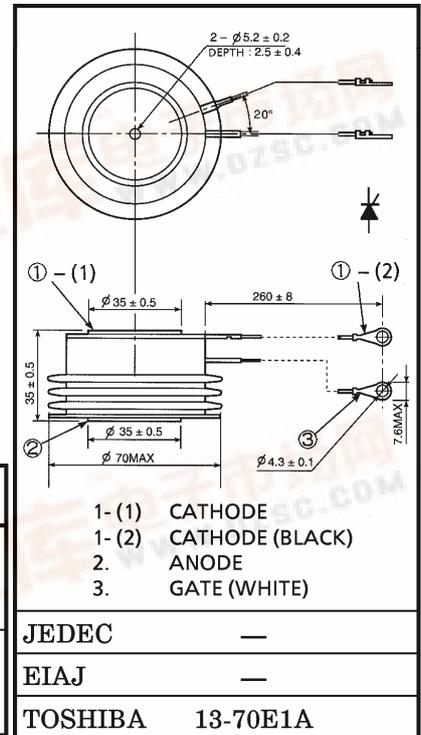
HIGH POWER CONTROL APPLICATIONS

- Repetitive Peak Off-State Voltage : V_{DRM}
- Repetitive Peak Reverse Voltage : V_{RRM} } = 5000V
- Average On-State Current : $I_R(AV) = 300A$
- Turn-Off Time : $t_q = 400\mu s$ (Max.)
- Critical Rate of Rise of On-State Current : $di/dt = 100A/\mu s$
- 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} V_{RRM}	5000	V
Non-Repetitive Peak Reverse Voltage (Non-Repetitive < 5ms, $T_j = 0 \sim 125^\circ C$)	V_{RSM}	5000	V
R.M.S On-State Current	$I_T(RMS)$	470	A
Average On-State Current	$I_T(AV)$	300	A
Peak One Cycle Surge On-State Current (Non-Repetitive)	I_{TSM}	6600 (50Hz) 7200 (60Hz)	A
I^2t Limit Value	I^2t	2.1×10^5	A^2s
Critical Rate of Rise of On-State Current (Note)	di/dt	100	$A/\mu s$
Peak Gate Power Dissipation	P_{GM}	20	W
Average Gate Power Dissipation	$P_G(AV)$	4	W
Peak Forward Gate Current	I_{GM}	4	A
Peak Forward Gate Voltage	V_{FGM}	20	V
Peak Reverse Gate Voltage	V_{RGM}	5	V
Junction Temperature	T_j	-40~125	$^\circ C$
Storage Temperature Range	T_{stg}	-40~125	$^\circ C$
Mounting Force	—	14.7 ± 1.5	kN

Unit in mm



Weight : 480g

Note : $V_D = 2500V$, $f = 50Hz$, $T_j = 120^\circ C$, Gate Supply ($V_G = 15V$, $R_G = 8\Omega$, $t_r \leq 1\mu s$)

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ELECTRICAL CHARACTERISTICS

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	MAX.	UNIT	
Repetitive Peak Off-State Current and Repetitive Peak Reverse Current	I_{DRM} I_{RRM}	$V_{DRM} = V_{RRM} = 5000V$, $T_j = 125^\circ C$	—	50	mA	
Peak On-State Voltage	V_{TM}	$I_{TM} = 1000A$, $T_j = 25^\circ C$	—	2.35	V	
Gate Trigger Voltage	V_{GT}	$V_D = 6V$, $R_L = 6\Omega$	$T_j = -40^\circ C$	—	4.5	
			$T_j = 25^\circ C$	0.6	2.5	V
Gate Trigger Current	I_{GT}	$V_D = 6V$, $R_L = 6\Omega$	$T_j = -40^\circ C$	—	400	
			$T_j = 25^\circ C$	15	250	mA
Gate Non-Trigger Voltage	V_{GD}	$V_D = 2500V$, $T_j = 125^\circ C$		0.2	—	V
Gate Non-Trigger Current	I_{GD}			5	—	mA
Delay Time	t_d	$V_D = 2500V$, $T_j = 25^\circ C$ Gate Supply	—	4	μs	
Gate Turn-On Time	t_{gt}	$(V_G = 15V, R_G = 8\Omega, t_r \leq 1\mu s)$	—	6	μs	
Turn-Off Time	t_q	$I_T = 600A$, $V_R \geq 50V$ $dv/dt = 20V/\mu s$, $T_j = 120^\circ C$ $V_{DRM} = 2500V$	—	400	μs	
Holding Current	I_H	$T_j = 25^\circ C$, $R_L = 6\Omega$	—	300	mA	
Critical Rate of Rise of Off-State Voltage	dv/dt	$V_{DRM} = 3300V$, $T_j = 125^\circ C$ Gate Open Exponential Rise	500	—	$V/\mu s$	
Thermal Resistance	$R_{th(j-f)}$	Junction to Fin	—	0.05	$^\circ C/W$	

