

**CLL5221B THRU CLL5267B**  
**SURFACE MOUNT ZENER DIODE**  
**2.4 VOLTS THRU 75 VOLTS**  
**500mW, 5% TOLERANCE**



**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CLL5221B Series Silicon Zener Diode is a high quality voltage regulator designed for use in industrial, commercial, entertainment, and computer applications.



**MAXIMUM RATINGS:**

Power Dissipation (@ $T_A=50^{\circ}C$ )  
 Operating and Storage Temperature  
 Tolerance "B"  
 Tolerance "C"  
 Tolerance "D"

**SYMBOL**

$P_D$  500  
 $T_J, T_{stg}$  -65 to +200  
 ±5  
 ±2  
 ±1

**UNIT**

mW  
 $^{\circ}C$   
 %  
 %  
 %

**ELECTRICAL CHARACTERISTICS:** ( $T_A=25^{\circ}C$ ),  $V_F=1.25V$  MAX @  $I_F=200mA$  FOR ALL TYPES.

| TYPE NO.  | ZENER VOLTAGE<br>$V_Z @ I_{ZT}$ |       |       | TEST CURRENT<br>$I_{ZT}$ | MAXIMUM ZENER IMPEDANCE |                   |             | MAXIMUM REVERSE CURRENT |         | MAXIMUM ZENER VOLTAGE TEMPERATURE COEFFICIENT<br>$\Theta V_Z$ |
|-----------|---------------------------------|-------|-------|--------------------------|-------------------------|-------------------|-------------|-------------------------|---------|---------------------------------------------------------------|
|           | MIN                             | NOM   | MAX   |                          | $Z_{ZT} @ I_{ZT}$       | $Z_{ZK} @ I_{ZK}$ | $I_R @ V_R$ |                         |         |                                                               |
|           | VOLTS                           | VOLTS | VOLTS |                          | mA                      | $\Omega$          | $\Omega$    | mA                      | $\mu A$ |                                                               |
| CLL5221B* | 2.280                           | 2.4   | 2.520 | 20                       | 30                      | 1200              | 0.25        | 100                     | 1.0     | -0.085                                                        |
| CLL5222B* | 2.375                           | 2.5   | 2.625 | 20                       | 30                      | 1250              | 0.25        | 100                     | 1.0     | -0.085                                                        |
| CLL5223B* | 2.565                           | 2.7   | 2.835 | 20                       | 30                      | 1300              | 0.25        | 75                      | 1.0     | -0.080                                                        |
| CLL5224B* | 2.660                           | 2.8   | 2.940 | 20                       | 30                      | 1400              | 0.25        | 75                      | 1.0     | -0.080                                                        |
| CLL5225B  | 2.850                           | 3.0   | 3.150 | 20                       | 29                      | 1600              | 0.25        | 50                      | 1.0     | -0.075                                                        |
| CLL5226B  | 3.135                           | 3.3   | 3.465 | 20                       | 28                      | 1600              | 0.25        | 25                      | 1.0     | -0.070                                                        |
| CLL5227B  | 3.420                           | 3.6   | 3.780 | 20                       | 24                      | 1700              | 0.25        | 15                      | 1.0     | -0.065                                                        |
| CLL5228B  | 3.705                           | 3.9   | 4.095 | 20                       | 23                      | 1900              | 0.25        | 10                      | 1.0     | -0.060                                                        |
| CLL5229B  | 4.085                           | 4.3   | 4.515 | 20                       | 22                      | 2000              | 0.25        | 5.0                     | 1.0     | ±0.055                                                        |
| CLL5230B  | 4.465                           | 4.7   | 4.935 | 20                       | 19                      | 1900              | 0.25        | 5.0                     | 2.0     | ±0.030                                                        |
| CLL5231B  | 4.845                           | 5.1   | 5.355 | 20                       | 17                      | 1600              | 0.25        | 5.0                     | 2.0     | ±0.030                                                        |
| CLL5232B  | 5.320                           | 5.6   | 5.880 | 20                       | 11                      | 1600              | 0.25        | 5.0                     | 3.0     | +0.038                                                        |
| CLL5233B  | 5.700                           | 6.0   | 6.300 | 20                       | 7.0                     | 1600              | 0.25        | 5.0                     | 3.5     | +0.038                                                        |
| CLL5234B  | 5.890                           | 6.2   | 6.510 | 20                       | 7.0                     | 1000              | 0.25        | 5.0                     | 4.0     | +0.045                                                        |
| CLL5235B  | 6.460                           | 6.8   | 7.140 | 20                       | 5.0                     | 750               | 0.25        | 3.0                     | 5.0     | +0.050                                                        |
| CLL5236B  | 7.125                           | 7.5   | 7.875 | 20                       | 6.0                     | 500               | 0.25        | 3.0                     | 6.0     | +0.058                                                        |
| CLL5237B  | 7.790                           | 8.2   | 8.610 | 20                       | 8.0                     | 500               | 0.25        | 3.0                     | 6.5     | +0.062                                                        |
| CLL5238B  | 8.265                           | 8.7   | 9.135 | 20                       | 8.0                     | 600               | 0.25        | 3.0                     | 6.5     | +0.065                                                        |
| CLL5239B  | 8.645                           | 9.1   | 9.555 | 20                       | 10                      | 600               | 0.25        | 3.0                     | 7.0     | +0.068                                                        |
| CLL5240B  | 9.500                           | 10    | 10.50 | 20                       | 17                      | 600               | 0.25        | 3.0                     | 8.0     | +0.075                                                        |
| CLL5241B  | 10.45                           | 11    | 11.55 | 20                       | 22                      | 600               | 0.25        | 2.0                     | 8.4     | +0.076                                                        |
| CLL5242B  | 11.40                           | 12    | 12.60 | 20                       | 30                      | 600               | 0.25        | 1.0                     | 9.1     | +0.077                                                        |
| CLL5243B  | 12.35                           | 13    | 13.65 | 9.5                      | 13                      | 600               | 0.25        | 0.5                     | 9.9     | +0.079                                                        |
| CLL5244B  | 13.30                           | 14    | 14.70 | 9.0                      | 15                      | 600               | 0.25        | 0.1                     | 10      | +0.082                                                        |

