

- 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**

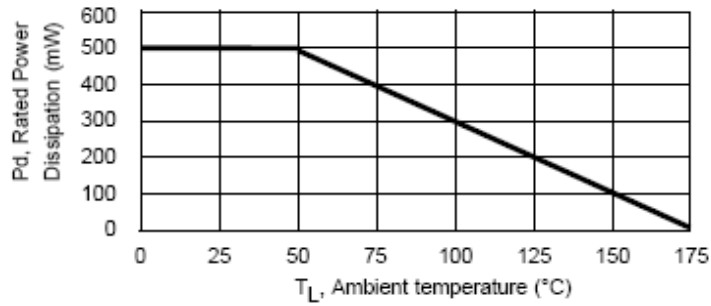
MIL-PRF-19500/156	MSC TYPE NUMBER	ZENER VOLTAGE	ZENER TEST CURRENT	MAXIMUM ZENER IMPEDANCE (Note 1)	VOLTAGE TEMPERATURE STABILITY	TEMPERATURE RANGE	EFFECTIVE TEMPERATURE COEFFICIENT
		$V_Z @ I_{ZT}$	$I_{ZT}$	$Z_{ZT}$	${}^3V_{ZT} \text{ MAXIMUM (Note 2)}$		
		VOLTS	mA	OHMS	mV	°C	% / °C
1N935BUR-1	CDLL935	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.

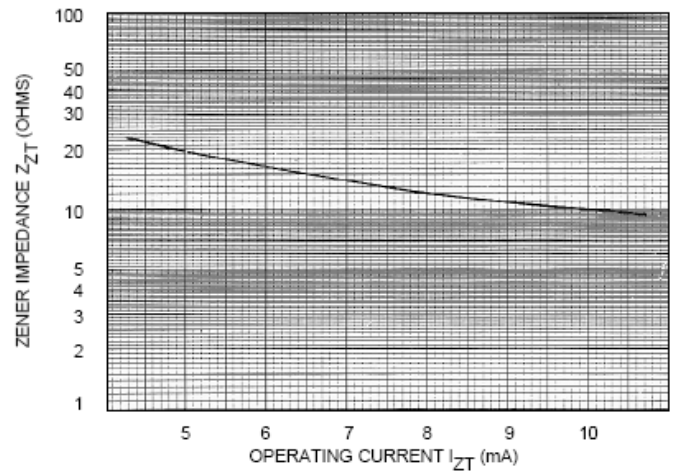
## GRAPHS

FIGURE 1



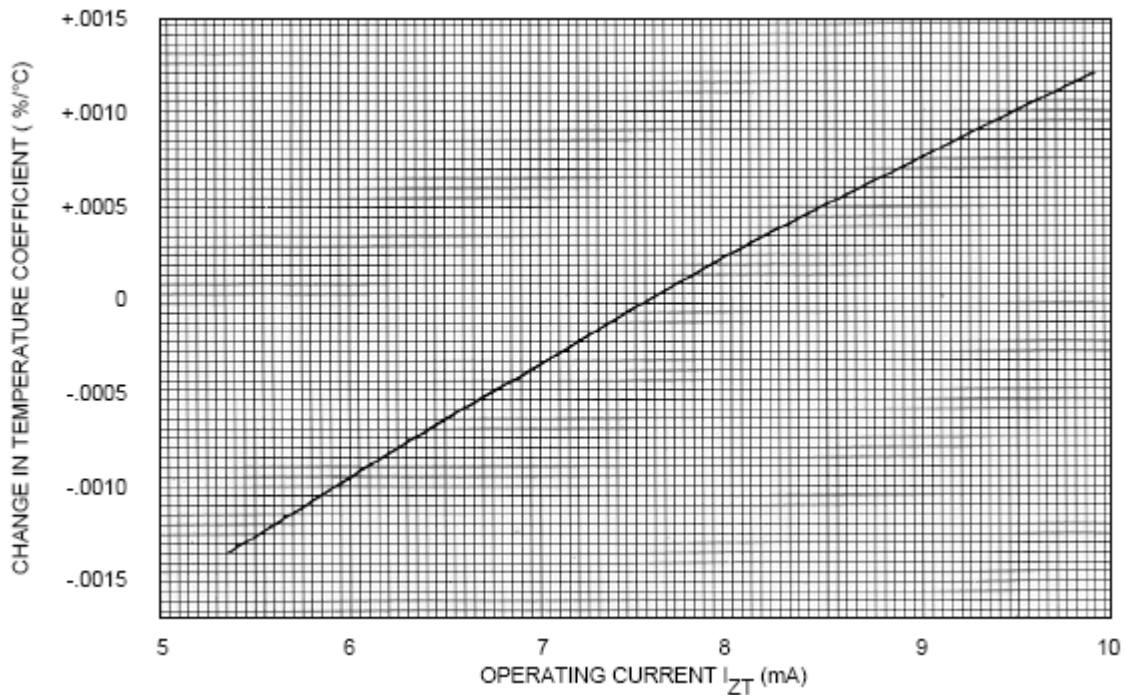
$T_L$ , Ambient temperature (C°)  
**POWER DERATING CURVE**

FIGURE 2



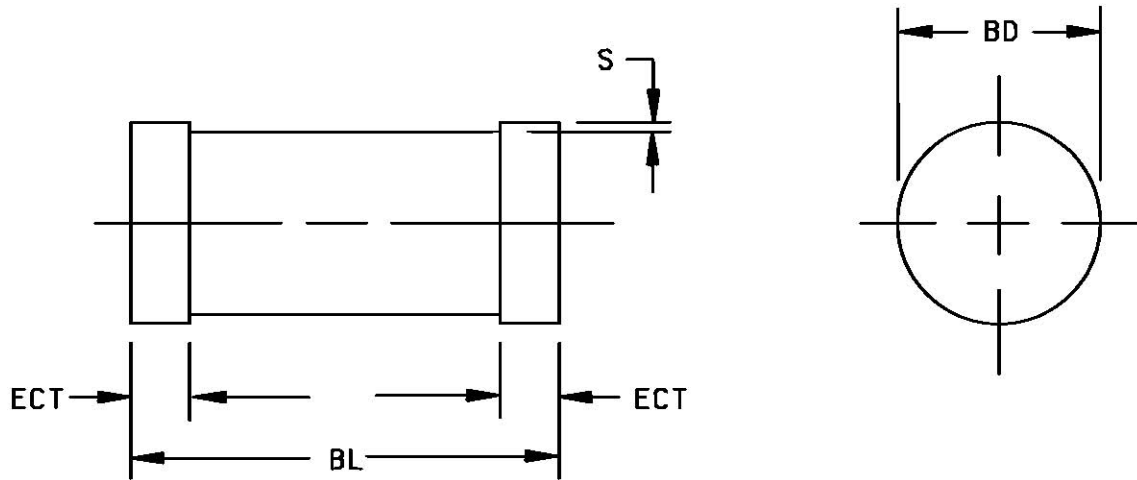
**ZENER IMPEDANCE VS. OPERATING CURRENT**

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  $\Phi x$  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.