

# 1N957BUR-1 thru 1N986BUR-1

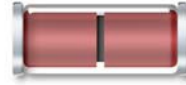


## Silicon Zener Diode Series

Rev. V1

### Features

- Available in JAN, JANTX and JANTXV per MIL-PRF-19500/117
- Standard voltage tolerances are plus/minus 5% with B suffix, 10% with A suffix identification.
- Tight tolerances available in plus or minus 2% or 1% with C or D suffix respectively.
- 500 mW power handling
- Hermetically sealed axial-leaded glass DO-213AA package.



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

Part # <sup>1</sup>	Normal Zener Voltage $V_Z$	Zener Test Current $I_{ZT}$	Max. Zener Impedance			Max. DC Zener Current $I_{ZM}$	Max. Surge Current $I_{ZSM}$	Max. Reverse Leakage $I_R @ V_R$		Max. Temperature Coefficient $a_{V_Z}$
	Volts	mA	$Z_{ZT} @ I_{ZT}$ Ohms	$Z_{ZK}$ Ohms	@ $I_{ZK}$ mA	mA	mA	mA	Volts	%/°C
1N957BUR-1	6.8	18.5	4.5	700	1.0	55	300	150	5.2	0.05
1N958BUR-1	7.5	16.5	5.5	700	0.5	50	275	75	5.7	0.058
1N959BUR-1	8.2	15.0	6.5	700	0.5	45	250	50	6.2	0.065
1N960BUR-1	9.1	14.0	7.5	700	0.5	41	225	25	6.9	0.068
1N961BUR-1	10	12.5	8.5	700	0.25	38	200	10	7.6	0.075
1N962BUR-1	11	11.5	9.5	700	0.25	32	175	5	8.4	0.076
1N963BUR-1	12	10.5	11.5	700	0.25	31	160	5	9.1	0.077
1N964BUR-1	13	9.5	13	700	0.25	28	150	5	9.9	0.079
1N965BUR-1	15	8.5	16	700	0.25	25	130	5	11.4	0.082
1N966BUR-1	16	7.8	17	700	0.25	24	120	5	12.2	0.083
1N967BUR-1	18	7.0	21	750	0.25	20	110	5	13.7	0.085
1N968BUR-1	20	6.2	25	750	0.25	18	100	5	15.2	0.086
1N969BUR-1	22	5.6	29	750	0.25	16	90	5	16.7	0.087
1N970BUR-1	24	5.2	33	750	0.25	15	80	5	18.2	0.088

1. The JEDEC type numbers shown (B Suffix) have a +5% tolerance on nominal Zener Voltage. The suffix A is used to identify +10% tolerance; suffix C is used to identify +2%; and suffix D is used to identify +1%; no suffix indicates +20%.

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Part # <sup>1</sup>	Normal Zener Voltage $V_Z$	Zener Test Current $I_{ZT}$	Max. Zener Impedance			Max. DC Zener Current $I_{ZM}$	Max. Surge Current $I_{ZSM}$	Max. Reverse Leakage $I_R @ V_R$		Max. Temperature Coefficient $a_{V_Z}$
	Volts	mA	$Z_{ZT} @ I_{ZT}$ Ohms	$Z_{ZK}$ Ohms	@ $I_{ZK}$ mA	mA	mA	mA	Volts	%/ $^\circ\text{C}$
1N971BUR-1	27	4.6	41	750	0.25	13	70	5	20.6	0.090
1N972BUR-1	30	4.2	49	1000	0.25	12	65	5	22.8	0.091
1N973BUR-1	33	3.8	58	1000	0.25	11	60	5	25.1	0.092
1N974BUR-1	36	3.4	70	1000	0.25	10	55	5	27.4	0.093
1N975BUR-1	39	3.2	80	1000	0.25	9.5	46	5	29.7	0.094
1N976BUR-1	43	3.0	93	1000	0.25	8.8	44	5	32.7	0.095
1N977BUR-1	47	2.7	105	1500	0.25	7.9	40	5	35.8	0.095
1N978BUR-1	51	2.5	125	1500	0.25	7.4	37	5	38.8	0.096
1N979BUR-1	56	2.2	150	2000	0.25	6.8	35	5	42.6	0.096
1N980BUR-1	62	2.0	185	2000	0.25	6.0	30	5	47.1	0.097
1N981BUR-1	68	1.8	230	2000	0.25	5.5	28	5	51.7	0.097
1N982BUR-1	75	1.7	270	2000	0.25	5.0	26	5	56.0	0.098
1N983BUR-1	82	1.5	330	3000	0.25	4.6	23	5	62.2	0.098
1N984BUR-1	91	1.4	400	3000	0.25	4.1	21	5	69.2	0.099
1N985BUR-1	100	1.3	500	3000	0.25	3.7	18	5	76.0	0.11
1N986BUR-1	110	1.1	750	4000	0.25	3.3	16	5	83.6	0.11

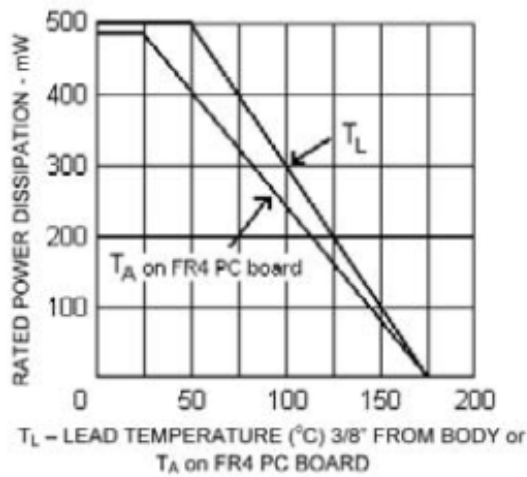
1. The JEDEC type numbers shown (B Suffix) have a +5% tolerance on nominal Zener Voltage. The suffix A is used to identify +10% tolerance; suffix C is used to identify +2%; and suffix D is used to identify +1%; no suffix indicates +20%.

