

- ZENER** – TEMPERATURE COMPENSATED ZENER REFERENCE DIODES
 – LEADLESS PACKAGE FOR SURFACE MOUNT
 – 9.0 VOLT NOMINAL ZENER VOLTAGE
 – METALLURGICALLY BONDED, DOUBLE PLUG CONSTRUCTION

Qualified per MIL-PRF-19500/156

DEVICES

**1N935BUR-1 thru 1N938BUR-1
 CDLL935 thru CDLL938B**

LEVELS
JAN
JANTX
JANTXV
JANS

MAXIMUM RATING AT 25°C

Operating Temperature: -65°C to +175°C
 Storage Temperature: -65°C to +175°C
 DC Power Dissipation: 500mW @ +50°C
 Power Derating: 4mW / °C above +50°C

REVERSE LEAKAGE CURRENT

$I_R = 10\mu A @ 25^\circ C \ \& \ V_R = 6Vdc$

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ C$, unless otherwise specified)



DO-213AA

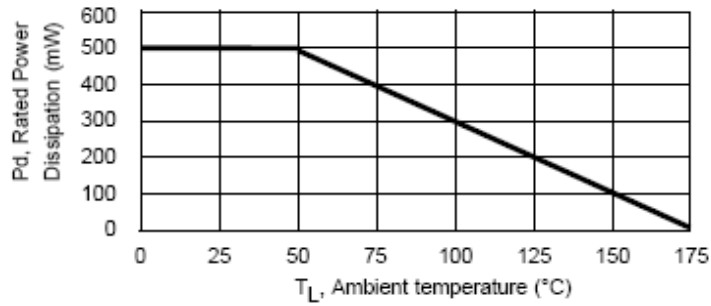
| MIL-PRF-19500/156 | MSC TYPE NUMBER | ZENER VOLTAGE | ZENER TEST CURRENT | MAXIMUM ZENER IMPEDANCE (Note 1) | VOLTAGE TEMPERATURE STABILITY $^3V_{ZT}$ MAXIMUM (Note 2) | TEMPERATURE RANGE | EFFECTIVE TEMPERATURE COEFFICIENT |
|-------------------|-----------------|----------------|--------------------|----------------------------------|---|-------------------|-----------------------------------|
| | | $V_Z @ I_{ZT}$ | I_{ZT} | Z_{ZT} | | | |
| | | VOLTS | mA | OHMS | mV | °C | % / °C |
| 1N935BUR-1 | CDLL935 | 8.55 – 9.45 | 7.5 | 20 | 67 | 0 to + 75 | 0.01 |
| | CDLL935A | 8.55 – 9.45 | 7.5 | 20 | 139 | -55 to +100 | 0.01 |
| | CDLL935B | 8.55 – 9.45 | 7.5 | 20 | 184 | -55 to +150 | 0.01 |
| 1N936BUR-1 | CDLL936 | 8.55 – 9.45 | 7.5 | 20 | 34 | 0 to + 75 | 0.005 |
| | CDLL936A | 8.55 – 9.45 | 7.5 | 20 | 70 | -55 to +100 | 0.005 |
| | CDLL936B | 8.55 – 9.45 | 7.5 | 20 | 92 | -55 to +150 | 0.005 |
| 1N937BUR-1 | CDLL937 | 8.55 – 9.45 | 7.5 | 20 | 13 | 0 to + 75 | 0.002 |
| | CDLL937A | 8.55 – 9.45 | 7.5 | 20 | 28 | -55 to +100 | 0.002 |
| | CDLL937B | 8.55 – 9.45 | 7.5 | 20 | 37 | -55 to +150 | 0.002 |
| 1N938BUR-1 | CDLL938 | 8.55 – 9.45 | 7.5 | 20 | 6.7 | 0 to + 75 | 0.001 |
| | CDLL938A | 8.55 – 9.45 | 7.5 | 20 | 13.9 | -55 to +100 | 0.001 |
| | CDLL938B | 8.55 – 9.45 | 7.5 | 20 | 19 | -55 to +150 | 0.001 |

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

NOTE 2: The maximum allowable change observed over the entire temperature range i.e., the diode voltage will not exceed the specified mV at any discrete temperature between the established limits, per JEDEC standard No. 5.

