

# 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-PRFUR-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: $T_A = +25^\circ\text{C}$ (unless otherwise specified)

JEDEC TYPE No. (Note1)	Normal Zener Voltage $V_Z @ I_ZT$	Zener Test Current $I_ZT$	Maximum Zener Impedance $Z_ZT$	Maximum Reverse Current $I_R @ V_R$		Maximum Noise Density $ND @ I_ZT$	Maximum Zener Current $I_ZM$
	Volts	$\mu\text{A}$	Ohms	$\mu\text{A}$	Volts	$\text{V} / \sqrt{\text{Hz}}$	$\text{mA}$
1N4099UR-1	6.8	250	200	1.0	5.2	40	56
1N4100UR-1	7.5	250	200	1.0	5.7	40	51
1N4101UR-1	8.2	250	200	0.5	6.3	40	46
1N4102UR-1	8.7	250	200	0.5	6.7	40	44
1N4103UR-1	9.1	250	200	0.5	7.0	40	42
1N4104UR-1	10	250	200	0.5	7.6	40	38
1N4105UR-1	11	250	200	0.05	8.5	40	35
1N4106UR-1	12	250	200	0.05	9.2	40	32
1N4107UR-1	13	250	200	0.05	9.9	40	29
1N4108UR-1	14	250	200	0.05	10.7	40	27
1N4109UR-1	15	250	100	0.05	11.4	40	25
1N4110UR-1	16	250	100	0.05	12.2	40	24
1N4111UR-1	17	250	100	0.05	13.0	40	22
1N4112UR-1	18	250	100	0.05	13.7	40	21
1N4113UR-1	19	250	150	0.05	14.5	40	20
1N4114UR-1	20	250	150	0.01	15.2	40	19
1N4115UR-1	22	250	150	0.01	16.8	40	17
1N4116UR-1	24	250	150	0.01	18.3	40	16
1N4117UR-1	25	250	150	0.01	19.0	40	15
1N4118UR-1	27	250	150	0.01	20.5	40	14
1N4119UR-1	28	250	200	0.01	21.3	40	14
1N4120UR-1	30	250	200	0.01	22.8	40	13

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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	$\mu\text{A}$	Volts	V / $\sqrt{\text{Hz}}$	mA
1N4121UR-1	33	250	200	0.01	25.1	40	12
1N4122UR-1	36	250	200	0.01	27.4	40	11
1N4123UR-1	39	250	200	0.01	29.7	40	9.8
1N4124UR-1	43	250	250	0.01	32.7	40	8.9
1N4125UR-1	47	250	250	0.01	35.8	40	8.1
1N4126UR-1	51	250	300	0.01	38.8	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	51.7	40	5.6
1N4131UR-1	75	250	700	0.01	57.0	40	5.1
1N4132UR-1	82	250	800	0.01	62.4	40	4.6
1N4133UR-1	87	250	1000	0.01	66.2	40	4.4
1N4134UR-1	91	250	1200	0.01	69.2	40	4.2
1N4135UR-1	100	250	1500	0.01	76.0	40	3.8
1N4614UR-1	1.8	250	1200	3.5	1	1	120
1N4615UR-1	2	250	1250	2.5	1	1	110
1N4616UR-1	2.2	250	1300	2.0	1	1	100
1N4617UR-1	2.4	250	1400	1.0	1	1	95
1N4618UR-1	2.7	250	1500	0.5	1	1	90
1N4619UR-1	3	250	1600	0.4	1	1	87
1N4620UR-1	3.3	250	1650	3.5	1.5	1	85
1N4621UR-1	3.6	250	1700	3.5	2	1	83
1N4622UR-1	3.9	250	1650	2.5	2	1	80
1N4623UR-1	4.3	250	1600	2.0	2	1	77
1N4624UR-1	4.7	250	1550	5.0	3	1	75
1N4625UR-1	5.1	250	1500	5.0	3	2	70
1N4626UR-1	5.6	250	1400	5.0	4	4	65
1N4627UR-1	6.2	250	1200	5.0	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

