

## MINI MELF Glass-Encapsulate Diodes

Silicon bidirectional diac

### Features

- VBO 28V-45V



### Limiting Values (Absolute Maximum Rating)

| PARAMETERS   | SYMBOL        | VALUE         |  | UNITS              |
|--|---------------|---------------|--|--------------------|
|  |               | LLDB3 / LLDB4 |  |                    |
| Power Dissipation on Printed Cir cuit(L=10mm) $T_A=50^{\circ}\text{C}$   | $P_c$         | 150           |  | mW                 |
| Repetitive Peak on-state Current $T_p=10\mu\text{S}$<br>$f=100\text{Hz}$ | $I_{TRM}$     | 2.0           |  | A                  |
| Storage and Operating Junction Temperature                               | $T_{STG}/T_J$ | -40 to +125   |  | $^{\circ}\text{C}$ |

### Electrical Characteristics ( $T_A=25^{\circ}\text{C}$ Unless otherwise specified)

| PARAMETERS                 | SYMBOLS                      | TEST CONDITIONS  | VALUE |         | UNITS |               |
|----------------------------|------------------------------|--|-------|---------|-------|---------------|
|                            |                              |  | LLDB3 | LLDB4   |       |               |
| Breakover Voltage*         | $V_{BO}$                     | $C=22\text{nf}^{**}$<br>See Diagram 1                        | Min   | 28      | 35    | V             |
|                            |                              |  | Typ   | 32      | 45    |               |
|                            |                              |  | Max   | 36      | 45    |               |
| Breakover Voltage Symmetry | $1+V_{BO1}$ -<br>$1-V_{BO1}$ | $C=22\text{nf}^{**}$<br>See Diagram 1                        | Max   | $\pm 3$ |       | V             |
| Dynamic Breakover Voltage  | $1 \pm \Delta V_1$           | $\Delta I=(I_{BO} \text{ to } I_F=10\text{mA})$<br>See FIG 1 | Min   | 5       |       | V             |
| Output Voltage*            | $V_o$                        | See FIG 2  | Min   | 5       |       | V             |
| Breakover Current*         | $I_{BO}$                     | $C=22\text{nf}^{**}$   | Max   | 100     |       | $\mu\text{A}$ |
| Rise Time*                 | $t_r$                        | See FIG 3  | Typ   | 1.5     |       | $\mu\text{S}$ |
| Leakage Current*           | $I_B$                        | $I_B=0.5 V_{BO} \text{ MAX}$<br>See FIG 3                    | Max   | 10      |       | $\mu\text{A}$ |

NOTE:\* Electrical characteristics applicable in both forward and reverse directions.

\*\* Connected in parallel with the devices.

