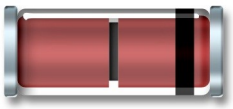
1N4099UR-1 thru 1N4135UR-1 & 1N4614UR-1 thru 1N4627UR-1

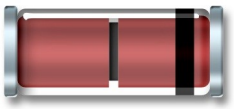
Low Noise Zener Diode Series

Rev. V3

Features

- Available in JAN, JANTX, JANTXV and JANS per MIL-PRF-19500/435
- Tight tolerances available in plus or minus 2% or 1% with C or D suffix respectively.
- 500 mW power handling
- Hermetically sealed MELF DO-213 package
- Also available in axial-leaded glass DO-35 style package.





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

JEDEC TYPE No. (Note1)	Normal Zener Voltage VZ @ IZT	Zener Test Current IZT	Maximum Zener Impedance ZZT	Maximum Reverse Current IR @ VR		Maximum Noise Density ND @ IZT	Maximum Zener Current IZM
	Volts	A	Ohms	A	Volts	V / √Hz	mA
1N4099UR-1	6.8	250	200	10	5.17	40	56
1N4100UR-1	7.5	250	200	10	5.7	40	51
1N4101UR-1	8.2	250	200	1	6.24	40	46
1N4102UR-1	8.7	250	200	1	6.61	40	44
1N4103UR-1	9.1	250	200	1	6.92	40	42
1N4104UR-1	10	250	200	1	7.6	40	38
1N4105UR-1	11	250	200	0.05	8.44	40	35
1N4106UR-1	12	250	200	0.05	8.12	40	32
1N4107UR-1	13	250	200	0.05	9.857	40	29
1N4108UR-1	14	250	200	0.05	10.65	40	27
1N4109UR-1	15	250	100	0.05	11.4	40	25
1N4110UR-1	16	250	100	0.05	12.15	40	24
1N4111UR-1	17	250	100	0.05	12.92	40	22
1N4112UR-1	18	250	100	0.05	13.67	40	21
1N4113UR-1	19	250	150	0.05	14.44	40	20
1N4114UR-1	20	250	150	0.01	15.2	40	19
1N4115UR-1	22	250	150	0.01	16.72	40	17
1N4116UR-1	24	250	150	0.01	18.25	40	16
1N4117UR-1	25	250	150	0.01	19	40	15
1N4118UR-1	27	250	150	0.01	20.45	40	14
1N4119UR-1	29	250	200	0.01	21.28	40	14
1N4120UR-1	30	250	200	0.01	22.8	40	13

(Continued next page)

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

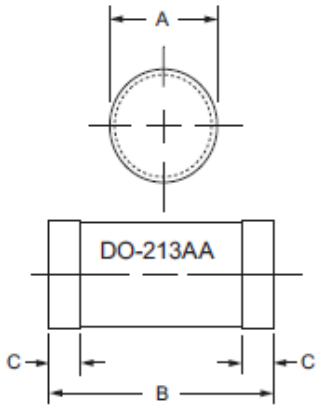
JEDEC TYPE No. (Note1)	Normal Zener Voltage VZ @ IZT	Zener Test Current IZT	Maximum Zener Impedance ZZT	Maximum Reverse Current IR @ VR		Maximum Noise Density ND @ IZT	Maximum Zener Current IZM
	Volts	A	Ohms	A	Volts	V / √Hz	mA
1N4121UR-1	33	250	200	0.01	25.08	40	12
1N4122UR-1	36	250	200	0.01	27.38	40	11
1N4123UR-1	39	250	200	0.01	29.65	40	9.8
1N4124UR-1	43	250	250	0.01	32.65	40	8.9
1N4125UR-1	47	250	250	0.01	35.75	40	8.1
1N4126UR-1	51	250	300	0.01	38.76	40	7.5
1N4127UR-1	56	250	300	0.01	42.6	40	6.7
1N4128UR-1	60	250	400	0.01	45.6	40	6.4
1N4129UR-1	62	250	500	0.01	47.1	40	6.1
1N4130UR-1	68	250	700	0.01	51.68	40	5.6
1N4131UR-1	75	250	700	0.01	57	40	5.1
1N4132UR-1	82	250	800	0.01	62.32	40	4.6
1N4133UR-1	87	250	1000	0.01	66.12	40	4.4
1N4134UR-1	91	250	1200	0.01	69.16	40	4.2
1N4135UR-1	100	250	1500	0.01	76	40	3
1N4614UR-1	1.8	250	1200	7.5	1	1	120
1N4615UR-1	2	250	1250	5	1	1	110
1N4616UR-1	2.2	250	1300	4	1	1	100
1N4617UR-1	2.4	250	1400	2	1	1	95
1N4618UR-1	2.7	250	1500	1	1	1	90
1N4619UR-1	3	250	1600	0.8	1	1	87
1N4620UR-1	3.3	250	1650	7.5	1.5	1	85
1N4621UR-1	3.6	250	1700	7.5	2	1	83
1N4622UR-1	3.9	250	1650	5	2	1	80
1N4623UR-1	4.3	250	1600	4	2	1	77
1N4624UR-1	4.7	250	1550	10	2	1	75
1N4625UR-1	5.1	250	1500	10	3	2	70
1N4626UR-1	5.6	250	1400	10	4	4	65
1N4627UR-1	6.2	250	1200	10	5	5	61

