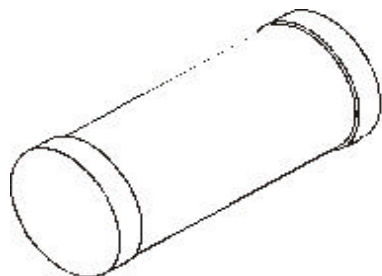


**SILICON DIAC  
BIDIRECTIONAL TRIGGER DIODE  
GLASS PASSIVATED PNPN DEVICE**

**CLLDB3**

**SOD - 80C  
Mini MELF (LL-34)**



Functioning as a Trigger Diode with a Fixed Voltage Reference, CLLDB3 can be used in Conjunction with Triacs for Simplified Gate Control Circuits or as a Starting Element in Fluorescent Lamp Ballasts

**ABSOLUTE MAXIMUM RATINGS ( $T_a=25^\circ\text{C}$  unless specified otherwise))**

| DESCRIPTION                                                                              | SYMBOL               | VALUE        | UNIT               |
|------------------------------------------------------------------------------------------|----------------------|--------------|--------------------|
| Power Dissipation on Printed Circuit (L=10mm) ( $T_a=50^\circ\text{C}$ )                 | $P_{\text{tot}}$     | 150          | mW                 |
| Up to $T_a = 50^\circ\text{C}$ and Mounted on a Ceramic Substrate of 10mm x 10mm x 0.6mm | $P_{\text{tot}}$     | 120          | mW                 |
| Repetitive Peak on-State Current ( $t_p=20\text{ms}$ , $f=100\text{Hz}$ )                | $I_{\text{TRM}}$     | 2            | A                  |
| Storage Temperature Range                                                                | $T_{\text{stg}}$     | - 40 to +125 | $^\circ\text{C}$   |
| Junction Temperature Range                                                               | $T_j$                | - 40 to +110 | $^\circ\text{C}$   |
| <b>THERMAL RESISTANCE</b>                                                                |                      |              |                    |
| Junction to Ambient in free air                                                          | $R_{\text{th(j-a)}}$ | 400          | $^\circ\text{C/W}$ |
| Junction-Leads                                                                           | $R_{\text{th(j-l)}}$ | 150          | $^\circ\text{C/W}$ |

**ELECTRICAL CHARACTERISTICS ( $T_j=25^\circ\text{C}$  unless specified otherwise)**

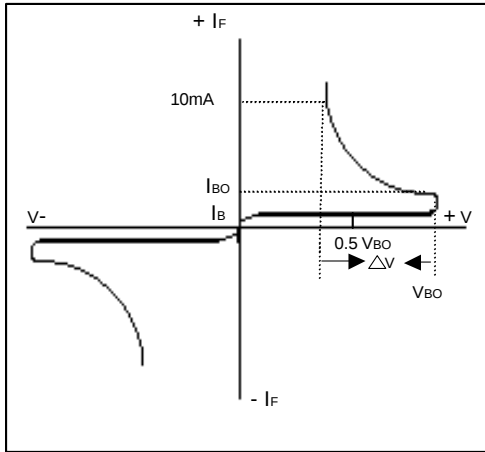
| DESCRIPTION                 | SYMBOL                                | TEST CONDITIONS                                                                  | MIN     | MAX     | UNIT          |
|-----------------------------|---------------------------------------|----------------------------------------------------------------------------------|---------|---------|---------------|
| * Breakover Voltage         | $V_{\text{BO}}$                       | ** C = 22nF<br>see diagram 1                                                     | 28      | 36      | V             |
| Breakover Voltage Symmetry  | $[ +V_{\text{BO}} - -V_{\text{BO}} ]$ | ** C = 22nF<br>see diagram 1                                                     |         | $\pm 3$ | V             |
| * Dynamic Breakover Voltage | $  \Delta V_{\pm}  $                  | $\Delta I=[I_{\text{BO}} \text{ to } I_{\text{F}}=10\text{mA}]$<br>see diagram 1 | 5       |         | V             |
| * Output Voltage            | $V_{\text{O}}$                        | see diagram 2                                                                    | 5       |         | V             |
| * Breakover Current         | $I_{\text{BO}}$                       | ** C = 22nF                                                                      |         | 50      | $\mu\text{A}$ |
| * Rise Time                 | $t_r$                                 | see diagram 3                                                                    | TYP 1.5 |         | $\mu\text{s}$ |
| * Leakage Current           | $I_{\text{B}}$                        | $V_{\text{B}} = 0.5 V_{\text{BO}} \text{ max}$<br>see diagram 1                  |         | 10      | $\mu\text{A}$ |

