- **MONOLITHIC TEMPERATURE COMPENSATED ZENER REFERENCE CHIPS**
- **ALL JUNCTIONS COMPLETELY PROTECTED WITH SILICON DIOXIDE**
- **8.5 & 9.1 VOLT NOMINAL ZENER VOLTAGE ±5%**
- **ELECTRICALLY EQUIVALENT TO 1N4765 THRU 1N4772A AND 1N4775 THRU 1N4782A SERIES**
- **COMPATIBLE WITH ALL WIRE BONDING AND DIE ATTACH TECHNIQUES, WITH THE EXCEPTION OF SOLDER REFLOW**

CD4765 thru CD4767A and CD4770 thru CD4772A and CD4775 thru CD4777A and CD4780 thru CD4782A

MAXIMUM RATINGS

Operating Temperature: -65°C to +175°C
Storage Temperature: -65°C to +175°C

ELECTRICAL CHARACTERISTICS @ 25°C, unless otherwise speci½ed.

TYPE NUMBER	ZENER VOLTAGE v_z @ I_{ZT} (Note 3)	ZENER TEST CURRENT I_{ZT}	MAXIMUM ZENER IMPEDANCE Z_{ZT} (Note 1)	MAXIMUM VOLTAGE TEMPERATURE STABILITY $^{3}V_{ZT}$ MAXIMUM (Note 2)	TEMPERATURE RANGE	EFFECTIVE TEMPERATURE COEFFICIENT
	VOLTS	mA	OHMS	mV	°C	% / °C
CD4765	9.1	0.5	350	68	0 to + 75	0.01
CD4765A	9.1	0.5	350	141	-55 to + 100	0.01
CD4766	9.1	0.5	350	34	0 to + 75	0.005
CD4766A	9.1	0.5	350	70	-55 to + 100	0.005
CD4767	9.1	0.5	350	14	0 to + 75	0.002
CD4767A	9.1	0.5	350	28	-55 to + 100	0.002
CD4770	9.1	1.0	200	68	0 to + 75	0.01
CD4770A	9.1	1.0	200	141	-55 to + 100	0.01
CD4771	9.1	1.0	200	34	0 to + 75	0.005
CD4771A	9.1	1.0	200	70	-55 to + 100	0.005
CD4772	9.1	1.0	200	14	0 to + 75	0.002
CD4772A	9.1	1.0	200	28	-55 to + 100	0.002
CD4775	8.5	0.5	350	64	0 to + 75	0.01
CD4775A	8.5	0.5	350	132	-55 to + 100	0.01
CD4776	8.5	0.5	350	32	0 to + 75	0.005
CD4776A	8.5	0.5	350	66	-55 to + 100	0.005
CD4777	8.5	0.5	350	13	0 to + 75	0.002
CD4777A	8.5	0.5	350	26	-55 to + 100	0.002
CD4780	8.5	1.0	200	64	0 to + 75	0.01
CD4780A	8.5	1.0	200	132	-55 to + 100	0.01
CD4781	8.5	1.0	200	32	0 to + 75	0.005
CD4781A	8.5	1.0	200	66	-55 to + 100	0.005
CD4782	8.5	1.0	200	13	0 to + 75	0.002
CD4782A	8.5	1.0	200	26	-55 to + 100	0.002

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 speci½ed mV at any discrete temperature between the established limits, per JEDEC standard No.5.

NOTE 3 Zener voltage range is ±5%

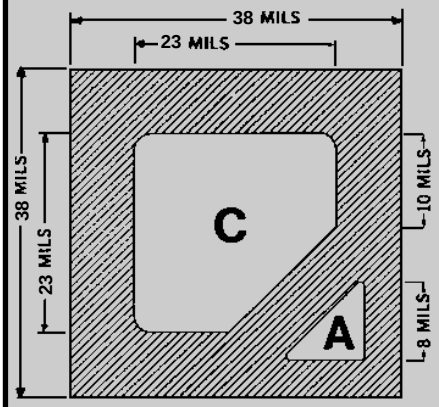


FIGURE 1

DESIGN DATA

METALLIZATION:
Top: C (Cathode).....Al
A (Anode)..... .....Al
Back: .....Au

AL THICKNESS.....25,000 Å Min

GOLD THICKNESS... .....4,000 Å Min

CHIP THICKNESS..... .....10 Mils

CIRCUIT LAYOUT DATA:
Backside must be electrically isolated.
Backside is not cathode.
For Zener operation cathode must be operated positive with respect to anode.

