

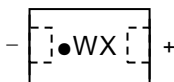


**BZT52C2V4LP  
 THRU  
 BZT52C39LP**

**100 mW  
 Zener Diode  
 2.4 to 39 Volts**

**Features**

- Ultra-Small Leadless Surface Mount Package
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Ideally Suited for Automated Assembly Processes
- Lead Free Finish/Rohs Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Halogen free available upon request by adding suffix "-HF"



**Absolute Maximum Ratings**

| Symbol           | Rating                    | Rating      | Unit |
|------------------|---------------------------|-------------|------|
| P <sub>D</sub>   | Power dissipation         | 100         | mW   |
| T <sub>J</sub>   | Junction Temperature      | -65 to +150 | °C   |
| T <sub>STG</sub> | Storage Temperature Range | -65 to +150 | °C   |

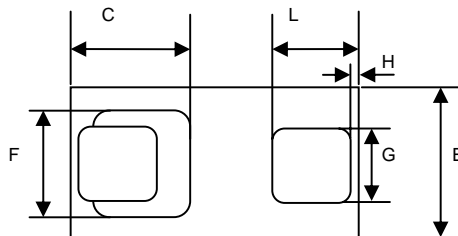
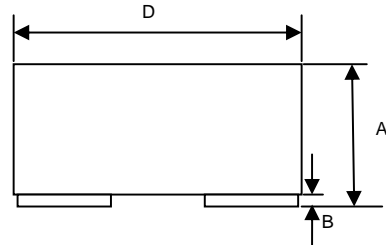
**Absolute Maximum Ratings**

| Symbol            | Rating                                 | Rating | Unit |
|-------------------|--|--------|------|
| R <sub>thJA</sub> | Thermal Resistance Junction to Ambient | 1250   | °C/W |

**Electrical Characteristics**

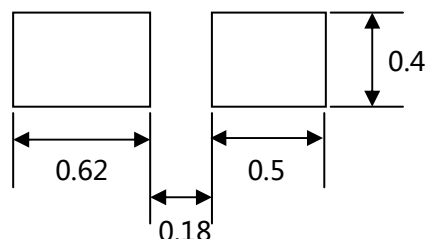
| Symbol         | Rating  | Rating | Unit |
|----------------|---|--------|------|
| V <sub>F</sub> | Maximum Forward Voltage (I <sub>F</sub> =10mA <sub>dc</sub> ) | 0.9    | V    |

**SOD-882**



| DIM | INCHES     |       | MM         |      | NOTE |
|-----|------------|-------|------------|------|------|
|     | MIN        | MAX   | MIN        | MAX  |      |
| A   | 0.018      | 0.022 | 0.45       | 0.55 |      |
| B   | 0.000      | 0.003 | 0.01       | 0.07 |      |
| C   | 0.019 REF. |       | 0.470 REF. |      |      |
| D   | 0.037      | 0.041 | 0.95       | 1.05 |      |
| E   | 0.022      | 0.026 | 0.55       | 0.65 |      |
| F   | 0.017 REF. |       | 0.420 REF. |      |      |
| G   | 0.011      | 0.015 | 0.27       | 0.37 |      |
| H   | 0.001 REF. |       | 0.030 REF. |      |      |
| L   | 0.013      | 0.017 | 0.34       | 0.44 |      |