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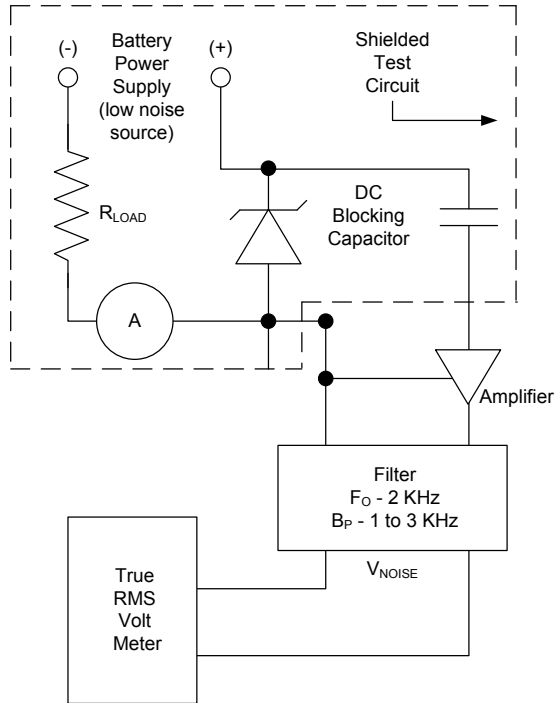
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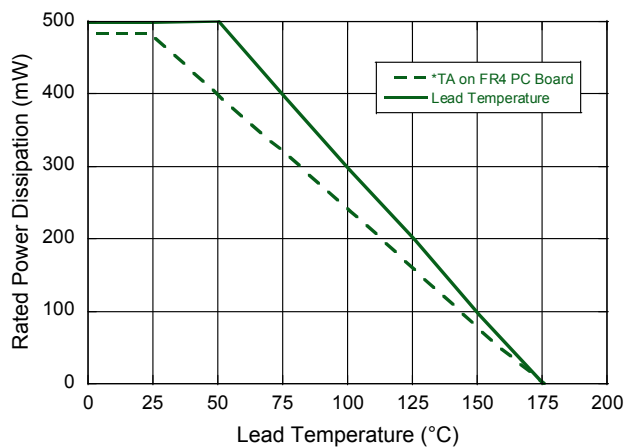
### Circuit



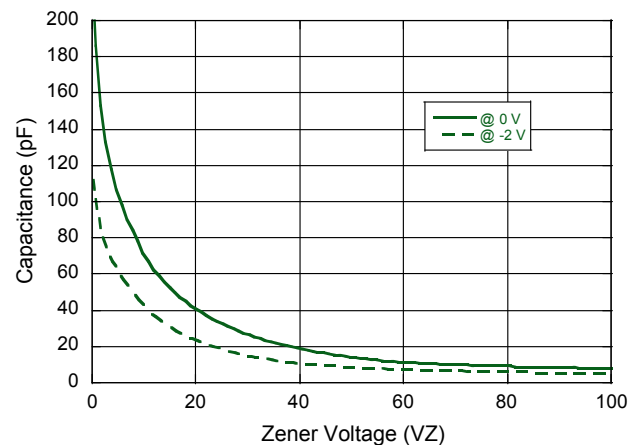
Noise Density ( $N_D$ ), is specified in microvolt-rms per square-root-hertz. Actual measurement is performed using a 1 KHz to 3 KHz frequency bandpass filter at a constant Zener test current ( $I_{ZT}$ ) at  $+25^\circ\text{C } T_A$ .  $N_D$  is calculated from the formula.

### Graphs

**Power Derating vs. Lead Temperature**



**Capacitance vs. Zener Voltage**



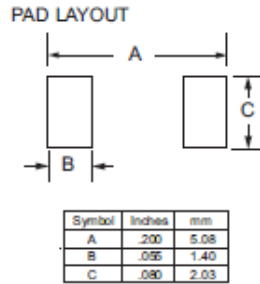
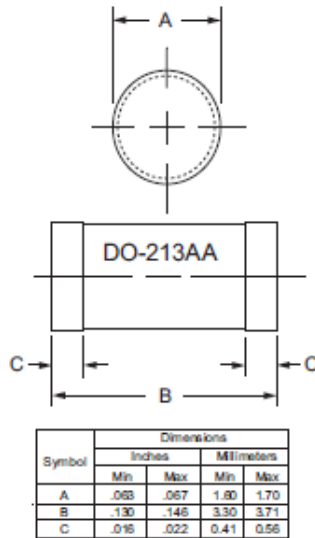
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### Outline Drawing



#### 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.

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