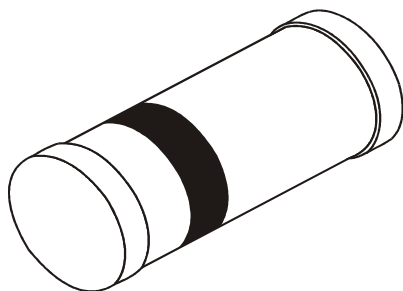


## SILICON PLANAR ZENER DIODES

## BZV55C 3V6 to 75V



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

**Polarity : Cathode is indicated by a blue band**

### Hermetically Sealed, Glass Silicon Diodes

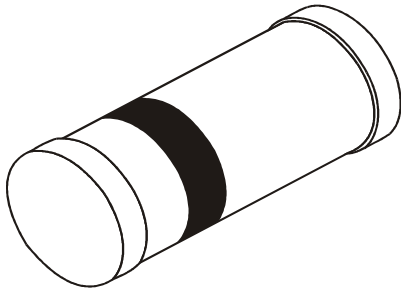
#### ABSOLUTE MAXIMUM RATINGS ( $T_a=25^\circ\text{C}$ )

| DESCRIPTION                                                                                | SYMBOL         | VALUE        | UNIT             |
|--------------------------------------------------------------------------------------------|----------------|--------------|------------------|
| Average Forward Current (averaged Over any 20 ms period)                                   | $I_{F(av)}$    | 250          | mA               |
| Repetitive Peak Forward Current                                                            | $I_{FRM}$      | 250          | mA               |
| Total Power Dissipation up to $T_{flange}=50^\circ\text{C}$                                | $P_{tot}$      | 500          | mW               |
| Up to $T_a=50^\circ\text{C}$ and Mounted on a Ceramic Substrate of 10mm x 10mm x 0.6mm     | $P_{tot}$      | 400          | mW               |
| Non-Repetitive Peak Reverse Power Dissipation $t=100\mu\text{s}$ , $T_j=150^\circ\text{C}$ | $P_{ZSM}$      | 30           | W                |
| Storage Temperature                                                                        | $T_{stg}$      | - 65 to +200 | $^\circ\text{C}$ |
| Junction Temperature                                                                       | $T_j$          | 200          | $^\circ\text{C}$ |
| <b>Thermal Resistance</b>                                                                  |                |              |                  |
| From Junction to tie-point (flanges)                                                       | $R_{th(j-tp)}$ | 0.30         | K/mW             |
| From Junction to Ambient when Mounted on a Ceramic Substrate of 10 mm x 10 mm x 0.6 mm     | $R_{th(j-a)}$  | 0.38         | K/mW             |

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

$V_F=0.9\text{V max @ }10\text{mA}$

| Device     | Working Voltage*<br>+/- 5%<br>$V_Z(V)$<br>@ $I_{Z\text{ test}}=5\text{mA}$ |       | Differential *<br>Resistance<br>$r_{diff}(\Omega)$<br>@ $I_{Z\text{ test}}=5\text{mA}$ | Temperature<br>Coefficient<br>$S_z(\text{mV/K})$<br>@ $I_{Z\text{ test}}=5\text{mA}$ |      | Differential<br>Resistance<br>$r_{diff}(\Omega)$<br>@ $I_{Z\text{ test}}=1\text{mA}$ | $I_R$ @<br>$T_a$<br>$25^\circ\text{C}$<br>( $\mu\text{A}$ ) | $V_R$<br>(V) |
|------------|----------------------------------------------------------------------------|-------|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|------|--------------------------------------------------------------------------------------|-------------------------------------------------------------|--------------|
|            | min                                                                        | max   | max                                                                                    | min                                                                                  | max  | max                                                                                  | max                                                         |              |
| BZV55C 3V6 | 3.40                                                                       | 3.80  | 90                                                                                     | -3.5                                                                                 | 0    | 600                                                                                  | 5.0                                                         | 1.0          |
| BZV55C 3V9 | 3.70                                                                       | 4.10  | 90                                                                                     | -3.5                                                                                 | 0    | 600                                                                                  | 3.0                                                         | 1.0          |
| BZV55C 4V3 | 4.00                                                                       | 4.60  | 90                                                                                     | -3.5                                                                                 | 0    | 600                                                                                  | 3.0                                                         | 1.0          |
| BZV55C 4V7 | 4.40                                                                       | 5.00  | 80                                                                                     | -3.5                                                                                 | 0.2  | 500                                                                                  | 3.0                                                         | 2.0          |
| BZV55C 5V1 | 4.80                                                                       | 5.40  | 60                                                                                     | -2.7                                                                                 | 1.2  | 480                                                                                  | 2.0                                                         | 2.0          |
| BZV55C 5V6 | 5.20                                                                       | 6.00  | 40                                                                                     | -2.0                                                                                 | 2.5  | 400                                                                                  | 1.0                                                         | 2.0          |
| BZV55C 6V2 | 5.80                                                                       | 6.60  | 10                                                                                     | 0.4                                                                                  | 3.7  | 150                                                                                  | 3.0                                                         | 4.0          |
| BZV55C 6V8 | 6.40                                                                       | 7.20  | 15                                                                                     | 1.2                                                                                  | 4.5  | 80                                                                                   | 2.0                                                         | 4.0          |
| BZV55C 7V5 | 7.00                                                                       | 7.90  | 15                                                                                     | 2.5                                                                                  | 5.3  | 80                                                                                   | 1.0                                                         | 5.0          |
| BZV55C 8V2 | 7.70                                                                       | 8.70  | 15                                                                                     | 3.2                                                                                  | 6.2  | 80                                                                                   | 0.7                                                         | 5.0          |
| BZV55C 9V1 | 8.50                                                                       | 9.60  | 15                                                                                     | 3.8                                                                                  | 7.0  | 100                                                                                  | 0.5                                                         | 6.0          |
| BZV55C 10  | 9.40                                                                       | 10.60 | 20                                                                                     | 4.5                                                                                  | 8.0  | 150                                                                                  | 0.2                                                         | 7.0          |
| BZV55C 11  | 10.40                                                                      | 11.60 | 20                                                                                     | 5.4                                                                                  | 9.0  | 150                                                                                  | 0.1                                                         | 8.0          |
| BZV55C 12  | 11.40                                                                      | 12.70 | 25                                                                                     | 6.0                                                                                  | 10.0 | 150                                                                                  | 0.1                                                         | 8.0          |
| BZV55C 13  | 12.40                                                                      | 14.10 | 30                                                                                     | 7.0                                                                                  | 11.0 | 170                                                                                  | 0.1                                                         | 8.0          |
| BZV55C 15  | 13.80                                                                      | 15.60 | 30                                                                                     | 9.2                                                                                  | 13.0 | 200                                                                                  | 0.05                                                        | 10.5         |



