

Small Signal Product

## Hermetically Sealed Glass Zener Voltage Regulators

### FEATURES

- Zener voltage range 2.4 to 75 volts
- Ideal for automated placement
- Hermetically sealed glass
- Compression bonded construction
- All external surfaces are corrosion resistant and leads are readily solderable
- RoHS compliant
- Matte Tin (Sn) lead finish
- Blue color band indicates negative polarity



MINI MELF



| MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T <sub>A</sub> =25°C unless otherwise noted) |                                   |              |      |
|----------------------------------------------------------------------------------------------|-----------------------------------|--------------|------|
| PARAMETER                                                                                    | SYMBOL                            | VALUE        | UNIT |
| Power Dissipation                                                                            | P <sub>D</sub>                    | 500          | mW   |
| Forward Voltage<br>I <sub>F</sub> = 200 mA                                                   | V <sub>F</sub>                    | 1.2          | V    |
| Storage Temperature Range                                                                    | T <sub>J</sub> , T <sub>STG</sub> | - 65 to +200 | °C   |

Not Recommended

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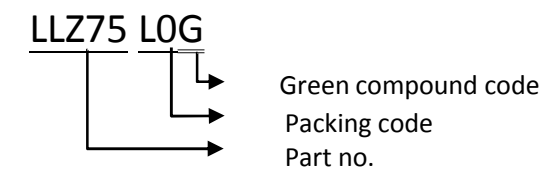
 ELECTRICAL CHARACTERISTICS (  $T_A = 25^\circ\text{C}$  unless otherwise noted )

| Device | $V_Z @ I_{ZT}$<br>(Volts)<br>Nom | $I_{ZT}$<br>(mA) | $Z_{ZT} @ I_{ZT}$<br>( $\Omega$ )<br>Max. | $I_R @ V_R$<br>( $\mu\text{A}$ )<br>Max. | $V_R$<br>(Volts) |
|--------|----------------------------------|------------------|-------------------------------------------|------------------------------------------|------------------|
| LLZ2V4 | 2.4                              | 5                | 100                                       | 120                                      | 1.0              |
| LLZ2V7 | 2.7                              | 5                | 110                                       | 100                                      | 1.0              |
| LLZ3V0 | 3.0                              | 5                | 120                                       | 50                                       | 1.0              |
| LLZ3V3 | 3.3                              | 5                | 120                                       | 20                                       | 1.0              |
| LLZ3V6 | 3.6                              | 5                | 100                                       | 10                                       | 1.0              |
| LLZ3V9 | 3.9                              | 5                | 100                                       | 5                                        | 1.0              |
| LLZ4V3 | 4.3                              | 5                | 100                                       | 5                                        | 1.0              |
| LLZ4V7 | 4.7                              | 5                | 80                                        | 5                                        | 1.0              |
| LLZ5V1 | 5.1                              | 5                | 80                                        | 5                                        | 1.5              |
| LLZ5V6 | 5.6                              | 5                | 60                                        | 5                                        | 2.5              |
| LLZ6V2 | 6.2                              | 5                | 60                                        | 5                                        | 3.0              |
| LLZ6V8 | 6.8                              | 5                | 20                                        | 2.0                                      | 3.5              |
| LLZ7V5 | 7.5                              | 5                | 20                                        | 0.5                                      | 4.0              |
| LLZ8V2 | 8.2                              | 5                | 20                                        | 0.5                                      | 5.0              |
| LLZ9V1 | 9.1                              | 5                | 25                                        | 0.5                                      | 6.0              |
| LLZ10  | 10.0                             | 5                | 30                                        | 0.2                                      | 7.0              |
| LLZ11  | 11.0                             | 5                | 30                                        | 0.2                                      | 8.0              |
| LLZ12  | 12                               | 5                | 30                                        | 0.2                                      | 9.0              |
| LLZ13  | 13                               | 5                | 35                                        | 0.2                                      | 10.0             |
| LLZ15  | 15                               | 5                | 40                                        | 0.2                                      | 11.0             |
| LLZ16  | 16                               | 5                | 40                                        | 0.2                                      | 12.0             |
| LLZ18  | 18                               | 5                | 45                                        | 0.2                                      | 13               |
| LLZ20  | 20                               | 5                | 45                                        | 0.2                                      | 15               |
| LLZ22  | 22                               | 5                | 30                                        | 0.2                                      | 17               |
| LLZ24  | 24                               | 5                | 35                                        | 0.2                                      | 19               |
| LLZ27  | 27                               | 5                | 45                                        | 0.2                                      | 21               |
| LLZ30  | 30                               | 5                | 55                                        | 0.2                                      | 23               |
| LLZ33  | 33                               | 5                | 65                                        | 0.2                                      | 25               |
| LLZ36  | 36                               | 5                | 75                                        | 0.2                                      | 27               |
| LLZ39  | 39                               | 5                | 85                                        | 0.2                                      | 30               |
| LLZ43  | 43                               | 5                | 90                                        | 0.2                                      | 33               |
| LLZ47  | 47                               | 5                | 90                                        | 0.2                                      | 36               |
| LLZ51  | 51                               | 5                | 110                                       | 0.2                                      | 39               |
| LLZ56  | 56                               | 5                | 110                                       | 0.2                                      | 43               |
| LLZ62  | 62                               | 2                | 201                                       | 0.2                                      | 47               |
| LLZ68  | 68                               | 2                | 230                                       | 0.2                                      | 51               |
| LLZ75  | 75                               | 2                | 240                                       | 0.2                                      | 56               |