# Typical Characteristics

FIG.1-CURRENT-VOLTAGE CHARACTERISTICS

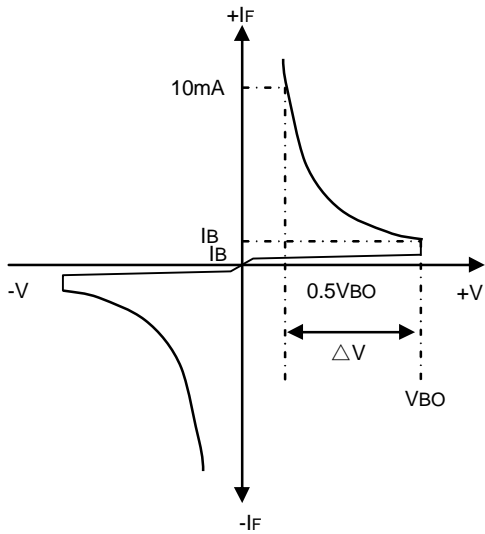


FIG.2-TEST CIRCUIT FOR OUTPUT VOLTAGE

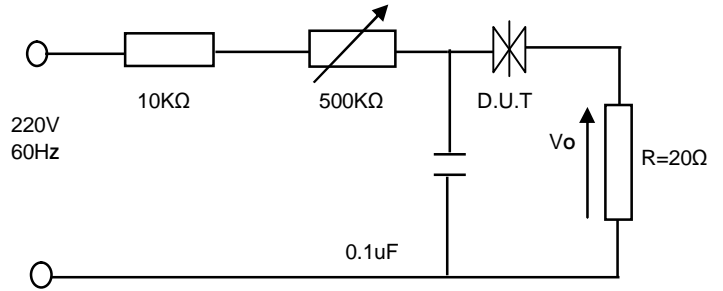


FIG.3-TEST CIRCUIT SEE FIG.2 ADJUST R FOR  $I_p=0.5A$

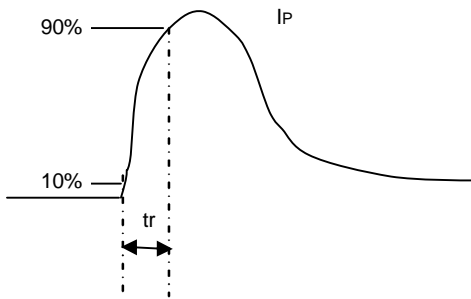


FIG.4-TEST CIRCUIT FOR OUTPUT

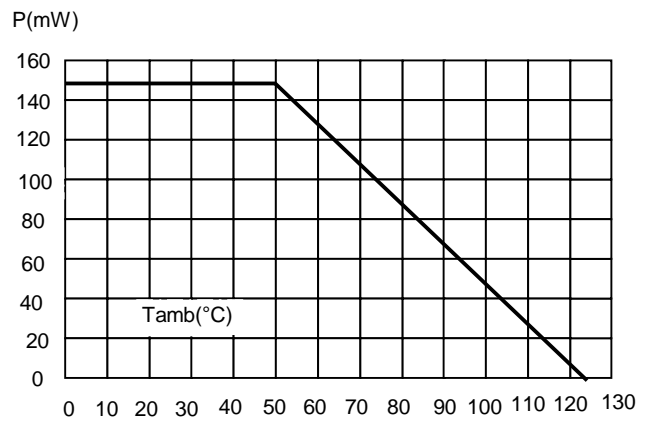


FIG.5-RELATIVE VARIATION OF  $V_{BO}$  VERSUS JUNCTION TEMPERATURE (TYPICAL VALUES)

