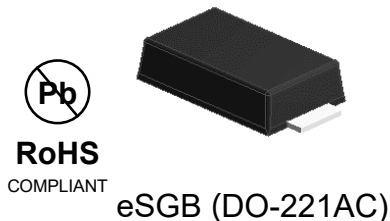


3W,9.1 - 100V Zener Diodes

Features

- Low leakage current
- Available in unidirectional
- Glass passivated junction
- Zener voltage tolerance is $\pm 5\%$
- Total power dissipation: Max 3W
- Moisture sensitivity: level 1, per J-STD-020
- Halogen-free according to IEC 61249-2-21 definition
- AEC-Q101 qualified



Applications

Protection from high voltage, high energy transients, voltage stabilization and automotive applications.

Absolute Maximum Ratings ($T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Ratings	Unit
Zener voltage	V_Z	See Next Table	V
Power dissipation at $T_L=75^\circ\text{C}$	P_{tot}	3	W
Maximum instantaneous forward voltage at 200mA	V_F	1.2	V
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

Thermal-Mechanical Specifications ($T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Typ	Unit
Thermal Resistance, Junction to Ambient	R_{thJA}	85	$^\circ\text{C} / \text{W}$
Thermal Resistance, Junction to Case	R_{thJC}	15	$^\circ\text{C} / \text{W}$
Thermal Resistance, Junction to Lead	R_{thJL}	18	$^\circ\text{C} / \text{W}$

Note:

1. The thermal resistance from junction to ambient, case or lead, mounted on P.C.B with 5×5mm copper pads

Electrical Characteristics (TA = 25 °C unless otherwise noted)

Part Number	Marking	V _Z at I _{ZT} (V)			I _{ZT} (mA)	Maximum zener impedance		I _{ZK} (mA)	Maximum reverse leakage at V _R (μA)	Test voltage V _R (V)	Maximum Zener Current
		Min	Typ	Max		Z _{ZT} at I _{ZT} (Ω)	Z _{ZK} at I _{ZK} (Ω)				I _{ZM} (mA)
AL3N5924B	A5924B	8.65	9.1	9.56	82.4	4	500	0.5	5	7.0	308
AL3N5925B	A5925B	9.50	10	10.50	75.0	4.5	500	0.25	5	8.0	280
AL3N5926B	A5926B	10.45	11	11.55	68.2	5.5	550	0.25	1	8.4	255
AL3N5927B	A5927B	11.40	12	12.60	62.5	6.5	550	0.25	1	9.1	233
AL3N5928B	A5928B	12.35	13	13.65	57.7	7	550	0.25	1	9.9	215
AL3N5929B	A5929B	14.25	15	15.75	53.6	9	600	0.25	1	11.4	200
AL3N5930B	A5930B	15.20	16	16.80	46.9	10	600	0.25	1	12.2	175
AL3N5931B	A5931B	17.10	18	18.90	41.7	12	650	0.25	1	13.7	156
AL3N5932B	A5932B	19.00	20	21.00	37.5	14	650	0.25	1	15.2	140
AL3N5933B	A5933B	20.90	22	23.10	34.1	17.5	650	0.25	1	16.7	127
AL3N5934B	A5934B	22.80	24	25.20	31.3	19	700	0.25	1	18.2	117
AL3N5935B	A5935B	25.65	27	28.35	27.8	23	700	0.25	1	20.6	104
AL3N5936B	A5936B	28.50	30	31.50	25.0	28	750	0.25	1	22.8	93
AL3N5937B	A5937B	31.35	33	34.65	22.7	33	800	0.25	1	25.1	85
AL3N5938B	A5938B	34.20	36	37.80	20.8	38	850	0.25	1	27.4	78
AL3N5939B	A5939B	37.05	39	40.95	19.2	45	900	0.25	1	29.7	72
AL3N5940B	A5940B	40.85	43	45.15	17.4	53	950	0.25	1	32.7	65
AL3N5941B	A5941B	44.65	47	49.35	16.0	67	1000	0.25	1	35.8	60
AL3N5942B	A5942B	48.45	51	53.55	14.7	70	1100	0.25	1	38.8	55
AL3N5943B	A5943B	53.20	56	58.80	13.4	86	1300	0.25	1	42.6	50
AL3N5944B	A5944B	58.90	62	65.10	12.1	100	1500	0.25	1	47.1	45
AL3N5945B	A5945B	64.60	68	71.40	11.0	120	1700	0.25	1	51.7	41
AL3N5946B	A5946B	71.25	75	78.75	10.0	140	2000	0.25	1	56.0	37
AL3N5947B	A5947B	77.90	82	86.10	9.1	160	2500	0.25	1	62.2	34
AL3N5948B	A5948B	86.45	91	95.55	8.2	200	3000	0.25	1	69.2	31
AL3N5949B	A5949B	95.0	100	105.0	7.5	250	3100	0.25	1	76.0	28

Ratings and Characteristics Curves (T_A = 25°C unless otherwise note)