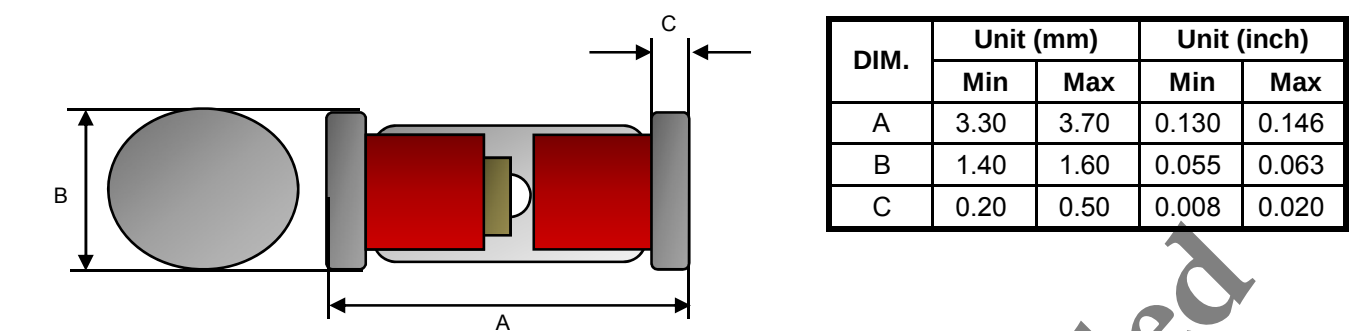
- Notes :
1. The type numbers listed have zener voltage as shown and have a standard tolerance on the nominal zener voltage of  $\pm 5\%$ .
  2. For detailed information on price, availability and deliver of nominal zener voltages between the voltages shown and tighter voltage tolerances, contact your nearest Taiwan Semiconductor representative.
  3. The zener impedance is derived from the 60-cycle ac voltage, which results when an ac current having an RMS value equal to 10% of the dc zener current ( $I_{ZT}$  or  $I_{ZK}$ ) is superimposed to  $I_{ZT}$  or  $I_{ZK}$ .

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ORDER INFORMATION (EXAMPLE)



PACKAGE OUTLINE DIMENSION



SUGGEST PAD LAYOUT



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Not Recommended

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[LLZ43](#) [LLZ47](#) [LLZ51](#) [LLZ56](#) [LLZ62](#) [LLZ68](#) [LLZ75](#) [LLZ2V0](#) [LLZ2V2](#) [LLZ2V4](#) [LLZ2V7](#) [LLZ3V0](#) [LLZ3V3](#) [LLZ3V6](#)  
[LLZ3V9](#) [LLZ4V3](#) [LLZ4V7](#) [LLZ5V1](#) [LLZ5V6](#) [LLZ6V2](#) [LLZ6V8](#) [LLZ7V5](#) [LLZ8V2](#) [LLZ9V1](#) [LLZ3V3 L0G](#) [LLZ13 L0](#)  
[LLZ30 L0](#) [LLZ27 L0G](#) [LLZ11 L1G](#) [LLZ12 L0G](#) [LLZ56 L0G](#) [LLZ16 L0G](#) [LLZ4V7 L0G](#) [LLZ3V3 L1G](#) [LLZ2V4 L0G](#)  
[LLZ10 L1G](#) [LLZ13 L0G](#) [LLZ12 L1G](#) [LLZ27 L0](#) [LLZ20 L0G](#) [LLZ11 L0G](#) [LLZ2V4 L1G](#) [LLZ5V1 L1G](#) [LLZ51 L0](#) [LLZ43](#)  
[L1G](#) [LLZ22 L0](#) [LLZ3V0 L0G](#) [LLZ5V6 L1G](#) [LLZ15 L0](#) [LLZ5V1 L0G](#) [LLZ18 L0](#) [LLZ36 L1G](#) [LLZ51 L0G](#) [LLZ43 L0G](#)  
[LLZ20 L1G](#) [LLZ5V6 L0](#) [LLZ56 L1G](#) [LLZ18 L1G](#) [LLZ33 L0](#) [LLZ16 L1G](#) [LLZ39 L0G](#) [LLZ13 L1G](#) [LLZ4V3 L1G](#) [LLZ43](#)  
[L0](#) [LLZ39 L0](#) [LLZ4V7 L0](#) [LLZ4V7 L1G](#) [LLZ16 L0](#) [LLZ36 L0](#) [LLZ3V3 L0](#) [LLZ24 L0G](#) [LLZ3V6 L0](#) [LLZ47 L0](#) [LLZ47](#)  
[L0G](#) [LLZ4V3 L0G](#) [LLZ10 L0G](#) [LLZ33 L0G](#) [LLZ3V9 L1G](#) [LLZ39 L1G](#) [LLZ2V7 L0](#) [LLZ22 L1G](#) [LLZ4V3 L0](#) [LLZ10 L0](#)  
[LLZ27 L1G](#) [LLZ11 L0](#)