

**TOSHIBA****SL2500JX21**

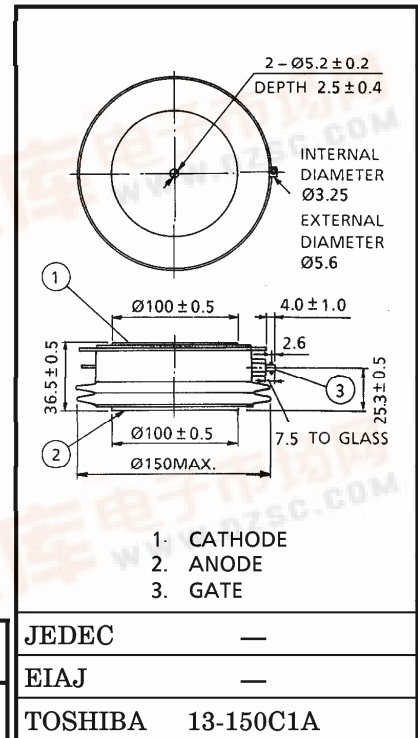
TOSHIBA ALLOY-FREE LIGHT TRIGGER THYRISTOR

**SL2500JX21**

## HIGH POWER CONTROL APPLICATIONS

Unit in mm

- Repetitive Peak Off-State Voltage :  $V_{DRM}$
- Repetitive Peak Reverse Voltage :  $V_{RRM}$
- Average On-State Current :  $I_T(AV) = 2500A$
- Light Trigger Power :  $P_{LT} = 8mW (Max.)$
- Turn-Off Time :  $t_q = 400\mu s (Max.)$
- Critical Rate of Rise of On-State Current :  $di/dt = 300A/\mu s$
- 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                         | $V_{DRM}$<br>$V_{RRM}$ | 6000                         | V          |
| Non-Repetitive Peak Reverse Voltage (Non-Repetitive $\leq 5ms$ , $T_j = 0 \sim 125^\circ C$ ) | $V_{RSM}$              | 6600                         | V          |
| R.M.S On-State Current                                                                        | $I_T(RMS)$             | 3926                         | A          |
| Average On-State Current                                                                      | $I_T(AV)$              | 2500                         | A          |
| Peak One Cycle Surge On-State Current (Non-Repetitive)                                        | $I_{TSM}$              | 42000 (50Hz)<br>45000 (60Hz) | A          |
| $I^2t$ Limit Value                                                                            | $I^2t$                 | $88.2 \times 10^5$           | $A^2s$     |
| Critical Rate of Rise of On-State Current (Note)                                              | $di/dt$                | 300                          | $A/\mu s$  |
| Junction Temperature                                                                          | $T_j$                  | $-40 \sim 120$               | $^\circ C$ |
| Storage Temperature Range                                                                     | $T_{stg}$              | $-40 \sim 125$               | $^\circ C$ |
| Mounting Force                                                                                | —                      | $78.4 \pm 7.8$               | kN         |

Weight : 3200g

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

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## ELECTRICAL CHARACTERISTICS

| CHARACTERISTIC                                                        | SYMBOL                               | TEST CONDITION                                                                                                                                                              | MIN.                      | MAX.   | UNIT                      |
|-----------------------------------------------------------------------|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|--------|---------------------------|
| Repetitive Peak Off-State Current and Repetitive Peak Reverse Current | $I_{\text{DRM}}$<br>$I_{\text{RRM}}$ | $V_{\text{DRM}} = V_{\text{RRM}} = \text{Rated}$ , $T_j = 120^\circ\text{C}$                                                                                                | —                         | 250    | mA                        |
| Peak On-State Voltage                                                 | $V_{\text{TM}}$                      | $I_{\text{TM}} = 2500\text{A}$ , $T_j = 25^\circ\text{C}$                                                                                                                   | —                         | 1.96   | V                         |
| Light Trigger Power                                                   | $P_{\text{LT}}$                      | $V_{\text{D}} = 12\text{V}$ , $R_{\text{L}} = 6\Omega$                                                                                                                      | $T_j = -40^\circ\text{C}$ | —      | mW                        |
|                                                                       |                                      |                                                                                                                                                                             | $T_j = 25^\circ\text{C}$  | 8      |                           |
| Delay Time                                                            | $t_{\text{d}}$                       | $V_{\text{D}} = 1/2 \text{ Rated}$ , $T_j = 25^\circ\text{C}$ ,<br>$P_{\text{L}} = 20\text{mW}$                                                                             | —                         | 4      | $\mu\text{s}$             |
| Gate Turn-On Time                                                     | $t_{\text{gt}}$                      |                                                                                                                                                                             | —                         | 7      | $\mu\text{s}$             |
| Turn-Off Time                                                         | $t_{\text{q}}$                       | $I_{\text{T}} = 1200\text{A}$ , $V_{\text{R}} \geq 200\text{V}$ ,<br>$dv/dt = 25\text{V}/\mu\text{s}$ , $T_j = 110^\circ\text{C}$ ,<br>$V_{\text{DRM}} = 1/2 \text{ Rated}$ | —                         | 400    | $\mu\text{s}$             |
| Holding Current                                                       | $I_{\text{H}}$                       | $T_j = 25^\circ\text{C}$ , $R_{\text{L}} = 6\Omega$                                                                                                                         | —                         | 300    | mA                        |
| Critical Rate of Rise of Off-State Voltage                            | $dv/dt$                              | $V_{\text{DRM}} = 1/2 \text{ Rated}$ , $T_j = 115^\circ\text{C}$ ,<br>Gate Open, Exponential Rise                                                                           | 2300                      | —      | $\text{V}/\mu\text{s}$    |
| Thermal Resistance (Junction to Case)                                 | $R_{\text{th(j-f)}}$                 | DC                                                                                                                                                                          | —                         | 0.0075 | $^\circ\text{C}/\text{W}$ |