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

**Polarity : Cathode is indicated by a blue band**

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

**$V_F=0.9\text{V max @ }10\text{mA}$**

| Device    | Working Voltage*<br>+/- 5%<br>$V_Z(\text{V})$<br>@ $I_{Z\text{ test}}=5\text{mA}$ |       | Differential *<br>Resistance<br>$r_{\text{diff}}(\Omega)$<br>@ $I_{Z\text{ test}}=5\text{mA}$<br>max | Temperature<br>Coefficient<br>$S_Z(\text{mV/K})$<br>@ $I_{Z\text{ test}}=5\text{mA}$ |      | Differential<br>Resistance<br>$r_{\text{diff}}(\Omega)$<br>@ $I_{Z\text{ test}}=1\text{mA}$<br>max | $I_R$ @<br>$T_a$<br>$25^\circ\text{C}$<br>( $\mu\text{A}$ )<br>max | $V_R$<br>(V) |
|-----------|-----------------------------------------------------------------------------------|-------|------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|------|----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|--------------|
|           | min                                                                               | max   |                                                                                                      | min                                                                                  | max  |                                                                                                    |                                                                    |              |
| BZV55C 16 | 15.30                                                                             | 17.10 | 40                                                                                                   | 10.4                                                                                 | 14.0 | 200                                                                                                | 0.05                                                               | 11.2         |
| BZV55C 18 | 16.80                                                                             | 19.10 | 45                                                                                                   | 12.4                                                                                 | 16.0 | 225                                                                                                | 0.05                                                               | 12.6         |
| BZV55C 20 | 18.80                                                                             | 21.20 | 55                                                                                                   | 14.4                                                                                 | 18.0 | 225                                                                                                | 0.05                                                               | 14.0         |
| BZV55C 22 | 20.80                                                                             | 23.30 | 55                                                                                                   | 16.4                                                                                 | 20.0 | 250                                                                                                | 0.05                                                               | 15.4         |
| BZV55C 24 | 22.80                                                                             | 25.60 | 70                                                                                                   | 18.4                                                                                 | 22.0 | 250                                                                                                | 0.05                                                               | 16.8         |
|           | @ $I_{Z\text{ test}}=2\text{mA}$                                                  |       | @ $I_{Z\text{ test}}=2\text{mA}$                                                                     | @ $I_{Z\text{ test}}=2\text{mA}$                                                     |      | @ $I_{Z\text{ test}}=0.5\text{mA}$                                                                 |                                                                    |              |
| BZV55C 27 | 25.10                                                                             | 28.90 | 80                                                                                                   | 21.4                                                                                 | 25.3 | 300                                                                                                | 0.05                                                               | 18.9         |
| BZV55C 30 | 28.00                                                                             | 32.00 | 80                                                                                                   | 24.4                                                                                 | 29.4 | 300                                                                                                | 0.05                                                               | 21.0         |
| BZV55C 33 | 31.00                                                                             | 35.00 | 80                                                                                                   | 27.4                                                                                 | 33.4 | 325                                                                                                | 0.05                                                               | 23.1         |
| BZV55C 36 | 34.00                                                                             | 38.00 | 90                                                                                                   | 30.4                                                                                 | 37.4 | 350                                                                                                | 0.05                                                               | 25.2         |
| BZV55C 39 | 37.00                                                                             | 41.00 | 130                                                                                                  | 33.4                                                                                 | 41.2 | 350                                                                                                | 0.05                                                               | 27.3         |
| BZV55C 43 | 40.00                                                                             | 46.00 | 150                                                                                                  | 37.6                                                                                 | 46.6 | 375                                                                                                | 0.05                                                               | 30.1         |
| BZV55C 47 | 44.00                                                                             | 50.00 | 170                                                                                                  | 42.0                                                                                 | 51.8 | 375                                                                                                | 0.05                                                               | 32.9         |
| BZV55C 51 | 48.00                                                                             | 54.00 | 180                                                                                                  | 46.6                                                                                 | 57.2 | 400                                                                                                | 0.05                                                               | 35.7         |
| BZV55C 56 | 52.00                                                                             | 60.00 | 200                                                                                                  | 52.2                                                                                 | 63.8 | 425                                                                                                | 0.05                                                               | 39.2         |
| BZV55C 62 | 58.00                                                                             | 66.00 | 215                                                                                                  | 58.8                                                                                 | 71.6 | 450                                                                                                | 0.05                                                               | 43.4         |
| BZV55C 68 | 64.00                                                                             | 72.00 | 240                                                                                                  | 65.6                                                                                 | 79.8 | 475                                                                                                | 0.05                                                               | 47.6         |
| BZV55C 75 | 70.00                                                                             | 79.00 | 255                                                                                                  | 73.4                                                                                 | 88.6 | 500                                                                                                | 0.05                                                               | 52.5         |

