

TENTATIVE
(UNDER DEVELOPMENT)

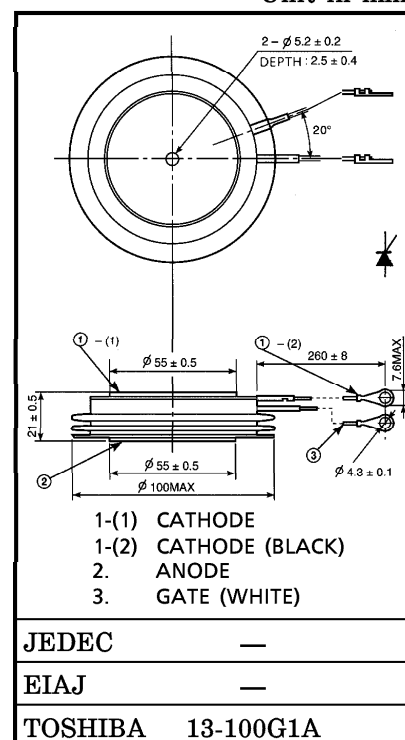
TOSHIBA ALLOY-FREE THYRISTOR

SF1500EX26

HIGH POWER CONTROL APPLICATIONS

- Repetitive Peak Off-State Voltage : V_{DRM}
- Repetitive Peak Reverse Voltage : V_{RRM}
- 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 : $dv/dt = 500V/\mu s$
- Weight : 630g
- Flat Package

Unit in mm



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MAXIMUM RATINGS

CHARACTERISTIC	SYMBOL	RATING	UNIT
Repetitive Peak Off-State Voltage and Repetitive Peak Reverse Voltage	V_{DRM} V_{RRM}	2500	V
Non-Repetitive Peak Reverse Voltage (Non-Repetitive < 5ms, $T_j = 0 \sim 125^\circ\text{C}$)	V_{RSM}	2750	V
R.M.S On-State Current	$I_{\text{T}} (\text{RMS})$	2355	A
Average On-State Current	$I_{\text{T}} (\text{AV})$	1500	A
Peak One Cycle Surge On-State Current (Non-Repetitive)	I_{TSM}	30000 (50Hz) 33000 (60Hz)	A
I^2t Limit Value	I^2t	3125×10^3	A^2s
Critical Rate of Rise of On-State Current (Note)	di / dt	200	$\text{A} / \mu\text{s}$
Peak Gate Power Dissipation	P_{GM}	30	W
Average Gate Power Dissipation	$P_{\text{G}} (\text{AV})$	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	$-40 \sim 125$	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	$-40 \sim 125$	$^\circ\text{C}$
Mounting Force	—	19.6 ± 2.0	kN

Note : $V_{\text{D}} = 1/2$ Rated, $T_j = 120^\circ\text{C}$, Gate Supply ($V_{\text{G}} = 15\text{V}$, $R_{\text{G}} = 8\Omega$, $t_{\text{r}} \leq 1\mu\text{s}$)

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}	$I_{TM} = 2500\text{A}$, $T_j = 25^\circ\text{C}$	—	1.75	V
Gate Trigger Voltage	V_{GT}	$V_D = 6\text{V}$, $R_L = 6\Omega$	$T_j = -40^\circ\text{C}$	4.5	V
			$T_j = 25^\circ\text{C}$	3.5	
Gate Trigger Current	I_{GT}		$T_j = -40^\circ\text{C}$	600	mA
			$T_j = 25^\circ\text{C}$	450	
Gate Non-Trigger Voltage	V_{GD}	$V_D = 1/2 \text{ Rated}$, $T_j = 125^\circ\text{C}$	0.2	—	V
Gate Non-Trigger Current	I_{GD}		5	—	mA
Delay Time	t_d	$V_D = 1/2 \text{ Rated}$, $T_j = 25^\circ\text{C}$ 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	$I_T = 1200\text{A}$, $V_R \geq 200\text{V}$, $dv/dt = 25\text{V}/\mu\text{s}$, $T_j = 115^\circ\text{C}$ $V_{DRM} = 2300\text{V}$	—	450	μs
Holding Current	I_H	$T_j = 25^\circ\text{C}$, $R_L = 6\Omega$	—	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 (Junction to Case)	$R_{th(j-f)}$	DC	—	0.025	$^\circ\text{C}/\text{W}$