

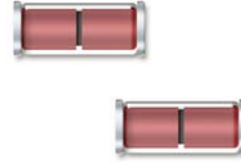
# Zener Voltage Regulator Series

## 1N6321US thru 1N6349US



### Features

- JAN, JANTX, JANTXV and JANS available per MIL-PRF-19500/533
- Voidless hermetically sealed glass package
- Triple-layer passivation
- Internal "Category I" Metallurgical bonds for 1N6321US thru 1N6349US
- Also available in axial-leaded glass DO-35 style package.



### Description

This Zener Voltage Regulator series is military qualified to MIL-PRF-19500/533 and is ideal for high reliability applications where a failure cannot be tolerated. These industry-recognized 0.5 Watt Zener Voltage Regulators are hermetically sealed with voidless-glass construction using an internal metallurgical bond. It includes Zener selections from 7.5 to 110 volts in standard 5% tolerances as well as tighter tolerances identified by different suffix letters on the part number. They are also available in surface-mount packages. Aeroflex / Metelics also offers numerous other Zener products to meet higher and lower power ratings in both thru-hole and surface mount packages.

### Applications / Benefits

- DO-213AA, Hermetically sealed glass case. (MELF, SOD-80, LL34)
- Regulates voltage over a broad operating current and temperature range
- Extensive selection from 7.5 to 110 V
- Standard voltage tolerances are plus/minus 5% with no suffix
- Tight tolerances available in plus or minus 2% or 1% with C or D suffix respectively
- Extremely robust construction
- Flexible axial-lead mounting terminals
- Nonsensitive to ESD per MIL-STD-750 Method 1020

### Maximum Ratings

- Operating Temperature:  $-65^{\circ}\text{C}$  to  $+175^{\circ}\text{C}$
- Storage Temperature:  $-65^{\circ}\text{C}$  to  $+175^{\circ}\text{C}$
- Power Dissipation: 0.5 Watts @  $T_L = 75^{\circ}\text{C}$
- Thermal Resistance:  $200^{\circ}\text{C}/\text{W}$  junction to lead at 3/8 inch (10 mrn) from body
- Thermal Impedance:  $15^{\circ}\text{C}/\text{W}$  at 10 ms
- Forward Voltage: 1.4 V at 1.0 A