**Suggested Solder Pad Layout**



**ELECTRICAL CHARACTERISTICS @25°C**

| Type Number | Marking Code | ZENER VOLTAGE <sup>(1)</sup> |     |      |          | Maximum Zener Impedance <sup>(2)</sup> |                     |          | Maximum Reverse Current $I_R$ (Max) @ $V_R$ |       | Typical Temperature Coefficient @ $I_{ZTC}$ mV/°C |      | Test Current $I_{ZTC}$ mA |
|-------------|--------------|------------------------------|-----|------|----------|--|---------------------|----------|---|-------|---|------|---------------------------|
|             |              | $V_Z$ @ $I_{ZT}$             |     |      | $I_{ZT}$ | $Z_{ZT}$ @ $I_{ZT}$                    | $Z_{ZK}$ @ $I_{ZK}$ | $I_{ZK}$ | $I_R$                                       | $V_R$ | Min   | Max. |                           |
|             |              | Min.                         | Nom | Max. | mA       | $\Omega$                               | mA                  | $\mu$ A  | V   |       |   |      |                           |
| BZT52C2V4LP | WX           | 2.2                          | 2.4 | 2.6  | 5        | 100                                    | 600                 | 1.0      | 50  | 1.0   | -3.5  | 0    | 5                         |
| BZT52C2V7LP | W1           | 2.5                          | 2.7 | 2.9  | 5        | 100                                    | 600                 | 1.0      | 20  | 1.0   | -3.5  | 0    | 5                         |
| BZT52C3V0LP | W2           | 2.8                          | 3.0 | 3.2  | 5        | 95                                     | 600                 | 1.0      | 10  | 1.0   | -3.5  | 0    | 5                         |
| BZT52C3V3LP | W3           | 3.1                          | 3.3 | 3.5  | 5        | 95                                     | 600                 | 1.0      | 5   | 1.0   | -3.5  | 0    | 5                         |
| BZT52C3V6LP | W4           | 3.4                          | 3.6 | 3.8  | 5        | 90                                     | 600                 | 1.0      | 5   | 1.0   | -3.5  | 0    | 5                         |
| BZT52C3V9LP | W5           | 3.7                          | 3.9 | 4.1  | 5        | 90                                     | 600                 | 1.0      | 3   | 1.0   | -3.5  | 0    | 5                         |
| BZT52C4V3LP | W6           | 4.0                          | 4.3 | 4.6  | 5        | 90                                     | 600                 | 1.0      | 3   | 1.0   | -3.5  | 0    | 5                         |
| BZT52C4V7LP | W7           | 4.4                          | 4.7 | 5.0  | 5        | 80                                     | 500                 | 1.0      | 3   | 2.0   | -3.5  | 0.2  | 5                         |
| BZT52C5V1LP | 9Y           | 4.8                          | 5.1 | 5.4  | 5        | 60                                     | 480                 | 1.0      | 2   | 2.0   | -2.7  | 1.2  | 5                         |
| BZT52C5V6LP | 9A           | 5.2                          | 5.6 | 6.0  | 5        | 40                                     | 400                 | 1.0      | 1   | 2.0   | -2.0  | 2.5  | 5                         |
| BZT52C6V2LP | 9B           | 5.8                          | 6.2 | 6.6  | 5        | 10                                     | 150                 | 1.0      | 3   | 4.0   | 0.4   | 3.7  | 5                         |