\* Electrical characteristic applicable in both forward and reverse directions

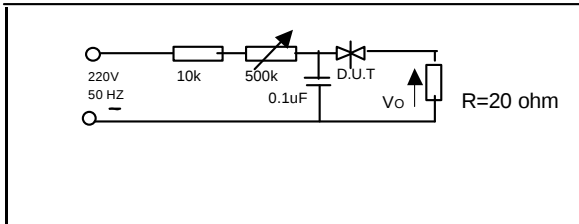
\*\* Connected in parallel with the devices.

## CLLDB3

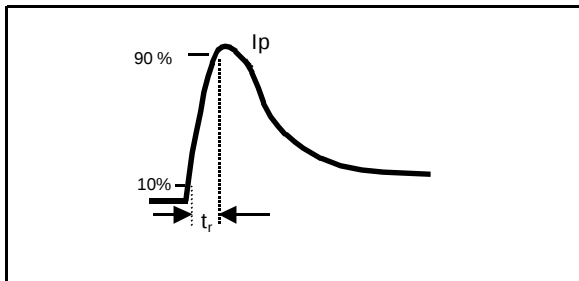
**DIAGRAM 1 :**Current-voltage characteristics



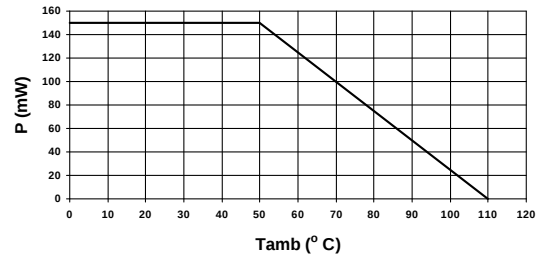
**DIAGRAM 2 :**Test circuit for output voltage



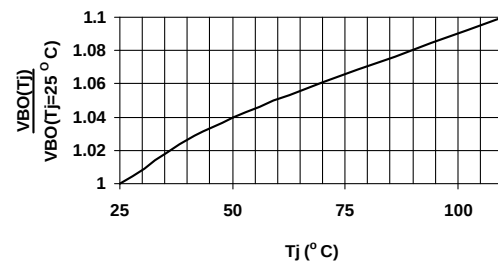
**DIAGRAM 3 :** Test circuit see diagram 2.  
Adjust R for  $I_p = 0.5\text{A}$



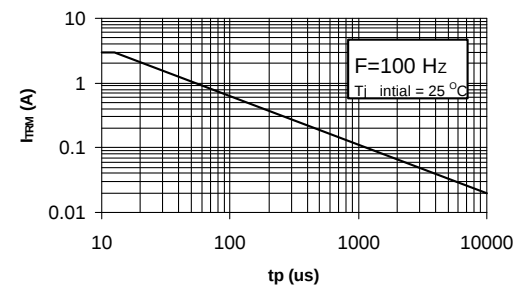
**Power dissipation versus ambient temperature  
(maximum values)**