TOLERANCES: ALL
Dimensions ± 2 mils

Microsemi

6 LAKE STREET, LAWRENCE, MASSACHUSETTS 01841
PHONE (978) 620-2600 FAX (978) 689-0803
WEBSITE: http://www.microsemi.com

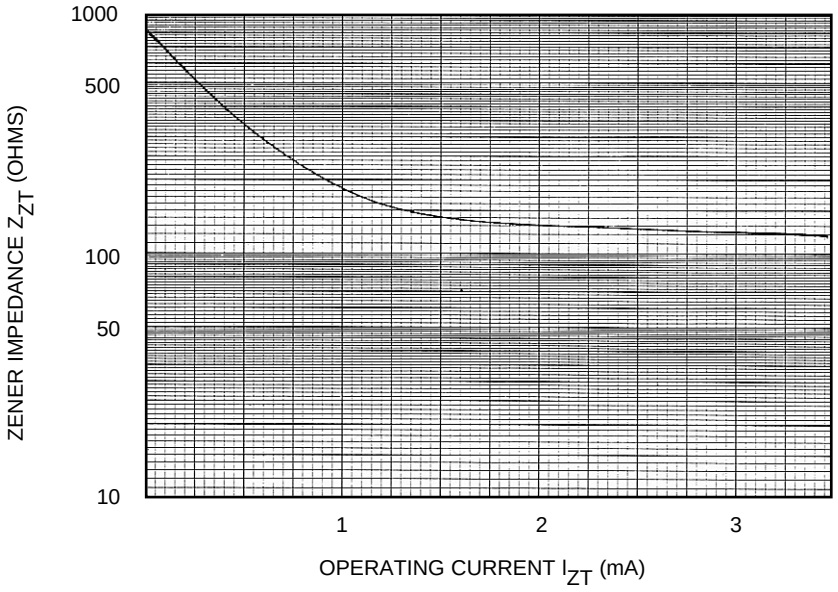


FIGURE 2

**ZENER IMPEDANCE
VS.
OPERATING CURRENT**

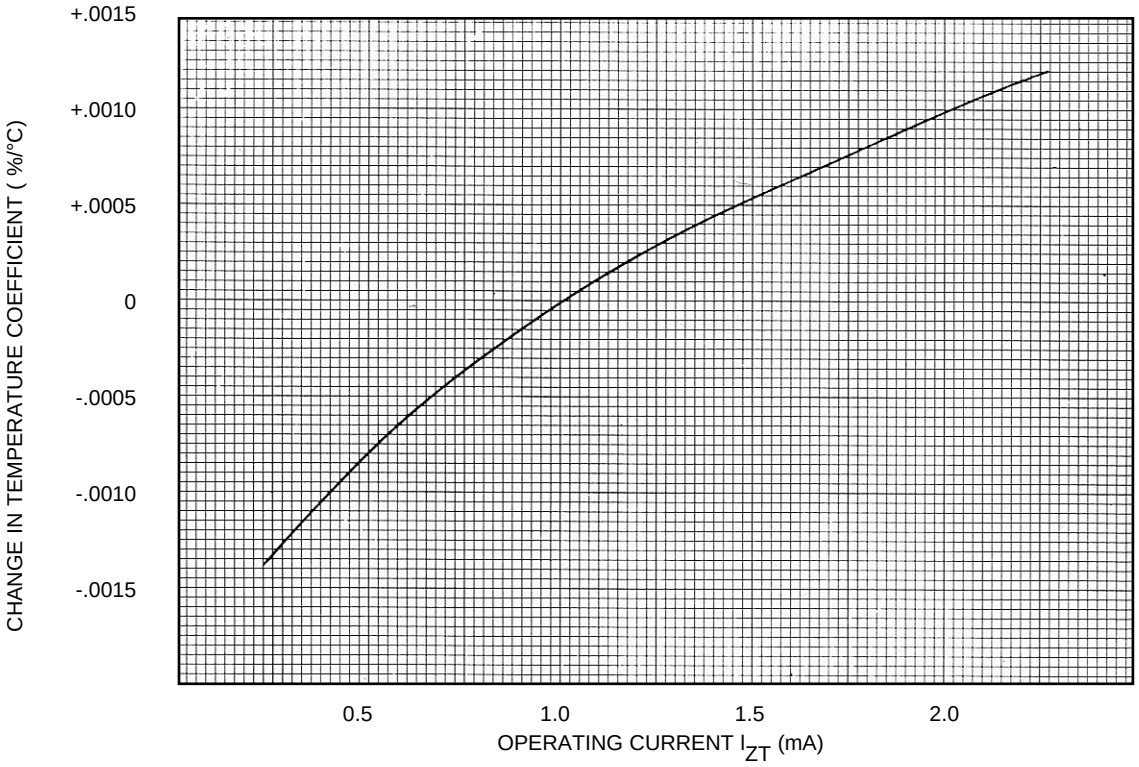


FIGURE 3

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