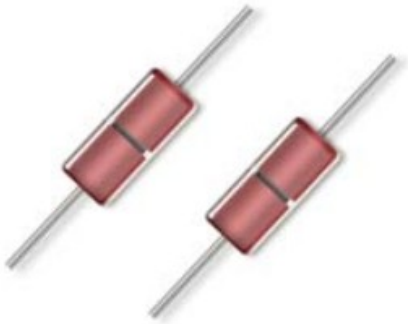
1N4678 thru 1N4717

Low Noise Zener Diode Series

Rev. V3

Features

- 50 µA Low Operating Current
- Double Plug Construction
- Metallurgically Bonded



Electrical Specifications: T_A = +25°C (unless otherwise specified)

TYPE NUMBER (Note 1)	NOMINAL ZENER VOLTAGE VZ	ZENER TEST CURRENT IZT	MAXIMUM VOLTAGE REGULATION ΔVZ (Note 2)	MAXIMUM REVERSE LEAKAGE CURRENT IR @ VR		MAXIMUM DC ZENER CURRENT IZM
	VOLTS	µA	VOLTS	µA	VOLTS	mA
1N4678	1.8	50.0	0.70	7.5	1.0	120.0
1N4679	2.0	50.0	0.70	5.0	1.0	110.0
1N4680	2.2	50.0	0.80	4.0	1.0	100.0
1N4681	2.4	50.0	0.80	2.0	1.0	95.0
1N4682	2.7	50.0	0.85	1.0	1.0	90.0
1N4683	3.0	50.0	0.90	0.8	1.0	85.0
1N4684	3.3	50.0	0.95	7.5	1.5	80.0
1N4685	3.6	50.0	0.95	7.5	2.0	75.0
1N4686	3.9	50.0	0.97	5.0	2.0	70.0
1N4687	4.3	50.0	0.99	4.0	2.0	65.0
1N4688	4.7	50.0	0.99	10.0	3.0	60.0
1N4689	5.1	50.0	0.97	10.0	3.0	55.0
1N4690	5.6	50.0	0.96	10.0	4.0	50.0
1N4691	6.2	50.0	0.95	10.0	5.0	45.0
1N4692	6.8	50.0	0.90	10.0	5.1	35.0
1N4693	7.5	50.0	0.75	10.0	5.7	31.8
1N4694	8.2	50.0	0.50	1.0	6.2	29.0
1N4695	8.7	50.0	0.10	1.0	6.6	27.4
1N4696	9.1	50.0	0.08	1.0	6.9	26.2
1N4697	10.0	50.0	0.10	1.0	7.6	24.8
1N4698	11.0	50.0	0.11	0.05	8.4	21.6
1N4699	12.0	50.0	0.12	0.05	9.1	20.4

(Continued next page)

Electrical Specifications: T_A = +25°C (unless otherwise specified)

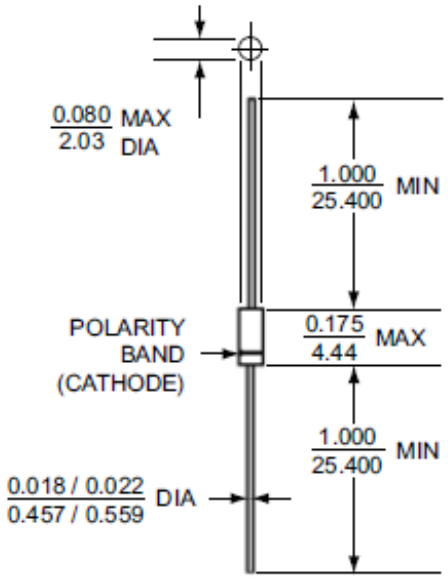
TYPE NUMBER (Note 1)	NOMINAL ZENER VOLTAGE VZ	ZENER TEST CURRENT IZT	MAXIMUM VOLTAGE REGULATION ΔVZ (Note 2)	MAXIMUM REVERSE LEAKAGE CURRENT IR @ VR		MAXIMUM DC ZENER CURRENT IZM
	VOLTS	µA	VOLTS	µA	VOLTS	mA
1N4700	13.0	50.0	0.13	0.05	9.8	19.0
1N4701	14.0	50.0	0.14	0.05	10.6	17.5
1N4702	15.0	50.0	0.15	0.05	11.4	16.3
1N4703	16.0	50.0	0.16	0.05	12.1	15.4
1N4704	17.0	50.0	0.17	0.05	12.9	14.5
1N4705	18.0	50.0	0.18	0.05	13.6	13.2
1N4706	19.0	50.0	0.19	0.05	14.4	12.5
1N4707	20.0	50.0	0.20	0.01	15.2	11.9
1N4708	22.0	50.0	0.22	0.01	16.7	10.8
1N4709	24.0	50.0	0.24	0.01	18.2	9.9
1N4710	25.0	50.0	0.25	0.01	19.0	9.5
1N4711	27.0	50.0	0.27	0.01	20.4	8.8
1N4712	28.0	50.0	0.28	0.01	21.2	8.5
1N4713	30.0	50.0	0.30	0.01	22.8	7.9
1N4714	33.0	50.0	0.33	0.01	25.0	7.2
1N4715	36.0	50.0	0.36	0.01	27.3	6.6
1N4716	39.0	50.0	0.39	0.01	29.6	6.1
1N4717	43.0	50.0	0.43	0.01	32.6	5.5