### Absolute Maximum Ratings<sup>2,3</sup>

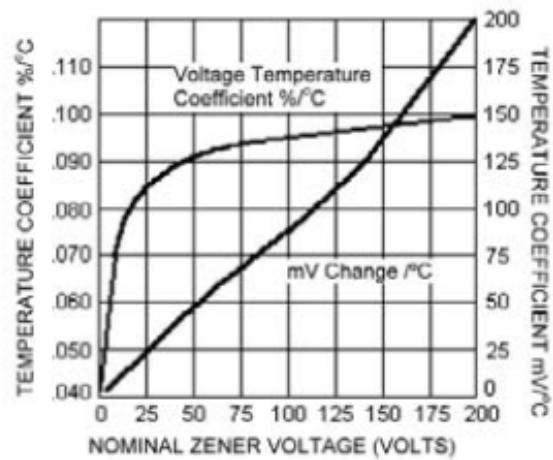
Parameter	Absolute Maximum
Thermal Resistance	250 $^\circ\text{C}/\text{W}$
Steady-State Power	0.5 W
Forward Voltage	1.1 V @ 200 mA
Operating / Storage Temperature	-65 $^\circ\text{C}$ to +175 $^\circ\text{C}$

2. Exceeding any one or combination of these limits may cause permanent damage to this device.

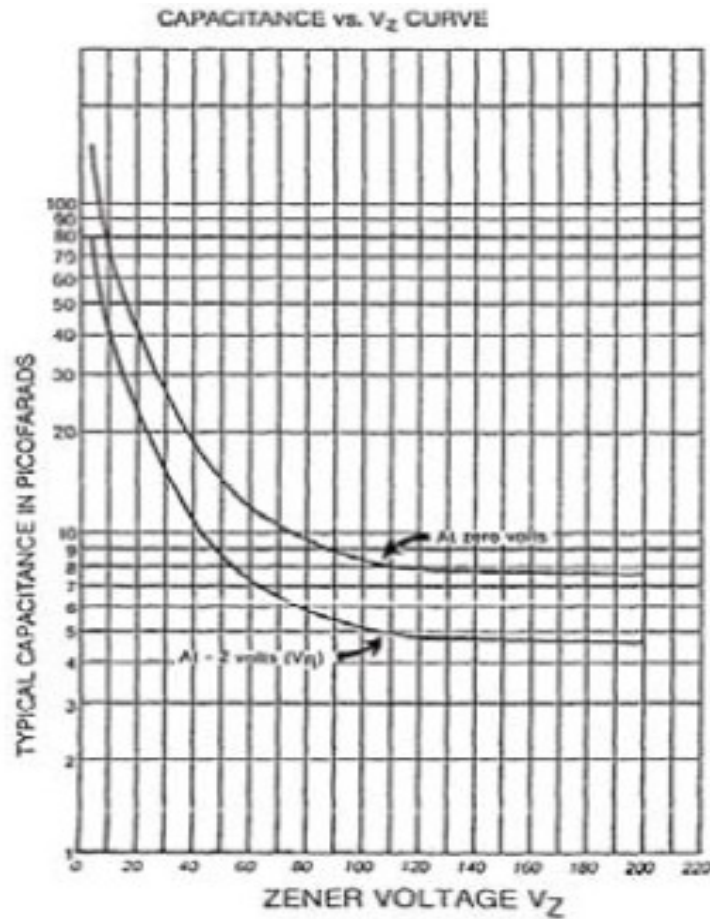
3. MACOM does not recommend sustained operation near these survivability limits.



**FIGURE 1**  
POWER DERATING CURVE

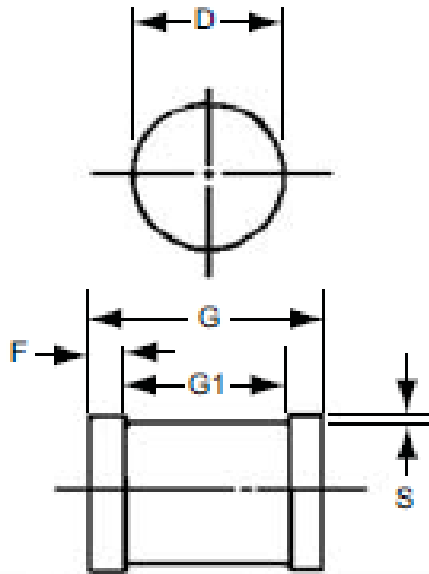


**FIGURE 2**  
ZENER VOLTAGE TEMPERATURE COEFFICIENT vs. ZENER VOLTAGE



**FIGURE 3**  
CAPACITANCE vs. ZENER VOLTAGE

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



### LEADED DESIGN DATA

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

LEAD FINISH: Tin / Lead

POLARITY: Cathode end is banded.

MOUNTING POSITION: Any.

MOUNTING SURFACE SELECTION: The Axial Coefficient of Expansion (COE) Of this Device is Approximately +6 PPM/°C. The COE of the Mounting Surface System Should Be Selected To Provide A Suitable Match With This Device.

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	0.130	0.140
G1	2.54 ref.		0.100 ref.	
S	0.03 min.		0.001 min.	

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