

CD5221B thru CD5272B



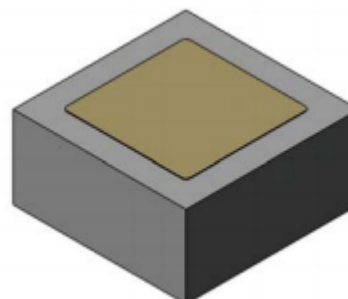
Zener Diode Chip Series

Rev. V1

Features

- All Junctions Completely Protected with Silicon Dioxide
- 0.5 W Capability with Proper Heat Sinking
- Electrically Equivalent to 1N5221B - 1N5272B

Die



Description

These 0.5 W zener diodes are electrically equivalent to the 1N5221B - 1N5272B series diodes. They are compatible with all wire bonding and die attach techniques with the exception of solder reflow.

Electrical Specifications: $T_A = +25^\circ\text{C}$

| Part # | Zener Voltage $V_Z @ I_{ZT}$ (Note 1 & 3) | Zener Test Current I_{ZT} | Zener Impedance $Z_{ZT} @ I_{ZT} / Z_{ZK} @ I_{ZK} = 250 \mu\text{A}$ (Note 2) | | Reverse Current $I_R @ V_R$ | |
|---------|---|-----------------------------------|---|------|--------------------------------|-------|
| | Nominal | | Maximum | | Maximum | |
| | V | mA | Ohms | Ohms | μA | VOLTS |
| CD5221B | 2.4 | 20 | 30 | 1200 | 100 | 1.0 |
| CD5222B | 2.5 | 20 | 30 | 1250 | 100 | 1.0 |
| CD5223B | 2.7 | 20 | 30 | 1300 | 75 | 1.0 |
| CD5224B | 2.8 | 20 | 30 | 1400 | 75 | 1.0 |
| CD5225B | 3.0 | 20 | 29 | 1600 | 50 | 1.0 |
| CD5226B | 3.3 | 20 | 28 | 1600 | 25 | 1.0 |
| CD5227B | 3.6 | 20 | 24 | 1700 | 15 | 1.0 |
| CD5228B | 3.9 | 20 | 23 | 1900 | 10 | 1.0 |
| CD5229B | 4.3 | 20 | 22 | 2000 | 5.0 | 1.0 |
| CD5230B | 4.7 | 20 | 19 | 1900 | 5.0 | 2.0 |
| CD5231B | 5.1 | 20 | 17 | 600 | 5.0 | 2.0 |
| CD5232B | 5.6 | 20 | 11 | 1600 | 5.0 | 3.0 |
| CD5233B | 6.0 | 20 | 7.0 | 1600 | 5.0 | 3.5 |
| CD5234B | 6.2 | 20 | 7.0 | 1000 | 5.0 | 4.0 |
| CD5235B | 6.8 | 20 | 5.0 | 750 | 3.0 | 5.0 |
| CD5236B | 7.5 | 20 | 6.0 | 500 | 3.0 | 6.0 |
| CD5237B | 8.2 | 20 | 8.0 | 500 | 3.0 | 6.5 |
| CD5238B | 8.7 | 20 | 8.0 | 600 | 3.0 | 6.5 |
| CD5239B | 9.1 | 20 | 10 | 600 | 3.0 | 7.0 |
| CD5240B | 10 | 20 | 17 | 600 | 3.0 | 8.0 |

(Continued next page)

1 * Restrictions on Hazardous Substances, European Union Directive 2011/65/EU.