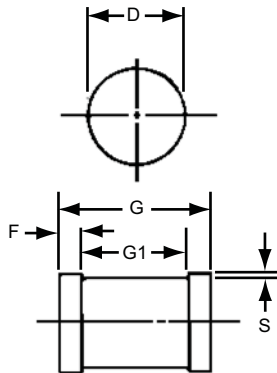
### Electrical Characteristics

TYPE Note 1	V <sub>Z2</sub> Nominal +/-5% @ I <sub>Z2</sub>	V <sub>Z1</sub> Nominal +/-5% @ I <sub>Z1</sub>	Test Current I <sub>Z2</sub>	Dynamic Impedance Z <sub>Z</sub> @ I <sub>Z2</sub>	Dynamic Impedance Z <sub>Zk</sub> @ 250 mA	Maximum Current I <sub>ZM</sub>	Voltage Regulation V <sub>Z</sub> (reg) (ΔV <sub>Z</sub> ) Note 2	Surge Current @ 8.3 ms sq. wave I <sub>ZSM</sub>	Reverse Current V <sub>R</sub>	Maximum Reverse Current I <sub>R1</sub> @ V <sub>R</sub> 25 °C	Maximum Reverse Current I <sub>R2</sub> @ V <sub>R</sub> 150 °C	Maximum Noise Density ND @ 250 μA 1 to 3 kHz	Maximum Temperature Coefficient Zener Voltage α <sub>VZ</sub>	Maximum Capacitance @ 0 V
	Volts	Volts	mA	Ohms	Ohms	mA	Volts	Amps	Volts	μA	μA	mV / √Hz	%/°C	pF
1N6321US	7.5	6.6	20	4	400	57	0.4	1.16	5.0	2.0	10	5.0	+0.068	900
1N6322US	8.2	7.5	20	5	400	52	0.4	1.07	6.0	1.0	10	20	+0.075	800
1N6323US	9.1	8.4	20	6	500	47	0.5	0.97	7.0	1.0	10	40	+0.076	700
1N6324US	10	9.1	20	6	500	43	0.5	0.89	8.0	1.0	10	80	+0.079	600
1N6325US	11	10.0	20	7	550	39	0.5	0.83	8.5	1.0	10	100	+0.082	500
1N6326US	12	11.0	20	7	550	35	0.55	0.77	9.0	1.0	10	100	+0.083	450
1N6327US	13	11.9	9.5	8	550	33	0.55	0.71	9.9	0.05	10	100	+0.079	400
1N6328US	15	13.8	8.5	10	600	28	0.70	0.62	11	0.05	10	100	+0.082	350
1N6329US	16	14.7	7.8	12	600	27	0.75	0.58	12	0.05	10	100	+0.083	325
1N6330US	18	16.6	7.0	14	600	24	0.85	0.52	14	0.05	10	100	+0.085	300
1N6331US	20	18.5	6.2	18	500	21	0.95	0.47	15	0.05	10	100	+0.086	275
1N6332US	22	20.4	5.6	20	500	19	1.05	0.43	17	0.05	10	100	+0.087	260
1N6333US	24	22.3	5.2	24	500	18	1.15	0.39	18	0.05	10	100	+0.088	240
1N6334US	27	25.2	4.6	27	500	16	1.30	0.35	21	0.05	10	100	+0.090	220
1N6335US	30	28.0	4.2	32	500	14	1.45	0.31	23	0.05	10	100	+0.091	200
1N6336US	33	30.9	3.8	40	600	13	1.60	0.28	25	0.05	10	100	+0.092	185
1N6337US	36	33.7	3.4	50	600	12	1.75	0.26	27	0.05	10	100	+0.093	175
1N6338US	39	36.6	3.2	55	700	11	1.90	0.24	30	0.05	10	100	+0.094	170
1N6339US	43	40.4	3.0	65	800	9.9	2.10	0.22	33	0.05	10	80	+0.095	165
1N6340US	47	44.2	2.7	75	900	9.0	2.25	0.20	36	0.05	10	80	+0.095	155
1N6341US	51	48.0	2.5	85	1000	8.3	2.50	0.18	39	0.05	10	80	+0.096	145
1N6342US	56	52.7	2.2	100	1200	7.6	2.70	0.17	43	0.05	10	80	+0.007	135
1N6343US	62	58.4	2.0	125	1300	6.8	2.90	0.15	47	0.05	10	80	+0.097	130
1N6344US	68	64.1	2.8	155	1500	6.3	3.20	0.13	52	0.05	10	80	+0.098	120
1N6345US	75	70.8	1.7	180	1600	5.7	3.40	0.125	56	0.05	10	80	+0.098	110
1N6346US	82	77.4	1.5	220	1800	5.2	3.80	0.115	62	0.05	10	80	+0.099	105
1N6347US	91	86.0	1.4	270	2100	4.7	4.20	0.100	69	0.05	10	80	+0.099	100
1N6348US	100	94.5	1.3	340	2400	4.2	4.40	0.095	76	0.05	10	80	+0.110	85
1N6349US	110	104	1.1	500	2800	3.9	4.80	0.085	84	0.05	10	80	+0.110	90

NOTE 1: Tight tolerances available in plus or minus 2% or 1% with C or D suffix respectively, e.g. 1N6309C, 1N6335D, etc.

NOTE2: Voltage regulation V<sub>Z(reg)</sub> is the measured voltage change at thermal equilibrium between the current of 10% and 50% of Maximum Zener Current I<sub>ZM</sub> when the lead temperature is maintained at 25°C = +8°C, -2°C.

Outline Drawing



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
D	1.60	1.70	0.063	0.067
F	0.41	0.55	0.016	0.022
G	3.30	3.70	.130	.146
G1	2.54 REF.		.100 REF.	
S	0.03 MIN.		.001 MIN.	

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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