



**THE DATASHEET OF  
CDLL5237B/TR**



- ZENER DIODES
- LEADLESS PACKAGE FOR SURFACE MOUNT
- DOUBLE PLUG CONSTRUCTION
- METALLURGICALLY BONDED

**CDLL5221**  
thru  
**CDLL5272B**

### MAXIMUM RATINGS

Operating Temperature: -65°C to +175°C  
Storage Temperature: -65°C to +175°C  
Power Derating: 10 mW / °C above  $T_{EC} = +125^{\circ}C$   
Forward Voltage: @ 200 mA: 1.1 Volts maximum

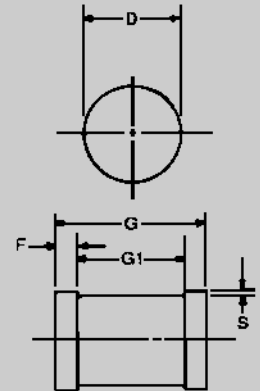
### ELECTRICAL CHARACTERISTICS @ 25°C, unless otherwise specified

| CDI TYPE NUMBER | NOMINAL ZENER VOLTAGE $V_Z @ I_{ZT}$ (Note 1 & 3) | TEST CURRENT $I_{ZT}$ | MAXIMUM ZENER IMPEDANCE (Note 2) |                          | MAXIMUM REVERSE CURRENT $I_R @ V_R$ |       |
|-----------------|---|-----------------------|----------------------------------|--------------------------|-------------------------------------|-------|
|                 |   |                       | $Z_{ZT} @ I_{ZT}$                | $Z_{ZK} @ I_{ZK}=0.25mA$ | $\mu A$                             | VOLTS |
|                 |   |                       | OHMS                             | OHMS                     |                                     |       |
| CDLL5221B       | 2.4   | 20                    | 30                               | 1200                     | 100                                 | 1.0   |
| CDLL5222B       | 2.5   | 20                    | 30                               | 1250                     | 100                                 | 1.0   |
| CDLL5223B       | 2.7   | 20                    | 30                               | 1300                     | 75                                  | 1.0   |
| CDLL5224B       | 2.8   | 20                    | 30                               | 1400                     | 75                                  | 1.0   |
| CDLL5225B       | 3.0   | 20                    | 29                               | 1600                     | 50                                  | 1.0   |
| CDLL5226B       | 3.3   | 20                    | 28                               | 1600                     | 25                                  | 1.0   |
| CDLL5227B       | 3.6   | 20                    | 24                               | 1700                     | 15                                  | 1.0   |
| CDLL5228B       | 3.9   | 20                    | 23                               | 1900                     | 10                                  | 1.0   |
| CDLL5229B       | 4.3   | 20                    | 22                               | 2000                     | 5.0                                 | 1.0   |
| CDLL5230B       | 4.7   | 20                    | 19                               | 1900                     | 5.0                                 | 2.0   |
| CDLL5231B       | 5.1   | 20                    | 17                               | 1600                     | 5.0                                 | 2.0   |
| CDLL5232B       | 5.6   | 20                    | 11                               | 1600                     | 5.0                                 | 3.0   |
| CDLL5233B       | 6.0   | 20                    | 7.0                              | 1600                     | 5.0                                 | 3.5   |
| CDLL5234B       | 6.2   | 20                    | 7.0                              | 1000                     | 5.0                                 | 4.0   |
| CDLL5235B       | 6.8   | 20                    | 5.0                              | 750                      | 3.0                                 | 5.0   |
| CDLL5236B       | 7.5   | 20                    | 6.0                              | 500                      | 3.0                                 | 6.0   |
| CDLL5237B       | 8.2   | 20                    | 8.0                              | 500                      | 3.0                                 | 6.5   |
| CDLL5238B       | 8.7   | 20                    | 8.0                              | 600                      | 3.0                                 | 6.5   |
| CDLL5239B       | 9.1   | 20                    | 10                               | 600                      | 3.0                                 | 7.0   |
| CDLL5240B       | 10  | 20                    | 17                               | 600                      | 3.0                                 | 8.0   |
| CDLL5241B       | 11  | 20                    | 22                               | 600                      | 2.0                                 | 8.4   |
| CDLL5242B       | 12  | 20                    | 30                               | 600                      | 1.0                                 | 9.1   |
| CDLL5243B       | 13  | 9.5                   | 13                               | 600                      | 0.5                                 | 9.9   |