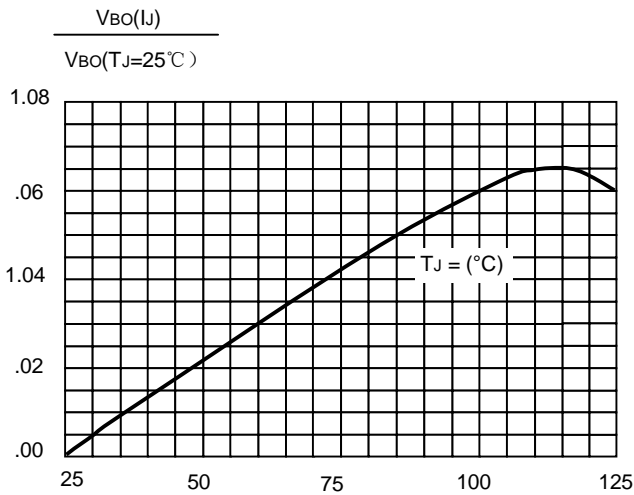
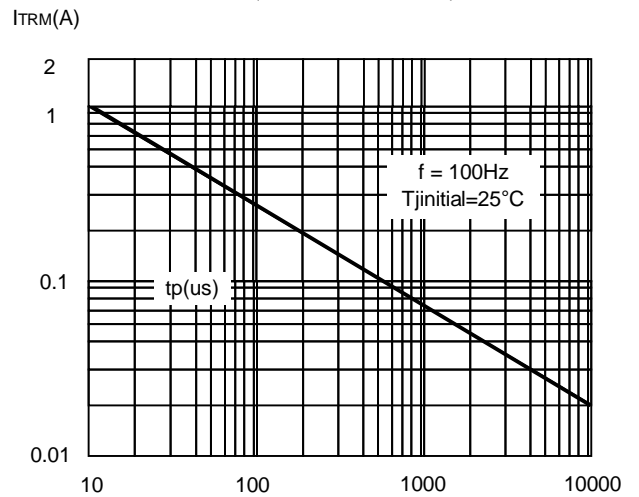
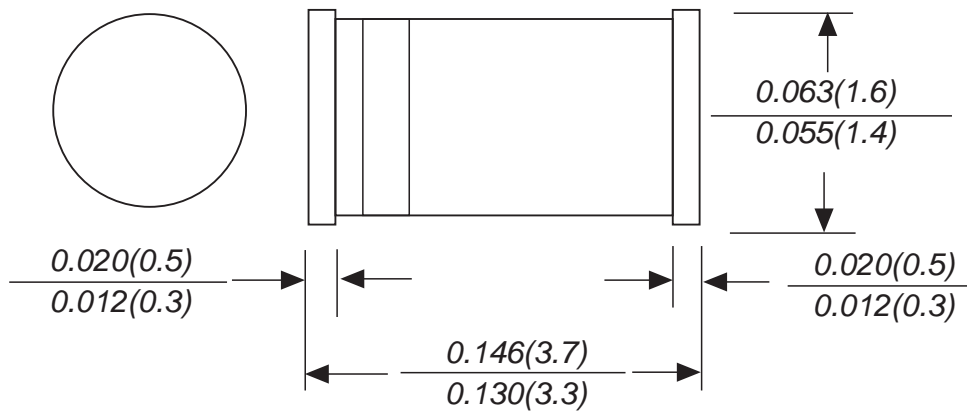


FIG.6-PEAK PULSE CURRENT VERSUS PULSE DURATION (MAXIMUM VALUES)

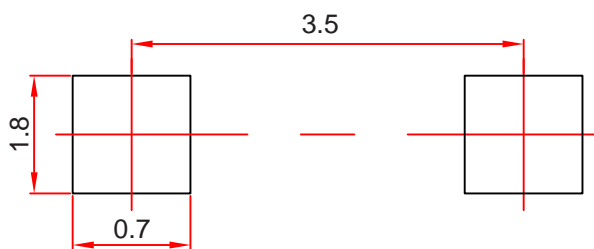


## MINI MELF Package Outline Dimensions



Dimensions in millimeters

## MINI MELF Suggested Pad Layout



### Note:

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05$  mm.
3. The pad layout is for reference purposes only.

### NOTICE

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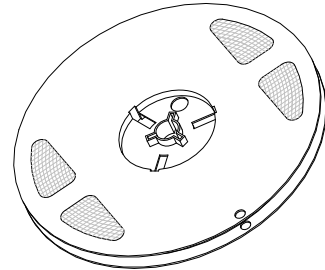
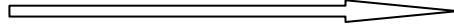
# Packaging Specifications for Surface Mounted Glass Diodes

1. The method of packaging and dimension are shown as below figure. (Dimension in mm)

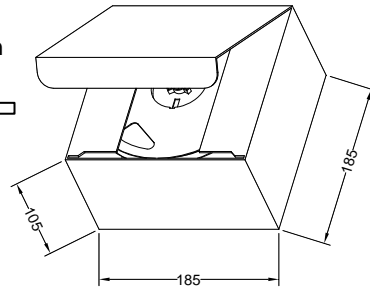
LS-31 (MicroMELF)  
LS-34 (QuadroMELF)  
LL-34 (MiniMELF)  
DO-213AA(MiniMELF)



2,500 pcs per reel



20,000 pcs per box  
8 reels per box



100,000 pcs per carton  
5 boxes per carton

