- **1N962BUR-1 thru 1N986BUR-1 AVAILABLE IN JAN, JANTX AND JANTXV PER MIL-PRF-19500/117**
- **ZENER DIODES**
- **LEADLESS PACKAGE FOR SURFACE MOUNT**
- **METALLURGICALLY BONDED**

# 1N962BUR-1 thru 1N986BUR-1 and CDLL957B thru CDLL986B

## MAXIMUM RATINGS

Operating Temperature: -65°C to +175°C
Storage Temperature: -65°C to +175°C
DC Power Dissipation: 500mW @ $T_{EC}$ = +125°C
Power Derating: 10 mW / °C above $T_{EC}$ = +125°C
Forward Voltage @ 200mA: 1.1 volts maximum

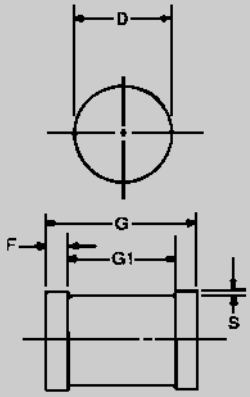
### ELECTRICAL CHARACTERISTICS @ 25°C

| CDI TYPE NUMBER (NOTE 1) | NOMINAL ZENER VOLTAGE $V_Z$ (NOTE 2) | ZENER TEST CURRENT $I_{ZT}$ | MAXIMUM ZENER IMPEDANCE (NOTE 3) | | | MAX. DC ZENER CURRENT $I_{ZM}$ | MAX. REVERSE LEAKAGE CURRENT $I_R$ @ $V_R$ | |
|---|---|---|---|---|---|---|---|---|
| | | | $Z_{ZT}$ @ $I_{ZT}$ | $Z_{ZK}$ @ $I_{ZK}$ | | | | |
| | VOLTS | mA | OHMS | OHMS | mA | mA | µA | VOLTS |
| **CDLL957B** | 6.8 | 18.5 | 4.5 | 700 | 1.0 | 55 | 5.0 | 5.2 |
| **CDLL958B** | 7.5 | 16.5 | 5.5 | 700 | .5 | 50 | 5.0 | 5.7 |
| **CDLL959B** | 8.2 | 15.0 | 6.5 | 700 | .5 | 45 | 5.0 | 6.2 |
| **CDLL960B** | 9.1 | 14.0 | 7.5 | 700 | .5 | 41 | 5.0 | 6.9 |
| **CDLL961B** | 10 | 12.5 | 8.5 | 700 | .25 | 38 | 2.0 | 7.6 |
| **CDLL962B** | 11 | 11.5 | 9.5 | 700 | .25 | 32 | 1.0 | 8.4 |
| **CDLL963B** | 12 | 10.5 | 11.5 | 700 | .25 | 31 | 1.0 | 9.1 |
| **CDLL964B** | 13 | 9.5 | 13 | 700 | .25 | 28 | 0.5 | 9.9 |
| **CDLL965B** | 15 | 8.5 | 16 | 700 | .25 | 25 | 0.5 | 11 |
| **CDLL966B** | 16 | 7.8 | 17 | 700 | .25 | 24 | 0.5 | 12 |
| **CDLL967B** | 18 | 7.0 | 21 | 750 | .25 | 20 | 0.5 | 14 |
| **CDLL968B** | 20 | 6.2 | 25 | 750 | .25 | 18 | 0.5 | 15 |
| **CDLL969B** | 22 | 5.6 | 29 | 750 | .25 | 16 | 0.5 | 17 |
| **CDLL970B** | 24 | 5.2 | 33 | 750 | .25 | 15 | 0.5 | 18 |
| **CDLL971B** | 27 | 4.6 | 41 | 750 | .25 | 13 | 0.5 | 21 |
| **CDLL972B** | 30 | 4.2 | 49 | 1000 | .25 | 12 | 0.5 | 23 |
| **CDLL973B** | 33 | 3.8 | 58 | 1000 | .25 | 11 | 0.5 | 25 |
| **CDLL974B** | 36 | 3.4 | 70 | 1000 | .25 | 10 | 0.5 | 27 |
| **CDLL975B** | 39 | 3.2 | 90 | 1000 | .25 | 9.5 | 0.5 | 30 |
| **CDLL976B** | 43 | 3.0 | 93 | 1500 | .25 | 8.8 | 0.5 | 33 |
| **CDLL977B** | 47 | 2.7 | 105 | 1500 | .25 | 7.9 | 0.5 | 36 |
| **CDLL978B** | 51 | 2.5 | 125 | 1500 | .25 | 7.4 | 0.5 | 39 |
| **CDLL979B** | 56 | 2.2 | 150 | 2000 | .25 | 6.8 | 0.5 | 43 |
| **CDLL980B** | 62 | 2.0 | 185 | 2000 | .25 | 6.0 | 0.5 | 47 |
| **CDLL981B** | 68 | 1.8 | 230 | 2000 | .25 | 5.5 | 0.5 | 52 |
| **CDLL982B** | 75 | 1.7 | 270 | 2000 | .25 | 5.0 | 0.5 | 56 |
| **CDLL983B** | 82 | 1.5 | 330 | 3000 | .25 | 4.6 | 0.5 | 62 |
| **CDLL984B** | 91 | 1.4 | 400 | 3000 | .25 | 4.1 | 0.5 | 69 |
| **CDLL985B** | 100 | 1.3 | 500 | 3000 | .25 | 3.7 | 0.5 | 76 |
| **CDLL986B** | 110 | 1.1 | 750 | 4000 | .25 | 3.3 | 0.5 | 84 |

**NOTE 1** Zener voltage tolerance on "B" suffix is ± 5%. Suffix letter "A" denotes ± 10%. No Suffix denotes ± 20%. "C" suffix denotes ± 2%, and "D" suffix denotes ± 1%.