\*Available on special order only, please consult factory.

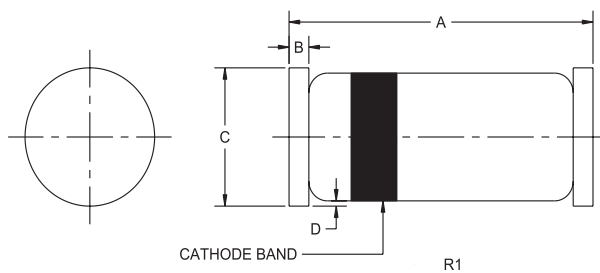
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**SURFACE MOUNT ZENER DIODE**  
**2.4 VOLTS THRU 75 VOLTS**  
**500MW, 5% TOLERANCE**

**ELECTRICAL CHARACTERISTICS:** ( $T_A=25^\circ\text{C}$ ),  $V_F=1.25\text{V MAX @ } I_F=200\text{mA}$  FOR ALL TYPES.

| TYPE NO. | ZENER VOLTAGE<br>$V_Z @ I_{ZT}$ |       |       | TEST CURRENT<br>$I_{ZT}$ | MAXIMUM ZENER IMPEDANCE |                   |             | MAXIMUM REVERSE CURRENT |       | MAXIMUM ZENER VOLTAGE TEMPERATURE COEFFICIENT<br>$\Theta V_Z$ |
|----------|---------------------------------|-------|-------|--------------------------|-------------------------|-------------------|-------------|-------------------------|-------|---------------------------------------------------------------|
|          | MIN                             | NOM   | MAX   |                          | $Z_{ZT} @ I_{ZT}$       | $Z_{ZK} @ I_{ZK}$ | $I_R @ V_R$ |                         |       |                                                               |
|          | VOLTS                           | VOLTS | VOLTS | mA                       | $\Omega$                | $\Omega$          | mA          | $\mu\text{A}$           | VOLTS | %/°C                                                          |
| CLL5245B | 14.25                           | 15    | 15.75 | 8.5                      | 16                      | 600               | 0.25        | 0.1                     | 11    | +0.082                                                        |
| CLL5246B | 15.20                           | 16    | 16.80 | 7.8                      | 17                      | 600               | 0.25        | 0.1                     | 12    | +0.083                                                        |
| CLL5247B | 16.15                           | 17    | 17.85 | 7.4                      | 19                      | 600               | 0.25        | 0.1                     | 13    | +0.084                                                        |
| CLL5248B | 17.10                           | 18    | 18.90 | 7.0                      | 21                      | 600               | 0.25        | 0.1                     | 14    | +0.085                                                        |
| CLL5249B | 18.05                           | 19    | 19.95 | 6.6                      | 23                      | 600               | 0.25        | 0.1                     | 14    | +0.086                                                        |
| CLL5250B | 19.00                           | 20    | 21.00 | 6.2                      | 25                      | 600               | 0.25        | 0.1                     | 15    | +0.086                                                        |
| CLL5251B | 20.90                           | 22    | 23.10 | 5.6                      | 29                      | 600               | 0.25        | 0.1                     | 17    | +0.087                                                        |
| CLL5252B | 22.80                           | 24    | 25.20 | 5.2                      | 33                      | 600               | 0.25        | 0.1                     | 18    | +0.088                                                        |
| CLL5253B | 23.75                           | 25    | 26.25 | 5.0                      | 35                      | 600               | 0.25        | 0.1                     | 19    | +0.089                                                        |
| CLL5254B | 25.65                           | 27    | 28.35 | 4.6                      | 41                      | 600               | 0.25        | 0.1                     | 21    | +0.090                                                        |
