

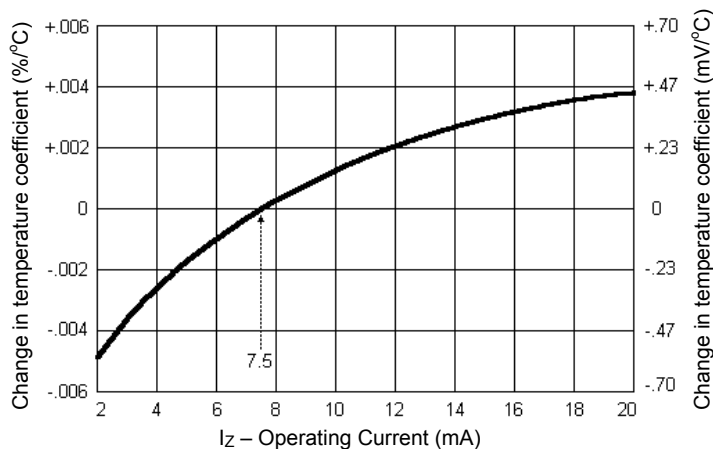
**\*ELECTRICAL CHARACTERISTICS @ 25°C, unless otherwise specified**

JEDEC TYPE NUMBER (Note 1, 5 & 6)	ZENER VOLTAGE $V_Z @ I_{ZT}$ (Note 4)	ZENER TEST CURRENT $I_{ZT}$	MAXIMUM ZENER IMPEDANCE (Note 2) $Z_{ZT} @ I_{ZT}$	MAXIMUM REVERSE CURRENT $I_R @ 8 V$	VOLTAGE TEMPERATURE STABILITY (Note 3 & 4) $\Delta V_{ZT}$ MAXIMUM	TEMPERATURE RANGE	EFFECTIVE TEMPERATURE COEFFICIENT $\alpha_{VZ}$
	VOLTS	mA	OHMS	$\mu A$	mV	°C	%/°C
<b>1N941</b>	11.12-12.28	7.5	30	15	88	0 to +75	0.01
<b>1N941A</b>	11.12-12.28	7.5	30	15	181	-55 to +100	0.01
<b>1N941B</b>	11.12-12.28	7.5	30	15	239	-55 to +150	0.01
<b>1N942</b>	11.12-12.28	7.5	30	15	44	0 to +75	0.005
<b>1N942A</b>	11.12-12.28	7.5	30	15	90	-55 to +100	0.005
<b>1N942B</b>	11.12-12.28	7.5	30	15	120	-55 to +150	0.005
<b>1N943</b>	11.12-12.28	7.5	30	15	18	0 to +75	0.002
<b>1N943A</b>	11.12-12.28	7.5	30	15	36	-55 to +100	0.002
<b>1N943B</b>	11.12-12.28	7.5	30	15	47	-55 to +150	0.002
<b>1N944</b>	11.12-12.28	7.5	30	15	9	0 to +75	0.001
<b>1N944A</b>	11.12-12.28	7.5	30	15	18	-55 to +100	0.001
<b>1N944B</b>	11.12-12.28	7.5	30	15	24	-55 to +150	0.001
<b>1N945</b>	11.12-12.28	7.5	30	15	4	0 to +75	0.0005
<b>1N945A</b>	11.12-12.28	7.5	30	15	9	-55 to +100	0.0005
<b>1N945B</b>	11.12-12.28	7.5	30	15	12	-55 to +150	0.0005
<b>1N946</b>	11.12-12.28	7.5	30	15	1.8	0 to +75	0.0002
<b>1N946A</b>	11.12-12.28	7.5	30	15	3.6	-55 to +100	0.0002
<b>1N946B</b>	11.12-12.28	7.5	30	15	4.7	-55 to +150	0.0002

\*JEDEC Registered Data.

