

Small Signal Product

Hermetically Sealed Glass Zener Voltage Regulators

FEATURES

- Zener voltage range 2.4 to 56 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
- Color band indicates negative polarity


MINI MELF


| MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T _A =25°C unless otherwise noted) | | | |
|--|-----------------------------------|--------------|------|
| PARAMETER | SYMBOL | VALUE | UNIT |
| Power Dissipation | P _D | 500 | mW |
| Forward Voltage | V _F | 1.1 | V |
| Storage Temperature Range | T _J , T _{STG} | - 65 to +200 | °C |

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

| Device | V _Z @ I _{ZT} (Volts) Nom | I _{ZT} (mA) | Z _{ZT} @ I _{ZT} (Ω) Max. | Z _{ZK} @ I _{ZK} =0.25mA (Ω) Max. | I _R @ V _R (μA) Max. | V _R (Volts) |
|----------|--|-------------------------|---|--|--|---------------------------|
| LLZ5221B | 2.4 | 20 | 30 | 1200 | 100 | 1.0 |
| LLZ5222B | 2.5 | 20 | 30 | 1250 | 100 | 1.0 |
| LLZ5223B | 2.7 | 20 | 30 | 1300 | 75 | 1.0 |
| LLZ5224B | 2.8 | 20 | 30 | 1400 | 75 | 1.0 |
| LLZ5225B | 3.0 | 20 | 30 | 1600 | 50 | 1.0 |
| LLZ5226B | 3.3 | 20 | 28 | 1600 | 25 | 1.0 |
| LLZ5227B | 3.6 | 20 | 24 | 1700 | 15 | 1.0 |
| LLZ5228B | 3.9 | 20 | 23 | 1900 | 10 | 1.0 |
| LLZ5229B | 4.3 | 20 | 22 | 2000 | 5.0 | 1.0 |
| LLZ5230B | 4.7 | 20 | 19 | 1900 | 5.0 | 2.0 |
| LLZ5231B | 5.1 | 20 | 17 | 1600 | 5.0 | 2.0 |
| LLZ5232B | 5.6 | 20 | 11 | 1600 | 5.0 | 3.0 |
| LLZ5233B | 6.0 | 20 | 7 | 16900 | 5.0 | 3.5 |
| LLZ5234B | 6.2 | 20 | 7 | 1000 | 5.0 | 4.0 |
| LLZ5235B | 6.8 | 20 | 5 | 750 | 3.0 | 5.0 |
| LLZ5236B | 7.5 | 20 | 6 | 500 | 3.0 | 6.0 |
| LLZ5237B | 8.2 | 20 | 8 | 500 | 3.0 | 6.5 |
| LLZ5238B | 8.7 | 20 | 8 | 600 | 3.0 | 6.5 |
| LLZ5239B | 9.1 | 20 | 10 | 600 | 2.0 | 7.0 |
| LLZ5240B | 10 | 20 | 17 | 600 | 1.0 | 8.0 |
| LLZ5241B | 11 | 20 | 22 | 600 | 0.5 | 8.4 |
| LLZ5242B | 12 | 20 | 30 | 600 | 0.1 | 9.1 |
| LLZ5243B | 13 | 9.5 | 13 | 600 | 0.1 | 9.9 |
| LLZ5244B | 14 | 9.0 | 15 | 600 | 0.1 | 10 |
| LLZ5245B | 15 | 8.5 | 16 | 600 | 0.1 | 11 |
| LLZ5246B | 16 | 7.8 | 17 | 600 | 0.1 | 12 |
| LLZ5247B | 16 | 7.4 | 19 | 600 | 0.1 | 13 |
| LLZ5248B | 18 | 7.0 | 21 | 600 | 0.1 | 14 |
| LLZ5249B | 19 | 6.6 | 23 | 600 | 0.1 | 14 |
| LLZ5250B | 20 | 6.2 | 25 | 600 | 0.1 | 15 |
| LLZ5251B | 22 | 5.6 | 29 | 600 | 0.1 | 17 |
| LLZ5252B | 24 | 5.2 | 33 | 600 | 0.1 | 18 |
| LLZ5253B | 25 | 5.0 | 35 | 600 | 0.1 | 19 |
| LLZ5254B | 27 | 5.0 | 41 | 600 | 0.1 | 21 |
| LLZ5255B | 28 | 4.5 | 44 | 600 | 0.1 | 21 |
| LLZ5256B | 30 | 4.2 | 49 | 600 | 0.1 | 23 |
| LLZ5257B | 33 | 3.8 | 58 | 700 | 0.1 | 25 |
| LLZ5258B | 36 | 3.4 | 70 | 700 | 0.1 | 27 |
| LLZ5259B | 39 | 3.2 | 80 | 800 | 0.1 | 30 |
| LLZ5260B | 43 | 3.0 | 93 | 900 | 0.1 | 33 |
| LLZ5261B | 47 | 2.7 | 105 | 1000 | 0.1 | 36 |
| LLZ5262B | 51 | 2.5 | 125 | 1100 | 0.1 | 39 |
| LLZ5263B | 56 | 2.2 | 150 | 1300 | 0.1 | 43 |