| BZT52C6V8LP | 9C           | 6.4                          | 6.8 | 7.2  | 5        | 15                                     | 80                  | 1.0      | 2   | 4.0   | 1.2   | 4.5  | 5                         |
| BZT52C7V5LP | 9D           | 7.0                          | 7.5 | 7.9  | 5        | 15                                     | 80                  | 1.0      | 1   | 5.0   | 2.5   | 5.3  | 5                         |
| BZT52C8V2LP | 9E           | 7.7                          | 8.2 | 8.7  | 5        | 15                                     | 80                  | 1.0      | 0.7   | 5.0   | 3.2   | 6.2  | 5                         |
| BZT52C9V1LP | 9F           | 8.5                          | 9.1 | 9.6  | 5        | 15                                     | 100                 | 1.0      | 0.5   | 6.0   | 3.8   | 7.0  | 5                         |
| BZT52C10LP  | 9G           | 9.4                          | 10  | 10.6 | 5        | 20                                     | 150                 | 1.0      | 0.2   | 7.0   | 4.5   | 8.0  | 5                         |
| BZT52C11LP  | 9H           | 10.4                         | 11  | 11.6 | 5        | 20                                     | 150                 | 1.0      | 0.1   | 8.0   | 5.4   | 9.0  | 5                         |
| BZT52C12LP  | 9J           | 11.4                         | 12  | 12.7 | 5        | 25                                     | 150                 | 1.0      | 0.1   | 8.0   | 6.0   | 10.0 | 5                         |
| BZT52C13LP  | 9K           | 12.4                         | 13  | 14.1 | 5        | 30                                     | 170                 | 1.0      | 0.1   | 8.0   | 7.0   | 11.0 | 5                         |
| BZT52C15LP  | 9L           | 13.8                         | 15  | 15.6 | 5        | 30                                     | 200                 | 1.0      | 0.1   | 10.5  | 9.2   | 13.0 | 5                         |
| BZT52C16LP  | 9M           | 15.3                         | 16  | 17.1 | 5        | 40                                     | 200                 | 1.0      | 0.1   | 11.2  | 10.4  | 14.0 | 5                         |
| BZT52C18LP  | 9N           | 16.8                         | 18  | 19.1 | 5        | 45                                     | 225                 | 1.0      | 0.1   | 12.6  | 12.4  | 16.0 | 5                         |
| BZT52C20LP  | 9P           | 18.8                         | 20  | 21.2 | 5        | 55                                     | 225                 | 1.0      | 0.1   | 14.0  | 14.4  | 18.0 | 5                         |
| BZT52C22LP  | 9R           | 20.8                         | 22  | 23.3 | 5        | 55                                     | 250                 | 1.0      | 0.1   | 15.4  | 16.4  | 20.0 | 5                         |
| BZT52C24LP  | 9S           | 22.8                         | 24  | 25.6 | 5        | 70                                     | 250                 | 1.0      | 0.1   | 16.8  | 18.4  | 22.0 | 5                         |
| BZT52C36LP  | 9W           | 34                           | 36  | 38   | 2        | 90                                     | 350                 | 0.5      | 0.1   | 25.2  | 36.5  | 45.5 | 5                         |
| BZT52C39LP  | 9X           | 37                           | 39  | 41   | 2        | 130                                    | 350                 | 0.5      | 0.1   | 27.3  | 36.8  | 49.8 | 5                         |