1. The JEDEC type numbers shown above have a standard tolerance of +5 % of the nominal Zener volume. VZ is measured with the diode in thermal equilibrium at 25°C + 3°C.
2. Vz @ 100 µA minus Vz @ 10 µA.

Absolute Maximum Ratings

Parameter	Absolute Maximum
Steady State Power Dissipation	500 mW @ +50°C
Forward Voltage	1.1 V @ 200 mA
DC Power Derating	4 mW / °C above +50°C
Operating & Storage Temperature	-65°C to +175°C

Outline Drawing



All dimensions in INCH / mm

DESIGN DATA

CASE: Hermetically sealed glass case. DO – 35 outline.

LEAD MATERIAL: Copper clad steel.

LEAD FINISH: Tin / Lead

THERMAL RESISTANCE: ($R_{\Theta JEC}$): 250 °C/W maximum at L = .375 inch

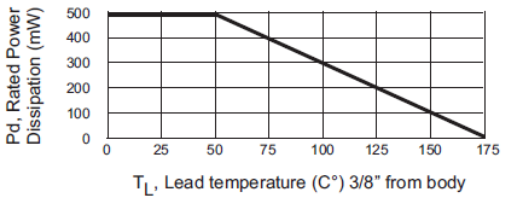
THERMAL IMPEDANCE: ($Z_{\Theta JX}$): 35 °C/W maximum

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

MOUNTING POSITION: ANY.

Graphs

FIGURE 1



POWER DERATING CURVE

1000

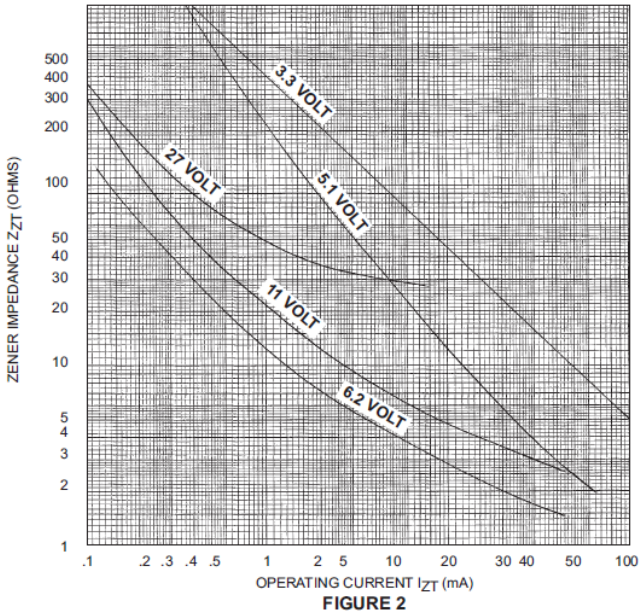


FIGURE 2

ZENER IMPEDANCE VS. OPERATING CURRENT