| CDLL5244B       | 14  | 9.0                   | 15                               | 600                      | 0.1                                 | 10    |
| CDLL5245B       | 15  | 8.5                   | 16                               | 600                      | 0.1                                 | 11    |
| CDLL5246B       | 16  | 7.8                   | 17                               | 600                      | 0.1                                 | 12    |
| CDLL5247B       | 17  | 7.4                   | 19                               | 600                      | 0.1                                 | 13    |
| CDLL5248B       | 18  | 7.0                   | 21                               | 600                      | 0.1                                 | 14    |
| CDLL5249B       | 19  | 6.6                   | 23                               | 600                      | 0.1                                 | 14    |
| CDLL5250B       | 20  | 6.2                   | 25                               | 600                      | 0.1                                 | 15    |
| CDLL5251B       | 22  | 5.6                   | 29                               | 600                      | 0.1                                 | 17    |
| CDLL5252B       | 24  | 5.2                   | 33                               | 600                      | 0.1                                 | 18    |
| CDLL5253B       | 25  | 5.0                   | 35                               | 600                      | 0.1                                 | 19    |
| CDLL5254B       | 27  | 4.6                   | 41                               | 600                      | 0.1                                 | 21    |
| CDLL5255B       | 28  | 4.5                   | 44                               | 600                      | 0.1                                 | 21    |
| CDLL5256B       | 30  | 4.2                   | 49                               | 600                      | 0.1                                 | 23    |
| CDLL5257B       | 33  | 3.8                   | 58                               | 700                      | 0.1                                 | 25    |
| CDLL5258B       | 36  | 3.4                   | 70                               | 700                      | 0.1                                 | 27    |
| CDLL5259B       | 39  | 3.2                   | 80                               | 800                      | 0.1                                 | 30    |
| CDLL5260B       | 43  | 3.0                   | 93                               | 900                      | 0.1                                 | 33    |
| CDLL5261B       | 47  | 2.7                   | 105                              | 1000                     | 0.1                                 | 36    |
| CDLL5262B       | 51  | 2.5                   | 125                              | 1100                     | 0.1                                 | 39    |
| CDLL5263B       | 56  | 2.2                   | 150                              | 1300                     | 0.1                                 | 43    |
| CDLL5264B       | 60  | 2.1                   | 170                              | 1400                     | 0.1                                 | 46    |
| CDLL5265B       | 62  | 2.0                   | 185                              | 1400                     | 0.1                                 | 47    |
| CDLL5266B       | 68  | 1.8                   | 230                              | 1600                     | 0.1                                 | 52    |
| CDLL5267B       | 75  | 1.7                   | 270                              | 1700                     | 0.1                                 | 56    |
| CDLL5268B       | 82  | 1.5                   | 330                              | 2000                     | 0.1                                 | 62    |
| CDLL5269B       | 87  | 1.4                   | 370                              | 2200                     | 0.1                                 | 68    |
| CDLL5270B       | 91  | 1.4                   | 400                              | 2300                     | 0.1                                 | 69    |
| CDLL5271B       | 100   | 1.3                   | 500                              | 2600                     | 0.1                                 | 76    |
| CDLL5272B       | 110   | 1.1                   | 750                              | 3000                     | 0.1                                 | 84    |

**NOTE 1** "B" suffix =  $\pm 5.0\%$ , "A" suffix =  $\pm 10\%$ , no suffix =  $\pm 20\%$ , "C" suffix =  $\pm 2\%$  and "D" suffix =  $\pm 1\%$ .