**NOTES:**

- For tighter voltages tolerances, add a hyphenated suffix to the part number for desired tolerance at the end of the part number, e.g. 1N944B-2%, 1N945B-1%, 1N944B-1-1%, etc.
- Measured by superimposing 0.75 mA ac rms on 7.5 mA dc @ 25°C.
- The maximum allowable change observed over the entire temperature range i.e., the diode voltage will not exceed the specified mV change at any discrete temperature between the established limits.
- Voltage measurements to be performed 15 seconds after application of dc current.
- The 1N941B, 1N942B, 1N943B, 1N944B, 1N945B also have military qualification to MIL-PRF-19500/157 up to the JANTXV level by adding JAN, JANTX, or JANTXV prefixes to part numbers as well as "-1" suffix, e.g. JANTX1N944B-1, JANTXV1N945B-1, etc.
- Designate Radiation Hardened devices with "RH" prefix instead of "1N", i.e. RH944B instead of 1N944B.

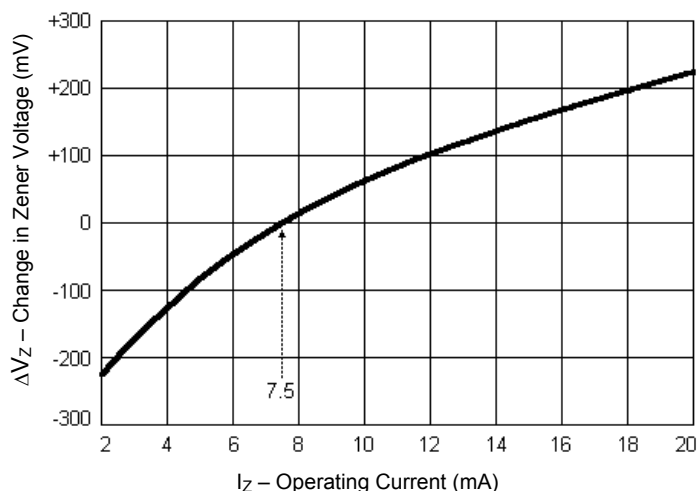
**GRAPHS**

**FIGURE 1**

TYPICAL CHANGE OF TEMPERATURE COEFFICIENT  
WITH CHANGE IN OPERATING CURRENT.

The curve shown in Figure 1 is typical of the diode series and greatly simplifies the estimation of the Temperature Coefficient (TC) when the diode is operated at currents other than 7.5mA.

**EXAMPLE:** A diode in this series is operated at a current of 7.5mA and has specified Temperature Coefficient (TC) limits of  $\pm 0.002\%/^{\circ}C$ . To obtain the typical Temperature Coefficient limits for this same diode operated at a current of 6.0mA, the new TC limits (%/°C) can be estimated using the graph in FIGURE 1.

At a test current of 6.0mA the change in Temperature Coefficient (TC) is approximately  $-0.0009\%/^{\circ}C$ . The algebraic sum of  $\pm 0.002\%/^{\circ}C$  and  $-0.0009\%/^{\circ}C$  gives the new estimated limits of  $+0.0011\%/^{\circ}C$  and  $-0.0029\%/^{\circ}C$ .

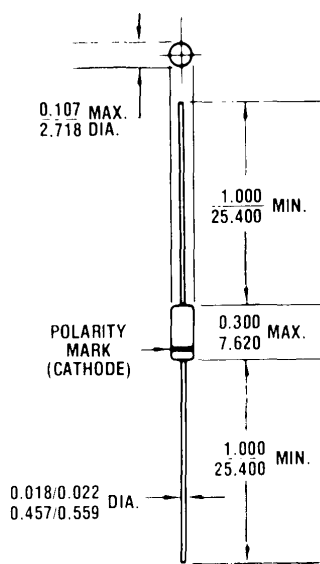


*This curve in Figure 2 illustrates the change of diode voltage arising from the effect of impedance. It is in effect, an exploded view of the zener operating region of the I-V characteristic.*

*In conjunction with Figure 1, this curve can be used to estimate total voltage regulation under conditions of both varying temperature and current.*

**FIGURE 2**  
TYPICAL CHANGE OF ZENER VOLTAGE  
WITH CHANGE IN OPERATING CURRENT.

## DIMENSIONS



All dimensions in INCH  
mm