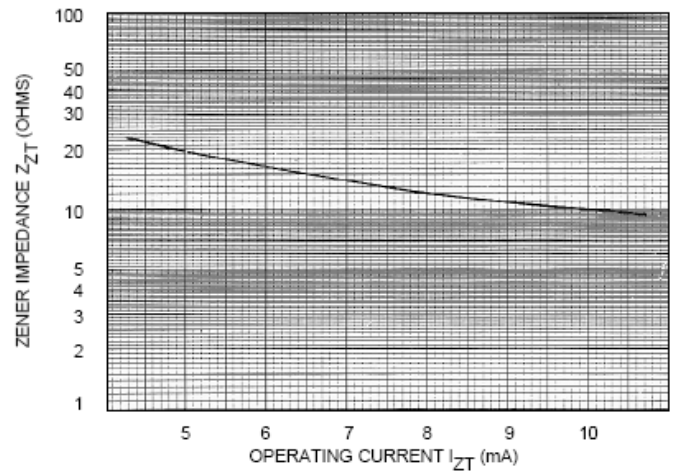
GRAPHS

FIGURE 1



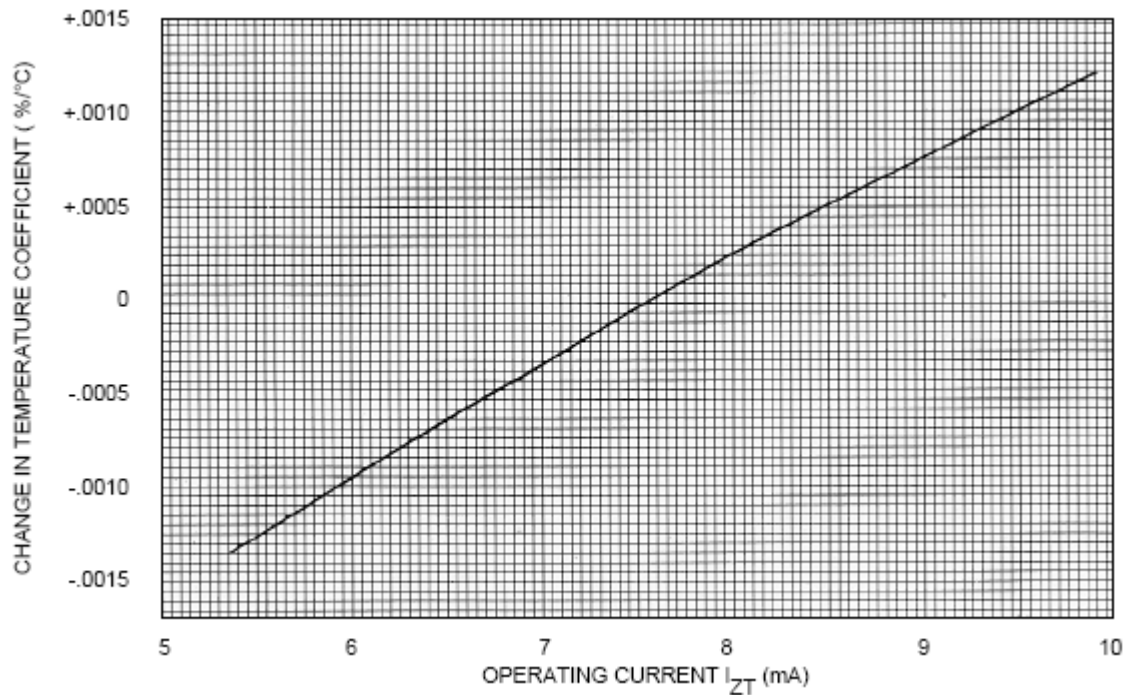
T_L , Ambient temperature (C°)
POWER DERATING CURVE

FIGURE 2



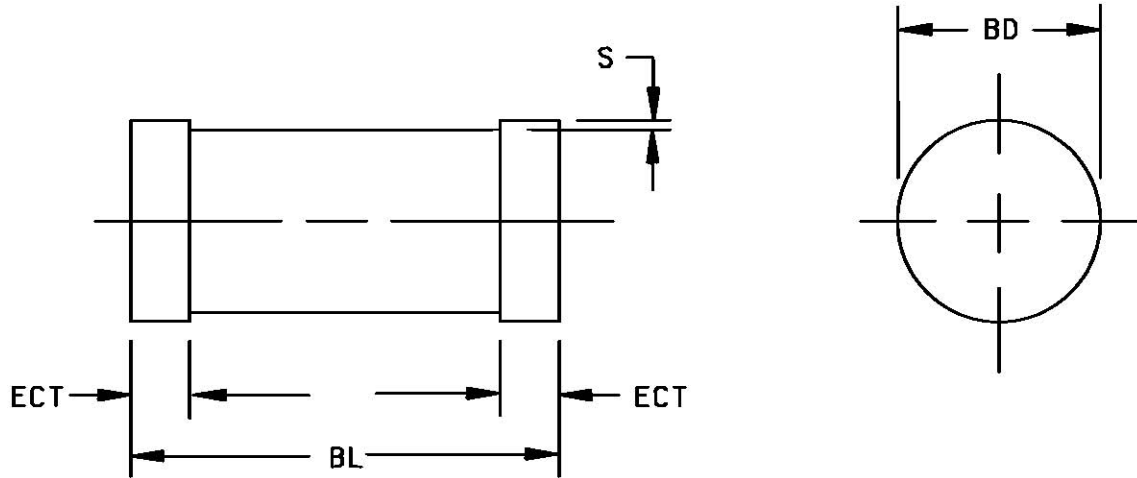
ZENER IMPEDANCE VS. OPERATING CURRENT

FIGURE 3



**TYPICAL CHANGE OF TEMPERATURE COEFFICIENT
 WITH CHANGE IN OPERATING CURRENT**

PACKAGE DIMENSIONS



NOTE:

1. Dimensions are in inches.
2. Millimeters are given for general information only.
3. In accordance with ASME Y14.5M, diameters are equivalent to Φx symbology.

| Symbol | Dimensions | | | | Notes |
|--------|------------|------|-------------|------|-------|
| | Inches | | Millimeters | | |
| | Min | Max | Min | Max | |
| BD | .063 | .067 | 1.60 | 1.70 | |
| ECT | .016 | .022 | 0.41 | 0.56 | |
| BL | .130 | .146 | 3.30 | 3.70 | |
| S | .001 Min | | 0.03 Min | | |

FIGURE 1. Physical dimensions 1N935BUR-1, 1N937BUR-1 through 1N940BUR-1 (DO-213AA).

DESIGN DATA

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

Lead Finish: Tin / Lead

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

Mounting Position: Any.

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.