

ZENER – TEMPERATURE COMPENSATED ZENER REFERENCE DIODES
 – 9.0 VOLT NOMINAL ZENER VOLTAGE
 – METALLURGICALLY BONDED

Qualified per MIL-PRF-19500/156

DEVICES

**1N935 thru 1N938B
 1N935B-1 thru 1N938B-1**

**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°C & $V_R = 6Vdc$

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

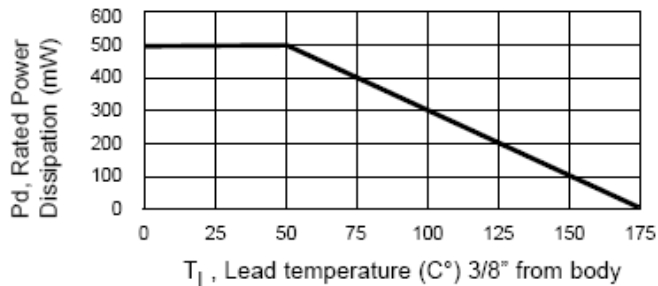
| MIL-PRF-19500/156 | JEDEC TYPE NUMBER | ZENER VOLTAGE | ZENER TEST CURRENT | MAXIMUM ZENER IMPEDANCE | VOLTAGE TEMPERATURE STABILITY | TEMPERATURE RANGE | EFFECTIVE TEMPERATURE COEFFICIENT |
|-------------------|-------------------|----------------|--------------------|-------------------------|-------------------------------|-------------------|-----------------------------------|
| | | $V_Z @ I_{ZT}$ | I_{ZT} | (Note 1) Z_{ZT} | $^3V_{ZT}$ MAXIMUM (Note 2) | | |
| | | VOLTS | mA | OHMS | mV | °C | % / °C |
| 1N935B-1 | 1N935 | 8.55 – 9.45 | 7.5 | 20 | 67 | 0 to +75 | 0.01 |
| | 1N935A | 8.55 – 9.45 | 7.5 | 20 | 139 | -55 to +100 | 0.01 |
| | 1N935B | 8.55 – 9.45 | 7.5 | 20 | 184 | -55 to +150 | 0.01 |
| 1N936B-1 | 1N936 | 8.55 – 9.45 | 7.5 | 20 | 34 | 0 to +75 | 0.005 |
| | 1N936A | 8.55 – 9.45 | 7.5 | 20 | 70 | -55 to +100 | 0.005 |
| | 1N936B | 8.55 – 9.45 | 7.5 | 20 | 92 | -55 to +150 | 0.005 |
| 1N937B-1 | 1N937 | 8.55 – 9.45 | 7.5 | 20 | 13 | 0 to +75 | 0.002 |
| | 1N937A | 8.55 – 9.45 | 7.5 | 20 | 28 | -55 to +100 | 0.002 |
| | 1N937B | 8.55 – 9.45 | 7.5 | 20 | 37 | -55 to +150 | 0.002 |
| 1N938B-1 | 1N938 | 8.55 – 9.45 | 7.5 | 20 | 6.7 | 0 to +75 | 0.001 |
| | 1N938A | 8.55 – 9.45 | 7.5 | 20 | 13.9 | -55 to +100 | 0.001 |
| | 1N938B | 8.55 – 9.45 | 7.5 | 20 | 19 | -55 to +150 | 0.001 |