**NOTE 2** Zener impedance is derived by superimposing on  $I_{ZT}$  A 60Hz rms a.c. current equal to 10% of  $I_{ZT}$ .

**NOTE 3** Nominal Zener voltage is measured with the device junction in thermal equilibrium at an ambient temperature of  $25^{\circ}C \pm 3^{\circ}C$ .



| DIM | MILLIMETERS |      | INCHES    |       |
|-----|-------------|------|-----------|-------|
|     | MIN         | MAX  | MIN       | MAX   |
| D   | 1.60        | 1.70 | 0.063     | 0.067 |
| F   | 0.41        | 0.55 | 0.016     | 0.022 |
| G   | 3.30        | 3.70 | .130      | .146  |
| G1  | 2.54 REF.   |      | .100 REF. |       |
| S   | 0.03 MIN.   |      | .001 MIN. |       |

**FIGURE 1**

### DESIGN DATA

**CASE:** DO-213AA, Hermetically sealed glass case. (MELF, SOD-80, LL34)

**LEAD FINISH:** Tin / Lead

**THERMAL RESISTANCE: ( $R_{\theta JEC}$ ):** 100 °C/W maximum at L = 0 inch

**THERMAL IMPEDANCE: ( $Z_{\theta JX}$ ):** 35 °C/W maximum

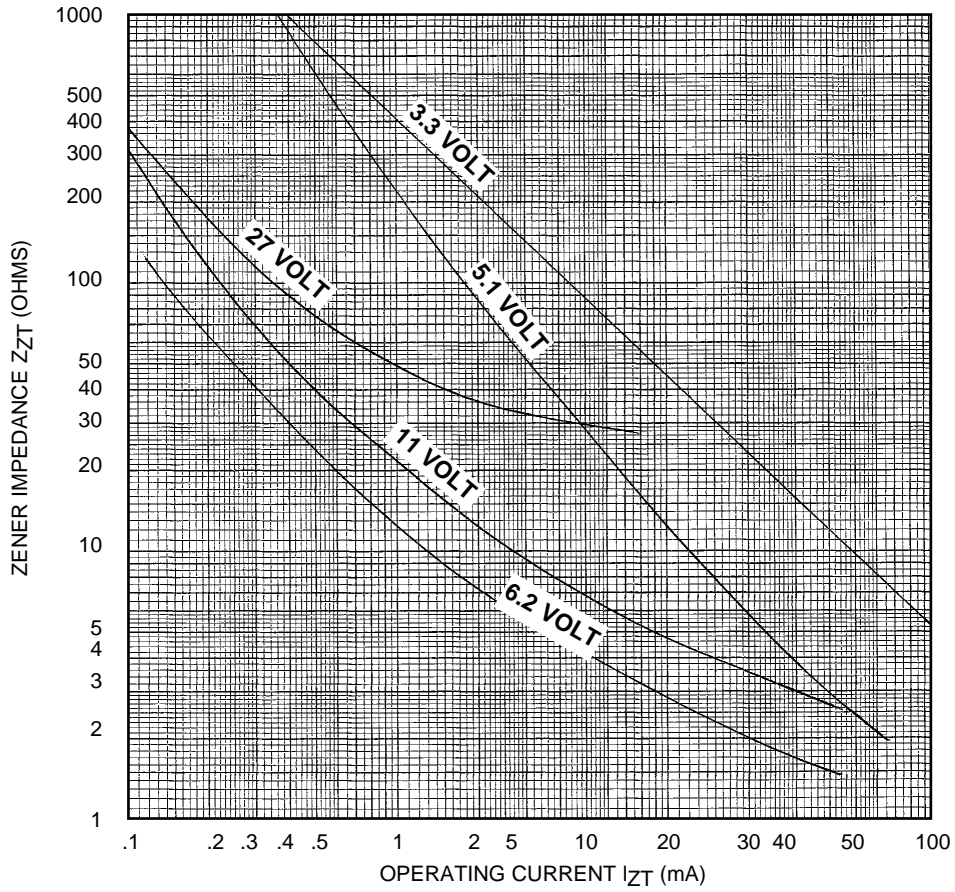
**POLARITY:** Diode to be operated with the banded (cathode) end positive.

**MOUNTING SURFACE SELECTION:** The Axial Coefficient of Expansion (COE) Of this Device is Approximately +6PPM/°C. The COE of the Mounting Surface System Should Be Selected To Provide A Suitable Match With This Device.



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# CDLL5221B thru CDLL5272B



**FIGURE 3**  
**ZENER IMPEDANCE VS. OPERATING CURRENT**

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