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| Part # | Zener Voltage $V_Z @ I_{ZT}$ (Note 1 & 3) | Zener Test Current I_{ZT} | Zener Impedance $Z_{ZT} @ I_{ZT} / Z_{ZK} @ I_{ZK} = 250 \mu\text{A}$ (Note 2) | | Reverse Current $I_R @ V_R$ | |
|---------|---|--------------------------------|--|------|--------------------------------|-------|
| | Nominal | | Maximum | | Maximum | |
| | V | mA | Ohms | Ohms | μA | VOLTS |
| CD5241B | 11 | 20 | 22 | 600 | 2.0 | 8.4 |
| CD5242B | 12 | 20 | 30 | 600 | 1.0 | 9.1 |
| CD5243B | 13 | 9.5 | 13 | 600 | 0.5 | 9.9 |
| CD5244B | 14 | 9.0 | 15 | 600 | 0.1 | 10 |
| CD5245B | 15 | 8.5 | 16 | 600 | 0.1 | 11 |
| CD5246B | 16 | 7.8 | 17 | 600 | 0.1 | 12 |
| CD5247B | 17 | 7.4 | 19 | 600 | 0.1 | 13 |
| CD5248B | 18 | 7.0 | 21 | 600 | 0.1 | 14 |
| CD5249B | 19 | 6.6 | 23 | 600 | 0.1 | 14 |
| CD5250B | 20 | 6.2 | 25 | 600 | 0.1 | 15 |
| CD5251B | 22 | 5.6 | 29 | 600 | 0.1 | 17 |
| CD5252B | 24 | 5.2 | 33 | 600 | 0.1 | 18 |
| CD5253B | 25 | 5.0 | 35 | 600 | 0.1 | 19 |
| CD5254B | 27 | 4.6 | 41 | 600 | 0.1 | 21 |
| CD5255B | 28 | 4.5 | 44 | 600 | 0.1 | 21 |
| CD5256B | 30 | 4.2 | 49 | 600 | 0.1 | 23 |
| CD5257B | 33 | 3.8 | 58 | 700 | 0.1 | 25 |
| CD5258B | 36 | 3.4 | 70 | 700 | 0.1 | 27 |
| CD5259B | 39 | 3.2 | 80 | 800 | 0.1 | 30 |
| CD5260B | 43 | 3.0 | 93 | 900 | 0.1 | 33 |
| CD5261B | 47 | 2.7 | 105 | 1000 | 0.1 | 36 |
| CD5262B | 51 | 2.5 | 125 | 1100 | 0.1 | 39 |
| CD5263B | 56 | 2.2 | 150 | 1300 | 0.1 | 43 |
| CD5264B | 60 | 2.1 | 170 | 1400 | 0.1 | 46 |
| CD5265B | 62 | 2.0 | 185 | 1400 | 0.1 | 47 |
| CD5266B | 68 | 1.8 | 230 | 1600 | 0.1 | 52 |
| CD5267B | 75 | 1.7 | 270 | 1700 | 0.1 | 56 |
| CD5268B | 82 | 1.5 | 330 | 2000 | 0.1 | 62 |
| CD5269B | 87 | 1.4 | 370 | 2200 | 0.1 | 68 |
| CD5270B | 91 | 1.4 | 400 | 2300 | 0.1 | 69 |
| CD5271B | 100 | 1.3 | 500 | 2600 | 0.1 | 76 |
| CD5272B | 110 | 1.1 | 750 | 3000 | 0.1 | 84 |

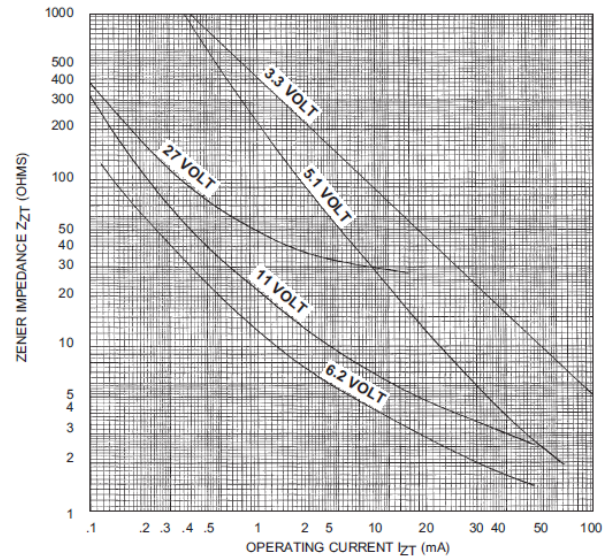
1. Zener voltage range equals "nominal Zener voltage" (see table) +5%, for "B" Suffix types. "A" Suffix denotes +10%. No Suffix denotes +20%. "C" suffix = +2% tolerance and "D" suffix = +1% tolerance.
2. Zener impedance is derived by superimposing on IZTA 60 Hz rms AC current equal to 250 μA .
3. Zener voltage is read using a pulse measurement, 10 milliseconds maximum.

Absolute Maximum Ratings^{4,5}

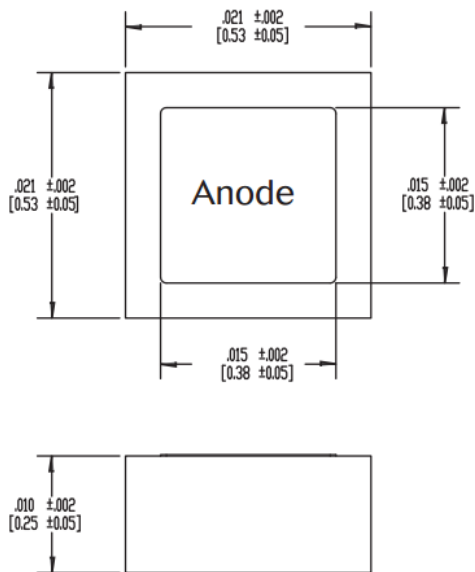
| Parameter | Absolute Maximum |
|-----------------------|------------------|
| Forward Voltage | 1.5 V @ 200 mA |
| Operating Temperature | -65°C to +175°C |
| Storage Temperature | -65°C to +175°C |

- Exceeding any one or combination of these limits may cause permanent damage to this device.
- MACOM does not recommend sustained operation near these survivability limits.

Zener Impedance vs. Operating Current



Die



Metallization: Top: (anode) AL
Back: (cathode) Au

AL Thickness: 25,000 Å Minimum

Gold Thickness: 4,000 Å Minimum

Chip Thickness: 10 mils

Circuit Layout Data: For Zener operation, cathode must be operated positive with respect to anode.

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