**\*Pulse test:  $20\text{ms} \leq t_p \leq 50\text{ms}$**

BZV55C3V6\_75Rev\_1 080402E

Technical drawing of a 180 mm (7 inch) diameter reel. The drawing includes three views: a side view, a top view, and a detail view of the reel edge.

**Side View:** Shows the reel's profile. Key dimensions include a total width of 3.50 mm, a central hub diameter of  $\phi 1.40$  mm, and a cathode band width of  $\pm 0.025$  mm. The reel has a diameter of  $\phi 1.50$  mm. The cathode band is labeled "Cathode band".

**Top View:** Shows the reel's circular face. Key dimensions include a total diameter of 180 mm, a central hole diameter of  $\pm 0.5$  mm, and a central hole diameter of 1.5 mm. The central hole is labeled "120°".

**Detail View:** Shows the reel edge. Key dimensions include a total width of 10.4 mm, a central hole diameter of 8.4 mm, and a central hole diameter of 12.9 mm. The reel has a diameter of 12.5 mm. The central hole is labeled "53.5" and "50.5".

**Identification Labels:** Part Number, Date Code, Quantity.

**Reel  $\phi$  180 mm (7")**

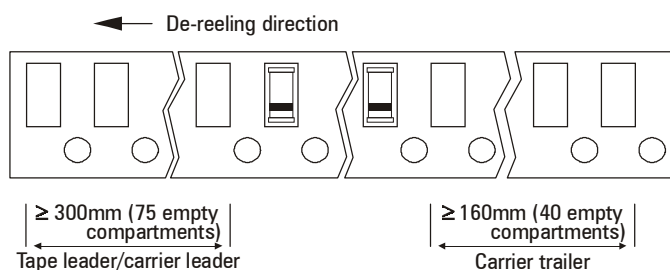
**No. of Device 2,500**

All Dimensions are in mm

Technical drawing of a cable reel. The drawing shows a side view of the reel with a cable wound around it. Key dimensions and labels include:

- De-reeling direction:** Indicated by an arrow pointing left.
- MAX:** Two locations where the maximum dimension is indicated.
- Dimensions:**
  - Top left: 2.5 (width), ±0.2 (height), 4.0 (height), ±0.2 (height).
  - Top center: 2.0 (width), ±0.2 (height).
  - Right side: 5.25 (height), 5.50 (height), 8.00 (height), ±0.3 (height).
  - Bottom right: 1.85 (width), 3.50 (width), 1.65 (width), 2.05 (width), 1.95 (width).
  - Bottom center: 4.1 (width), 3.9 (width), 4.1 (width).
  - Bottom left: 0.3 (width), MAX (width), 0.16 (width), 0.14 (width).

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.



**Drawings are not to scale**

| 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"<br>19" x 19" x 20" | 80K<br>320K | 7.2 kgs<br>28.8 kgs |

### **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**

The product information and the selection guides facilitate selection of the CDIL's Semiconductor Device(s) best suited for application in your product(s) as per your requirement. It is recommended that you completely review our Data Sheet(s) so as to confirm that the Device(s) meet functionality parameters for your application. The information furnished in the Data Sheet and on the CDIL Web Site/CD are believed to be accurate and reliable. CDIL however, does not assume responsibility for inaccuracies or incomplete information. Furthermore, CDIL does not assume liability whatsoever, arising out of the application or use of any CDIL product; neither does it convey any license under its patent rights nor rights of others. These products are not designed for use in life saving/support appliances or systems. CDIL customers selling these products (either as individual Discrete Semiconductor Devices or incorporated in their end products), in any life saving/support appliances or systems or applications do so at their own risk and CDIL will not be responsible for any damages resulting from such sale(s).

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