

- 12.8 VOLT NOMINAL ZENER VOLTAGE $\pm 5\%$
- TEMPERATURE COMPENSATED ZENER REFERENCE DIODES
- LOW NOISE
- METALLURGICALLY BONDED
- DOUBLE PLUG CONSTRUCTION

1N4896
thru
1N4915A

MAXIMUM RATINGS

Operating Temperature: -65°C to $+175^{\circ}\text{C}$
Storage Temperature: -65°C to $+175^{\circ}\text{C}$
DC Power Dissipation: 500mW @ $+50^{\circ}\text{C}$
Power Derating: 4 mW / $^{\circ}\text{C}$ above $+50^{\circ}\text{C}$

REVERSE LEAKAGE CURRENT

$I_R = 15 \mu\text{A}$ @ 25°C & $V_R = 8\text{Vdc}$

ELECTRICAL CHARACTERISTICS @ 25°C , unless otherwise specified.

| JEDEC TYPE NUMBER | TEST CURRENT I_{ZT} (Note 3) | VOLTAGE TEMPERATURE STABILITY ΔV_{ZT} (Note 2) | TEMPERATURE RANGE | EFFECTIVE TEMPERATURE COEFFICIENT | MAXIMUM DYNAMIC IMPEDANCE Z_{ZT} (Note 1) | MAXIMUM NOISE DENSITY N_D |
|-------------------|--------------------------------|--|--------------------|-----------------------------------|---|----------------------------------|
| | mA | mV | $^{\circ}\text{C}$ | $\%/^{\circ}\text{C}$ | OHMS | $\mu\text{V} / \sqrt{\text{Hz}}$ |
| 1N4896 | 0.5 | 96 | +25 to +100 | 0.01 | 400 | 0.8 |
| 1N4896A | 0.5 | 198 | -55 to +100 | 0.01 | 400 | 0.8 |
| 1N4897 | 0.5 | 48 | +25 to +100 | 0.005 | 400 | 0.8 |
| 1N4897A | 0.5 | 99 | -55 to +100 | 0.005 | 400 | 0.8 |
| 1N4898 | 0.5 | 19 | +25 to +100 | 0.002 | 400 | 0.8 |
| 1N4898A | 0.5 | 40 | -55 to +100 | 0.002 | 400 | 0.8 |
| 1N4899 | 0.5 | 10 | +25 to +100 | 0.001 | 400 | 0.8 |
| 1N4899A | 0.5 | 20 | -55 to +100 | 0.001 | 400 | 0.8 |
| 1N4900 | 1.0 | 96 | +25 to +100 | 0.01 | 200 | 0.4 |
| 1N4900A | 1.0 | 198 | -55 to +100 | 0.01 | 200 | 0.4 |
| 1N4901 | 1.0 | 48 | +25 to +100 | 0.005 | 200 | 0.4 |
| 1N4901A | 1.0 | 99 | -55 to +100 | 0.005 | 200 | 0.4 |
| 1N4902 | 1.0 | 19 | +25 to +100 | 0.002 | 200 | 0.4 |
| 1N4902A | 1.0 | 40 | -55 to +100 | 0.002 | 200 | 0.4 |
| 1N4903 | 1.0 | 10 | +25 to +100 | 0.001 | 200 | 0.4 |
| 1N4903A | 1.0 | 20 | -55 to +100 | 0.001 | 200 | 0.4 |
| 1N4904 | 2.0 | 96 | +25 to +100 | 0.01 | 100 | 0.25 |
| 1N4904A | 2.0 | 198 | -55 to +100 | 0.01 | 100 | 0.25 |
| 1N4905 | 2.0 | 48 | +25 to +100 | 0.005 | 100 | 0.25 |
| 1N4905A | 2.0 | 99 | -55 to +100 | 0.005 | 100 | 0.25 |
| 1N4906 | 2.0 | 19 | +25 to +100 | 0.002 | 100 | 0.25 |
| 1N4906A | 2.0 | 40 | -55 to +100 | 0.002 | 100 | 0.25 |
| 1N4907 | 2.0 | 10 | +25 to +100 | 0.001 | 100 | 0.25 |
| 1N4907A | 2.0 | 20 | -55 to +100 | 0.001 | 100 | 0.25 |
| 1N4908 | 4.0 | 96 | +25 to +100 | 0.01 | 50 | 0.22 |
| 1N4908A | 4.0 | 198 | -55 to +100 | 0.01 | 50 | 0.22 |
| 1N4909 | 4.0 | 48 | +25 to +100 | 0.005 | 50 | 0.22 |
| 1N4909A | 4.0 | 99 | -55 to +100 | 0.005 | 50 | 0.22 |
| 1N4910 | 4.0 | 19 | +25 to +100 | 0.002 | 50 | 0.22 |
| 1N4910A | 4.0 | 40 | -55 to +100 | 0.002 | 50 | 0.22 |
| 1N4911 | 4.0 | 10 | +25 to +100 | 0.001 | 50 | 0.22 |
| 1N4911A | 4.0 | 20 | -55 to +100 | 0.001 | 50 | 0.22 |
| 1N4912 | 7.5 | 96 | +25 to +100 | 0.01 | 25 | 0.20 |
| 1N4912A | 7.5 | 198 | -55 to +100 | 0.01 | 25 | 0.20 |
| 1N4913 | 7.5 | 48 | +25 to +100 | 0.005 | 25 | 0.20 |
| 1N4913A | 7.5 | 99 | -55 to +100 | 0.005 | 25 | 0.20 |
| 1N4914 | 7.5 | 19 | +25 to +100 | 0.002 | 25 | 0.20 |
| 1N4914A | 7.5 | 40 | -55 to +100 | 0.002 | 25 | 0.20 |
| 1N4915 | 7.5 | 10 | +25 to +100 | 0.001 | 25 | 0.20 |
| 1N4915A | 7.5 | 20 | -55 to +100 | 0.001 | 25 | 0.20 |