**NOTE 2** Zener voltage is measured with the device junction in thermal equilibrium at an ambient temperature of 25°C ± 3°C.

**NOTE 3** Zener impedance is derived by superimposing on $1_{ZT}$ A 60Hz rms a.c. current equal to 10% of $1_{ZT}$.




| | MILLIMETERS | | INCHES | |
|---|---|---|---|---|
| DIM | 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:** ($Z_{JX}$): 35 °C/W maximum

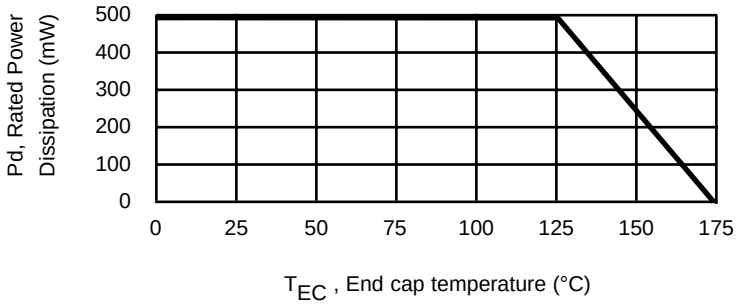
**POLARITY:** Diode to be operated with the banded (cathode) end positive.

**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.


Microsemi

6 LAKE STREET, LAWRENCE, MASSACHUSETTS 01841
PHONE (978) 620-2600 FAX (978) 689-0803
WEBSITE: http://www.microsemi.com

**FIGURE 2**




**POWER DERATING CURVE**

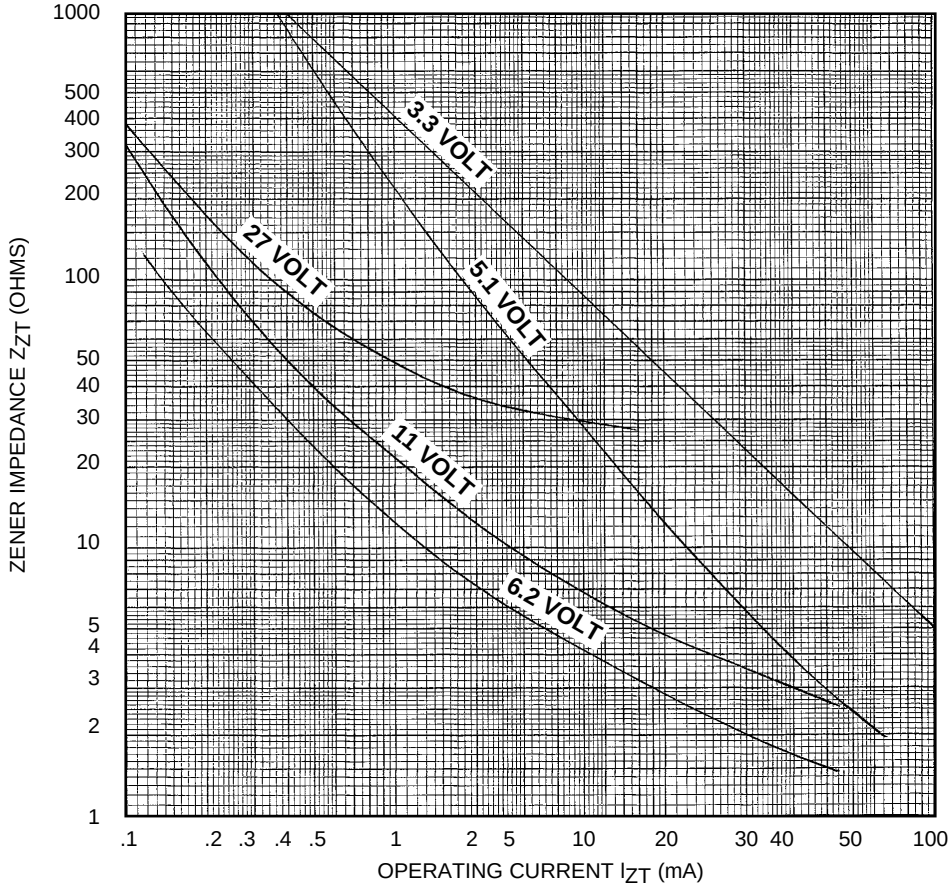



**FIGURE 3**

**ZENER IMPEDANCE VS. OPERATING CURRENT**