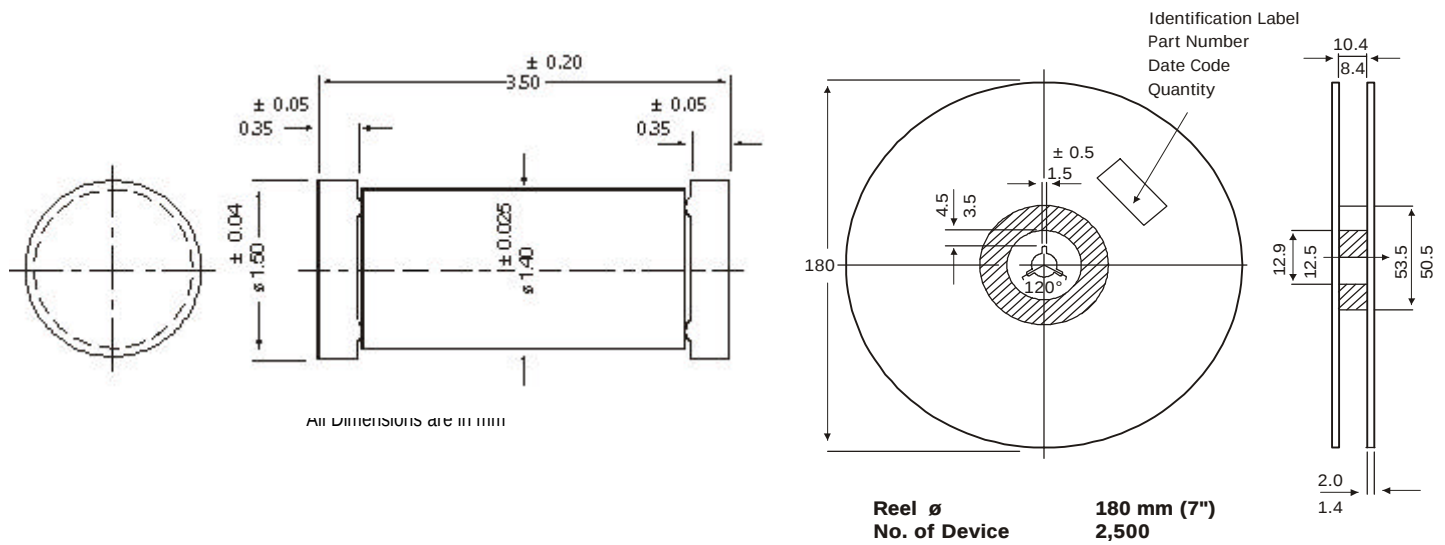
**Relative variation of  $V_{BO}$  versus junction temperature  
(typical values)**



**Peak pulse current versus pulse duration (maximum value)**

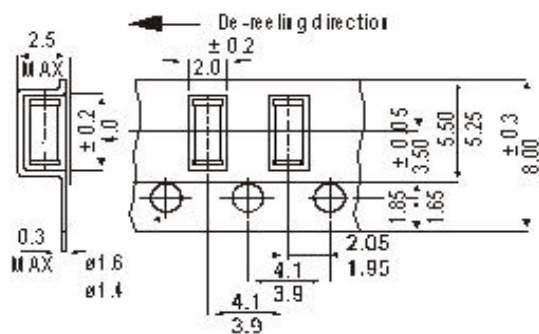


## SOD 80C (LL-34) Mini MELF Hermetically Sealed Glass Package



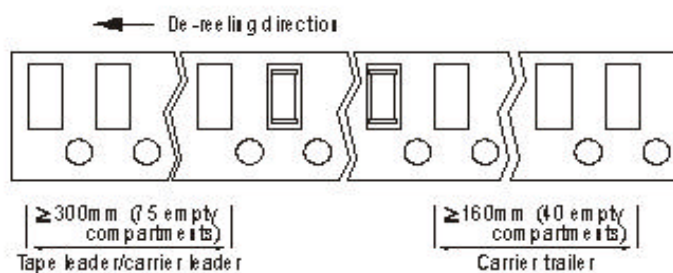
All Dimensions are in mm

**TAPE & REEL**



## Notes

1. Maximum of 0.5% of the total number of components per reel may be missing-exclusively at the beginning and at the end of the reel.
2. A maximum of three consecutive components may be missing, provided this gap is followed by six consecutive components.



All Dimensions are in mm

**Drawings are not to scale**

### Packing Detail

| PACKAGE     | STANDARD PACK |                 | INNER CARTON BOX |     | OUTER CARTON BOX |      |          |
|-------------|---------------|-----------------|------------------|-----|------------------|------|----------|
|             | Details       | Net Weight/Qty  | Size             | Qty | Size             | Qty  | Gr Wt    |
| SOD-80C T&R | 2.5K/reel     | 225 gm/2.5K pcs | 9" x 9" x 9"     | 40K | 18" x 12" x 10"  | 80K  | 7.2 kgs  |
|             |               |                 |                  |     | 19" x 19" x 20"  | 320K | 28.8 kas |

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