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, per JEDEC standard No.5.

NOTE 3 Zener voltage range equals 12.8 volts $\pm 5\%$.

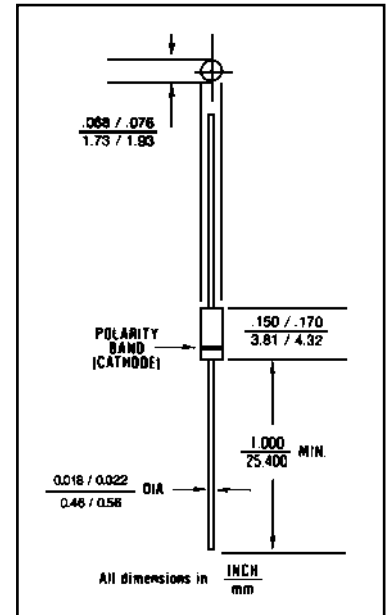


FIGURE 1

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.



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1N4896 thru 1N4915A

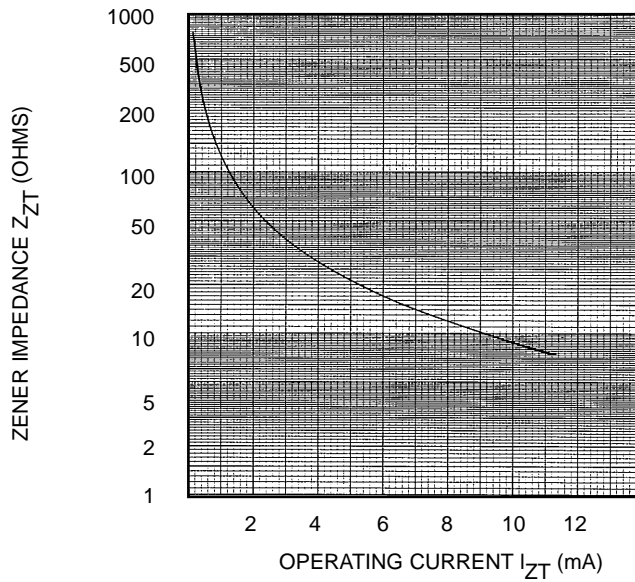


FIGURE 2

ZENER IMPEDANCE VS. OPERATING CURRENT

CHANGE IN TEMPERATURE COEFFICIENT (%/°C)