(1) Short duration pulse test used to minimize self-heating effect.

(2) f=1KHz

## Typical characteristics

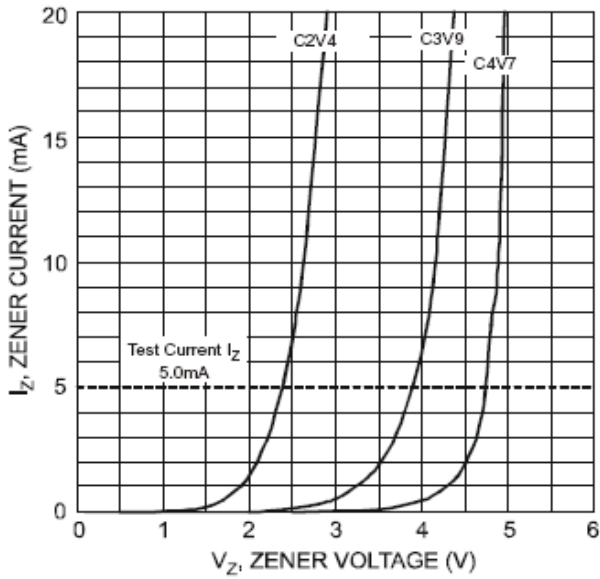


Fig. 1 Typical Zener Breakdown Characteristics

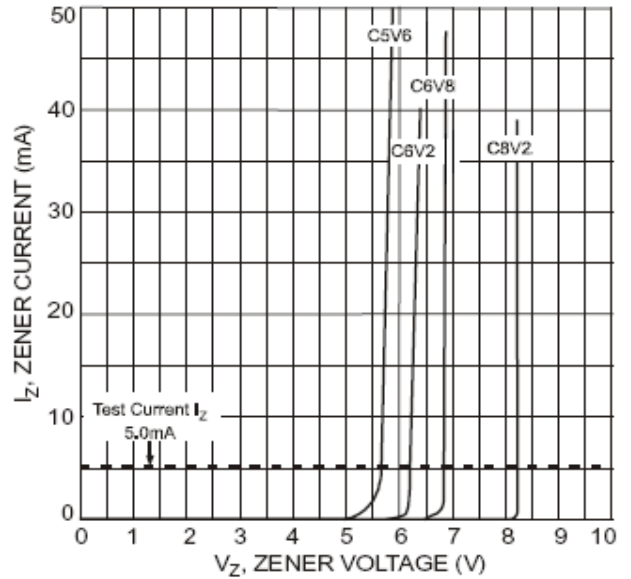


Fig. 2 Typical Zener Breakdown Characteristics

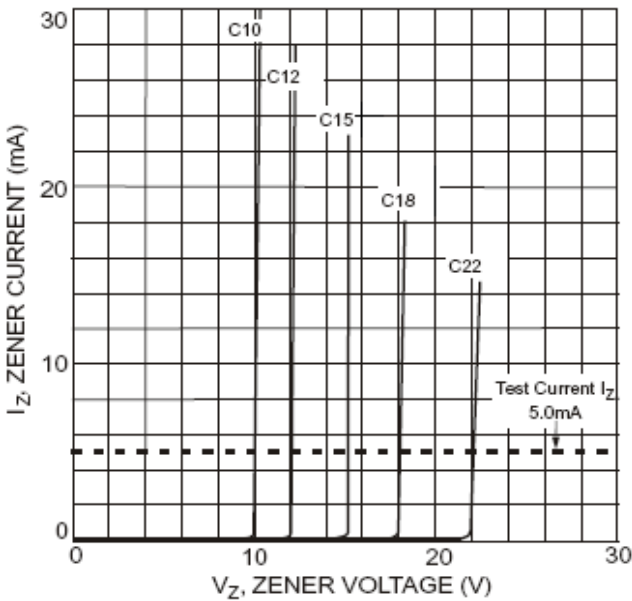


Fig. 3 Typical Zener Breakdown Characteristics

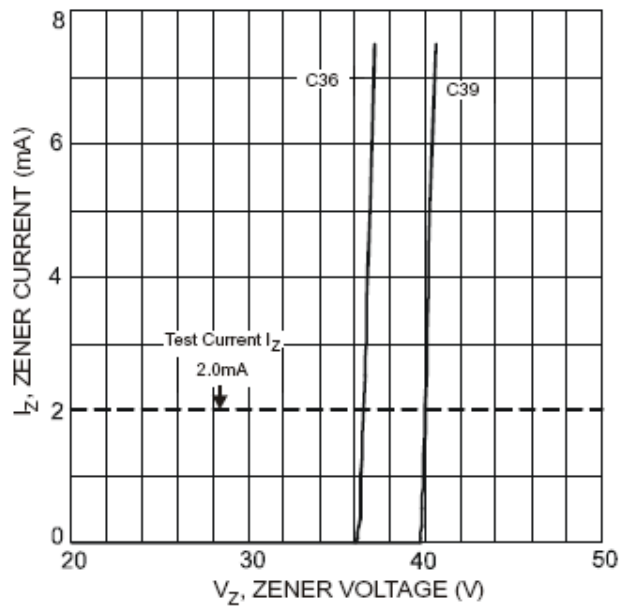
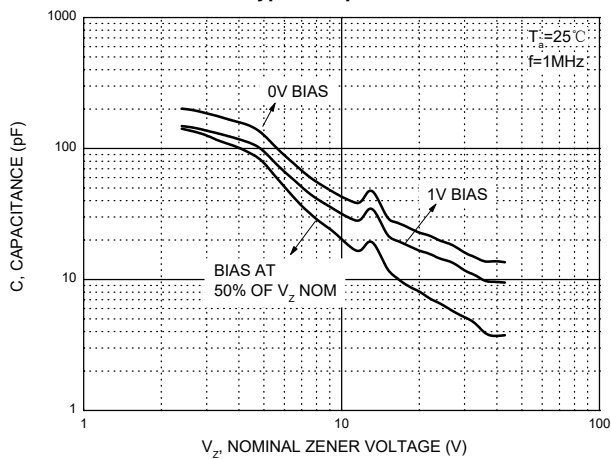


Fig. 4 Typical Zener Breakdown Characteristics

### Typical Capacitance



**Ordering Information :**

| Device         | Packing                |
|----------------|------------------------|
| Part Number-TP | Tape&Reel: 10Kpcs/Reel |

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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