1. The JEDEC type numbers shown with no suffix have a standard tolerance of +5% on the nominal Zener voltage; suffix C is used to identify +2%: and suffix D is used identify +1% tolerance. Vz is measured with the diode in thermal equilibrium in 25°C still air.

Absolute Maximum Ratings

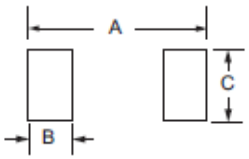
Parameter	Absolute Maximum
Steady State Power Dissipation	0.5 W
Forward Voltage	1.1 V @ 200 mA
Thermal Resistance	250°C/W
Operating & Storage Temperature	-65°C to +175°C

Outline Drawing



Symbol	Dimensions			
	Inches		Millimeters	
	Min	Max	Min	Max
A	.063	.067	1.60	1.70
B	.130	.146	3.30	3.71
C	.016	.022	0.41	0.56

PAD LAYOUT



Symbol	Inches	mm
A	.200	5.08
B	.055	1.40
C	.080	2.03

LEADED DESIGN DATA

CASE: DO-213AA, Hermetically sealed glass case. (MELF, SOD-80, LL34)

LEAD FINISH: Tin / Lead

THERMAL RESISTANCE: ($R_{\Theta JEC}$): 100 °C/W maximum at L = 0 inch

THERMAL IMPEDANCE: ($Z_{\Theta JX}$): 25 °C/W maximum

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

MOUNTING POSITION: Any.

Circuits & graphs

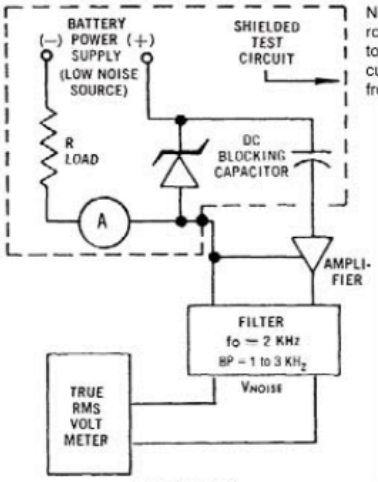


FIGURE 1
NOISE DENSITY MEASUREMENT CIRCUIT

Noise density, (N_D) is specified in microvolt-rms per squre-root-hertz. Actual measurement is performed using a 1 KHz to 3 KHz frequency bandpass filter at a constant Zener test current (I_{ZT}) AT 25°C ambient temperature. N_D is calculated from the formula.

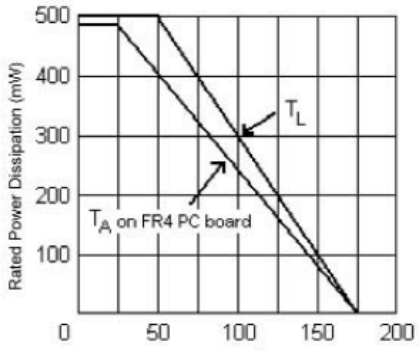


FIGURE 2 – POWER DERATING CURVE

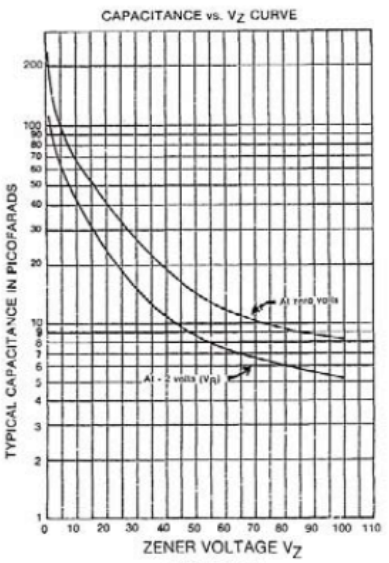


FIGURE 3
CAPACITANCE vs. ZENER VOLTAGE (TYPICAL)