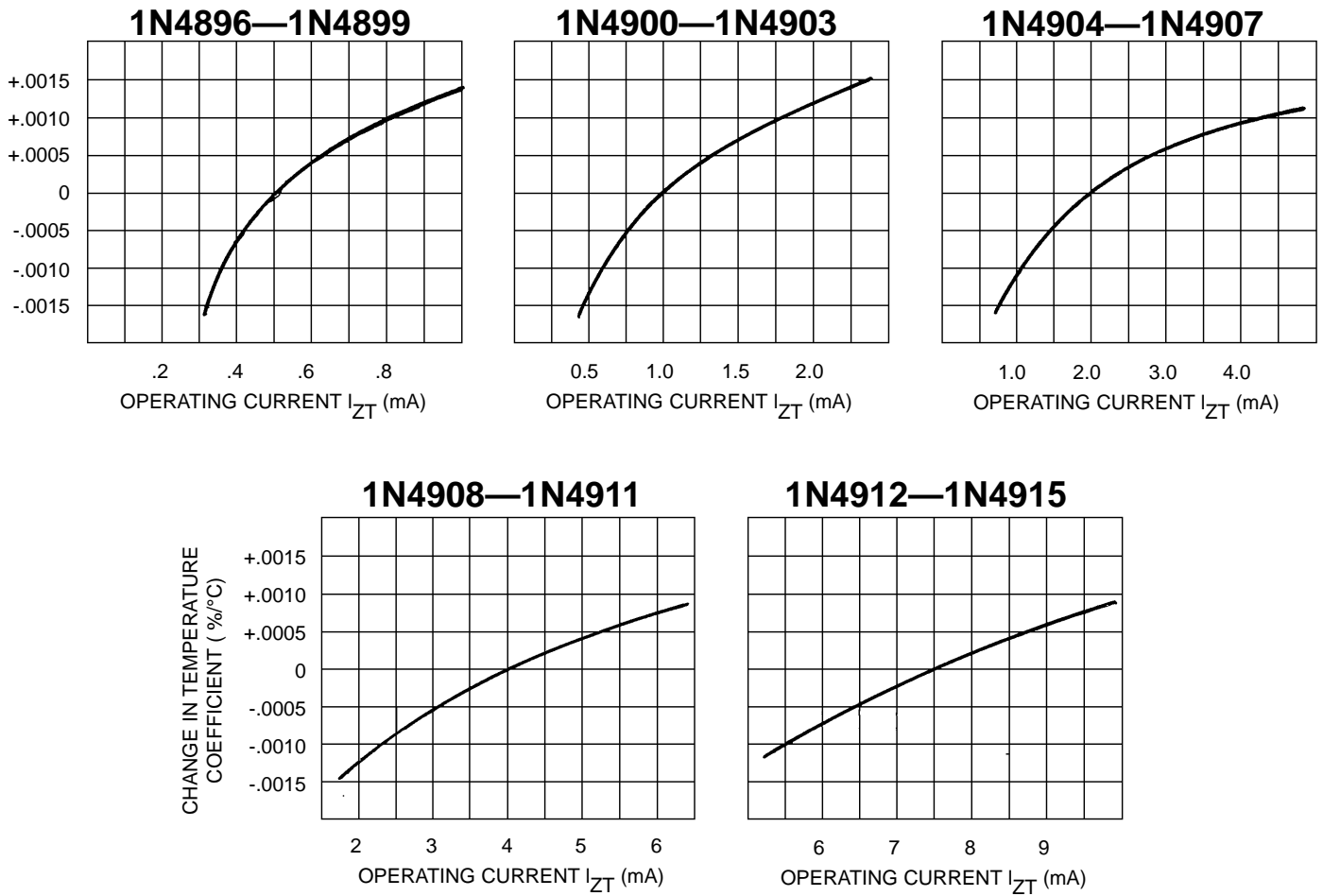


FIGURE 3

TYPICAL CHANGE OF TEMPERATURE COEFFICIENT WITH CHANGE IN OPERATING CURRENT