| CLL5255B | 26.60                           | 28    | 29.40 | 4.5                      | 44                      | 600               | 0.25        | 0.1                     | 21    | +0.091                                                        |
| CLL5256B | 28.50                           | 30    | 31.50 | 4.2                      | 49                      | 600               | 0.25        | 0.1                     | 23    | +0.091                                                        |
| CLL5257B | 31.35                           | 33    | 34.65 | 3.8                      | 58                      | 700               | 0.25        | 0.1                     | 25    | +0.092                                                        |
| CLL5258B | 34.20                           | 36    | 37.80 | 3.4                      | 70                      | 700               | 0.25        | 0.1                     | 27    | +0.093                                                        |
| CLL5259B | 37.05                           | 39    | 40.95 | 3.2                      | 80                      | 800               | 0.25        | 0.1                     | 30    | +0.094                                                        |
| CLL5260B | 40.85                           | 43    | 45.15 | 3.0                      | 93                      | 900               | 0.25        | 0.1                     | 33    | +0.095                                                        |
| CLL5261B | 44.65                           | 47    | 49.35 | 2.7                      | 105                     | 1000              | 0.25        | 0.1                     | 36    | +0.095                                                        |
| CLL5262B | 48.45                           | 51    | 53.55 | 2.5                      | 125                     | 1100              | 0.25        | 0.1                     | 39    | +0.096                                                        |
| CLL5263B | 53.20                           | 56    | 58.80 | 2.2                      | 150                     | 1300              | 0.25        | 0.1                     | 43    | +0.096                                                        |
| CLL5264B | 57.00                           | 60    | 63.00 | 2.1                      | 170                     | 1400              | 0.25        | 0.1                     | 46    | +0.097                                                        |
| CLL5265B | 58.90                           | 62    | 65.10 | 2.0                      | 185                     | 1400              | 0.25        | 0.1                     | 47    | +0.097                                                        |
| CLL5266B | 64.60                           | 68    | 71.40 | 1.8                      | 230                     | 1600              | 0.25        | 0.1                     | 52    | +0.097                                                        |
| CLL5267B | 71.25                           | 75    | 78.75 | 1.7                      | 270                     | 1700              | 0.25        | 0.1                     | 56    | +0.098                                                        |

**SOD-80 CASE - MECHANICAL OUTLINE**



| SYMBOL  | DIMENSIONS |       |             |      |
|---------|------------|-------|-------------|------|
|         | INCHES     |       | MILLIMETERS |      |
| A       | MIN        | MAX   | MIN         | MAX  |
| A       | 0.130      | 0.146 | 3.30        | 3.71 |
| B       | 0.016      |       | 0.41        |      |
| C (DIA) | 0.051      | 0.067 | 1.30        | 1.70 |
| D       | -          | 0.004 | -           | 0.10 |

SOD-80 (REV:R1)

R2 ( 9-October 2001)



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