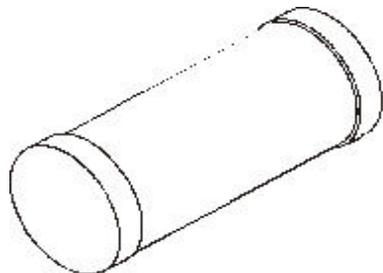


**SILICON DIAC  
BIDIRECTIONAL TRIGGER DIODE  
GLASS PASSIVATED PNPN DEVICE**

**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)**

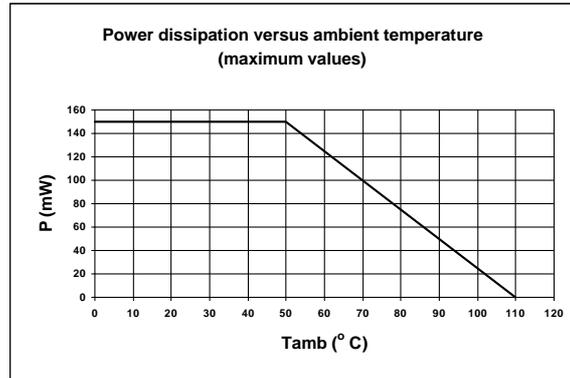
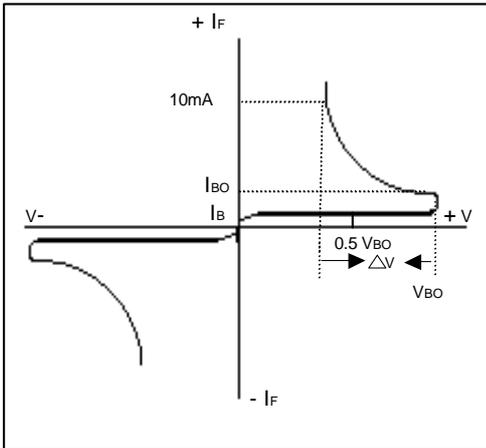
| DESCRIPTION                 | SYMBOL                                | TEST CONDITIONS  | MIN     | MAX     | UNIT          |
|-----------------------------|---------------------------------------|--|---------|---------|---------------|
| * Breakover Voltage         | $V_{\text{BO}}$                       | ** 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

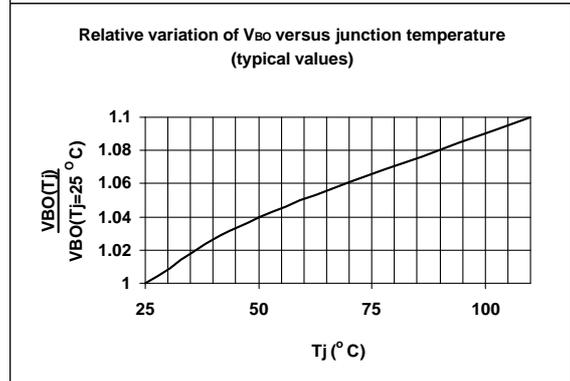
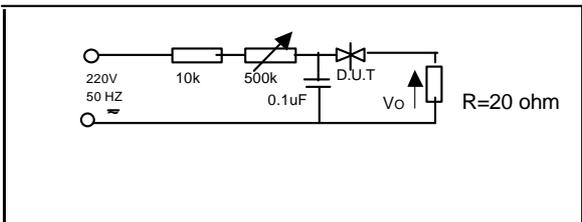
\*\* Connected in parallel with the devices.

# CLLDB3

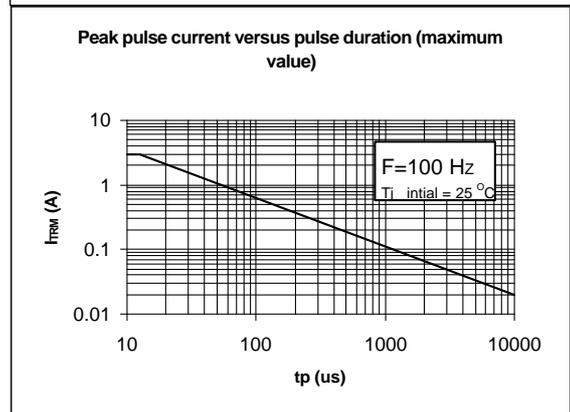
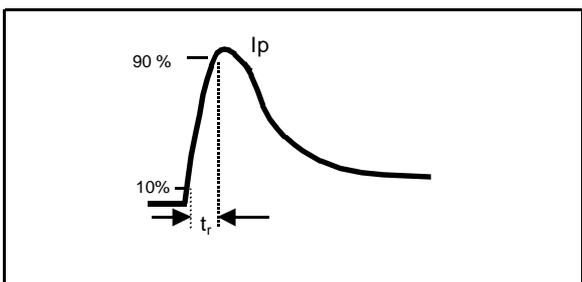
**DIAGRAM 1 :** Current-voltage characteristics



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



**DIAGRAM 3 :** Test circuit see diagram 2.  
Adjust R for I<sub>p</sub>=0.5A





### **Component Disposal Instructions**

1. CDIL Semiconductor Devices are RoHS compliant, customers are requested to please dispose as per prevailing Environmental Legislation of their Country.
2. In Europe, please dispose as per EU Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE).

### **Customer Notes**

### **Disclaimer**

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