

TOSHIBA ALLOY-FREE LIGHT TRIGGER THYRISTOR

**SL3500LX21**

HIGH POWER CONTROL APPLICATIONS

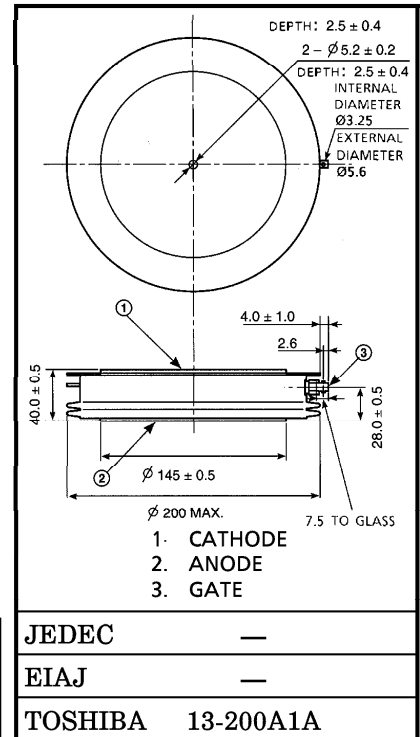
- Repetitive Peak Off-State Voltage :  $V_{DRM}$
- Repetitive Peak Reverse Voltage :  $V_{RRM}$
- Average On-State Current :  $I_T(AV) = 3500A$
- Light Trigger Power :  $P_{LT} = 8mW (Max.)$
- Turn-Off Time :  $t_q = 400\mu s (Max.)$
- Critical Rate of Rise of On-State Current :  $di / dt = 200A / \mu s$
- Critical Rate of Rise of Off-State Voltage :  $dv / dt = 2300V / \mu s$
- Flat Package

MAXIMUM RATINGS

CHARACTERISTIC	SYMBOL	RATING	UNIT
Repetitive Peak Off-State Voltage and Repetitive Peak Reverse Voltage	$V_{DRM}$ $V_{RRM}$	8000	V
Non-Repetitive Peak Reverse Voltage (Non-Repetitive $\leq 5ms, T_j = 0 \sim 115^\circ C$ )	$V_{RSM}$	8800	V
R.M.S On-State Current	$I_T(RMS)$	5498	A
Average On-State Current	$I_T(AV)$	3500	A
Peak One Cycle Surge On-State Current (Non-Repetitive)	$I_{TSM}$	60000 (50Hz) 65000 (60Hz)	A
$I^2t$ Limit Value	$I^2t$	$180 \times 10^5$	$A^2s$
Critical Rate of Rise of On-State Current (Note)	$di / dt$	200	$A / \mu s$
Junction Temperature	$T_j$	$-40 \sim 120$	$^\circ C$
Storage Temperature Range	$T_{stg}$	$-40 \sim 120$	$^\circ C$
Mounting Force	—	$98.0 \pm 9.8$	kN

Note :  $V_D = 1/2$  Rated,  $T_j = 120^\circ C$

Unit in mm



JEDEC	—
EIAJ	—
TOSHIBA	13-200A1A

Weight : 6500g

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## ELECTRICAL CHARACTERISTICS

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT	
Repetitive Peak Off-State Current and Repetitive Peak Reverse Current	$I_{DRM}$ $I_{RRM}$	$V_{DRM} = V_{RRM} = \text{Rated}$ , $T_j = 120^\circ\text{C}$	—	—	700	mA	
Peak On-State Voltage	$V_{TM}$	$I_{TM} = 2800\text{A}$ , $T_j = 25^\circ\text{C}$	—	—	2.7	V	
Light Trigger Power	$P_{LT}$	$V_D = 12\text{V}$ , $R_L = 6\Omega$	$T_j = -40^\circ\text{C}$	—	—	—	mW
			$T_j = 25^\circ\text{C}$	—	—	8	
Delay Time	$t_d$	$V_D = 1/2 \text{ Rated}$ , $T_j = 25^\circ\text{C}$ , $P_L = 24\text{mW}$	—	—	4	$\mu\text{s}$	
Gate Turn-On Time	$t_{gt}$		—	—	10	$\mu\text{s}$	
Turn-Off Time	$t_q$	$I_T = 2500\text{A}$ , $V_R \geq 500\text{V}$ , $dv/dt = 25\text{V}/\mu\text{s}$ , $T_j = 90^\circ\text{C}$ , $V_{DRM} = 1/2 \text{ Rated}$	—	—	400	$\mu\text{s}$	
Holding Current	$I_H$	$T_j = 25^\circ\text{C}$ , $R_L = 6\Omega$	—	—	—	mA	
Critical Rate of Rise of Off-State Voltage	$dv/dt$	$V_{DRM} = 1/2 \text{ Rated}$ , $T_j = 90^\circ\text{C}$ , Gate Open, Exponential Rise	2300	—	—	$\text{V}/\mu\text{s}$	
Thermal Resistance (Junction to Case)	$R_{th(j-f)}$	DC	—	—	0.0035	$^\circ\text{C}/\text{W}$	