- Notes :
1. The type numbers listed have zener voltage as shown and have a standard tolerance on the nominal zener voltage of $\pm 5\%$ in Blue marking, suffix A= $\pm 10\%$ in Orange marking and D= $\pm 1\%$ in Yellow marking.
 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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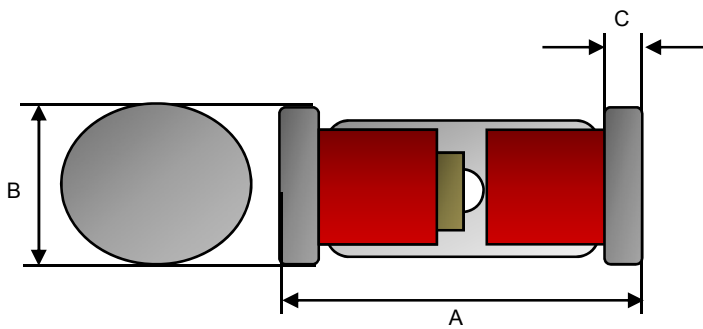
| ORDERING INFORMATION | | | | | |
|----------------------|------------------|--------------|---------------------|-----------|----------------|
| PART NO. | MANUFACTURE CODE | PACKING CODE | GREEN COMPOUND CODE | PACKAGE | PACKING |
| LLZ52xxB (Note1) | (Note 2) | L0 | G | MINI MELF | 10K / 13" Reel |
| | | L1 | | | 2.5K / 7" Reel |

Note 1: "xxx" defines voltage from 2.4V (LLZ5221B) to 56V (LLZ5263B)

Note 2: Manufacture special control, if empty means no special control requirement.

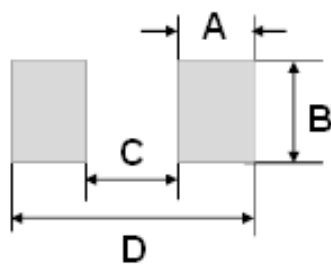
| EXAMPLE | | | | | |
|-----------------|----------|------------------|--------------|---------------------|----------------|
| PREFERRED P/N | PART NO. | MANUFACTURE CODE | PACKING CODE | GREEN COMPOUND CODE | DESCRIPTION |
| LLZ5221B L0G | LLZ5221B | | L0 | G | Green compound |
| LLZ5221B-L0 L0G | LLZ5221B | L0 | L0 | G | Green compound |

PACKAGE OUTLINE DIMENSION



| DIM. | Unit (mm) | | Unit (inch) | |
|------|-----------|------|-------------|-------|
| | Min | Max | Min | Max |
| A | 3.30 | 3.70 | 0.130 | 0.146 |
| B | 1.40 | 1.60 | 0.055 | 0.063 |
| C | 0.20 | 0.50 | 0.008 | 0.020 |

SUGGEST PAD LAYOUT



| DIM. | Unit (mm) | | Unit (inch) | |
|------|-----------|--|-------------|--|
| | Typ. | | Typ. | |
| A | 1.25 | | 0.049 | |
| B | 2.00 | | 0.079 | |
| C | 2.50 | | 0.098 | |
| D | 5.00 | | 0.197 | |

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