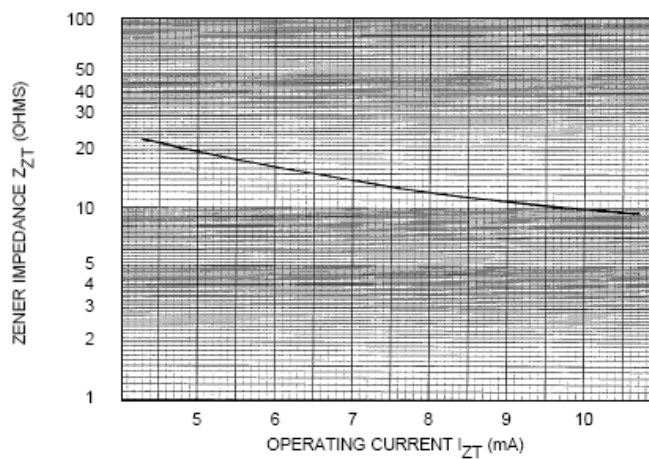
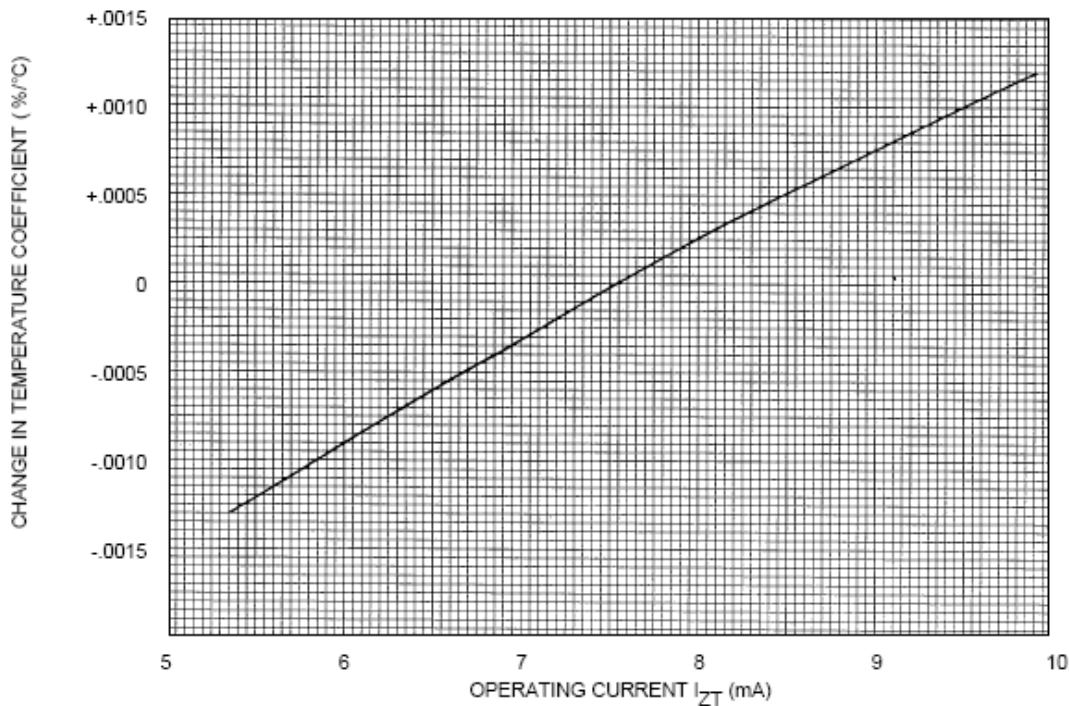
DO-35

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

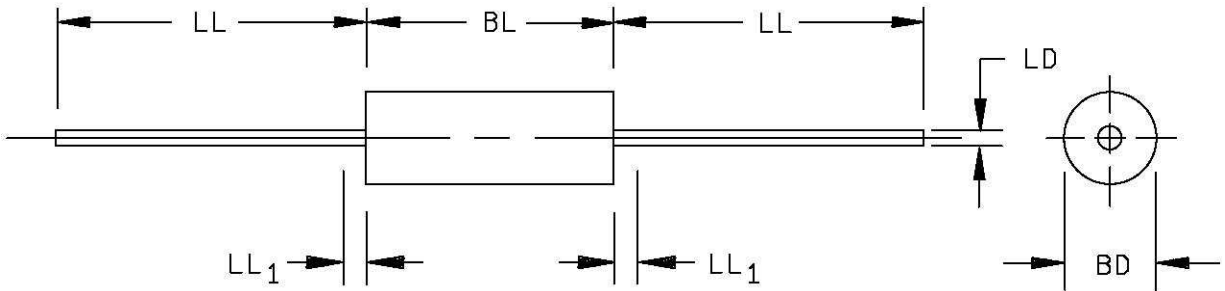
NOTE 2: The maximum allowable change observed over the entire temperature range i.e., the diode voltage will not exceed the specified mV at any discrete temperature between the established limits, per JEDEC standard No. 5.

GRAPHS
FIGURE 1


T_L , Lead temperature (C°) 3/8" from body

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. Package contour optional within BD and length BL. Heat slugs, if any, shall be included within this cylinder but shall not be subject to minimum limit of BD.
4. Within this zone, lead diameter may vary to allow for lead finishes and irregularities, other than heat slugs.
5. In accordance with ASME Y14.5M, diameters are equivalent to Φ x symbology.

| Symbol | Dimensions | | | | Notes |
|--------|------------|-------|-------------|-------|-------|
| | Inches | | Millimeters | | |
| | Min | Max | Min | Max | |
| BD | .060 | .107 | 1.52 | 2.72 | 3 |
| BL | .120 | .300 | 3.05 | 7.62 | 3 |
| LD | .018 | .023 | 0.46 | 0.58 | |
| LL | 1.000 | 1.500 | 25.40 | 38.10 | |
| LL1 | | 0.050 | | 1.27 | 4 |

FIGURE 1. Physical dimensions 1N935B-1, 1N937B-1 through 1N940B-1 (DO-7 and DO-35).

DESIGN DATA

Case: Hermetically sealed glass case DO-35 outline.

Lead Material: Copper clad steel.

Lead Finish: Tin / Lead

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

Mounting Position: Any.