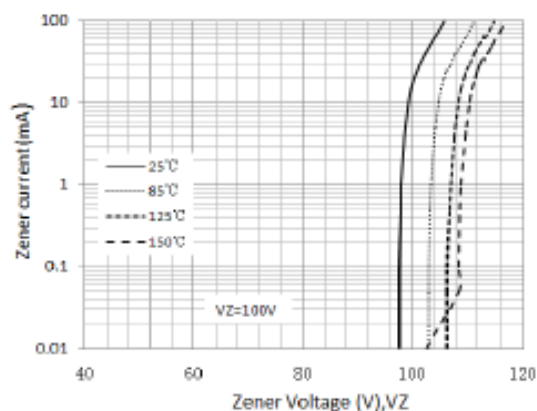


Figure 1. Typical Zener Voltage, VZ=100V

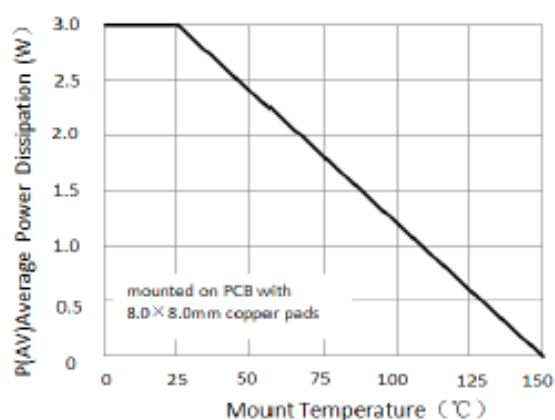


Figure 2. Steady State POWER Derating

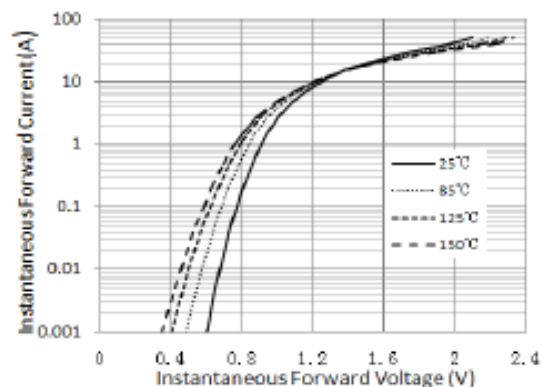


Figure 3. Typical Instantaneous Forward Characteristics

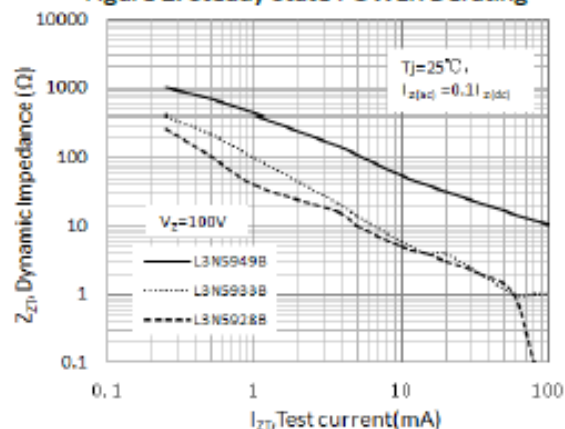


Figure 4. Typical Zener Impedance

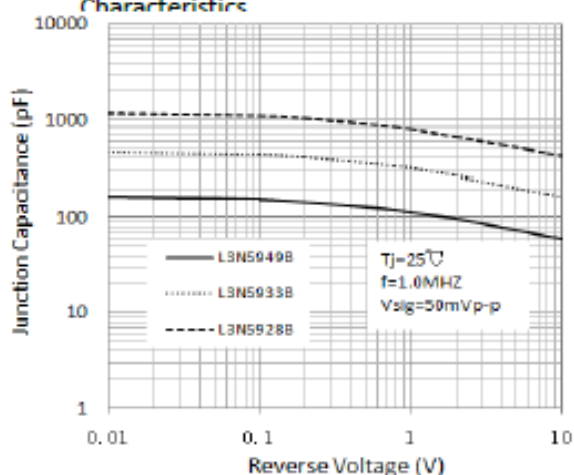


Figure 5. Typical Junction Capacitance

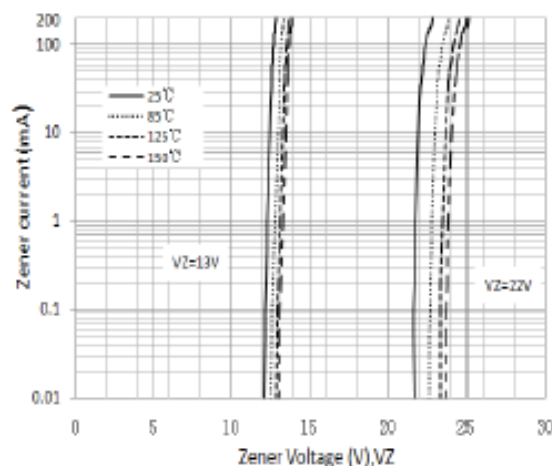
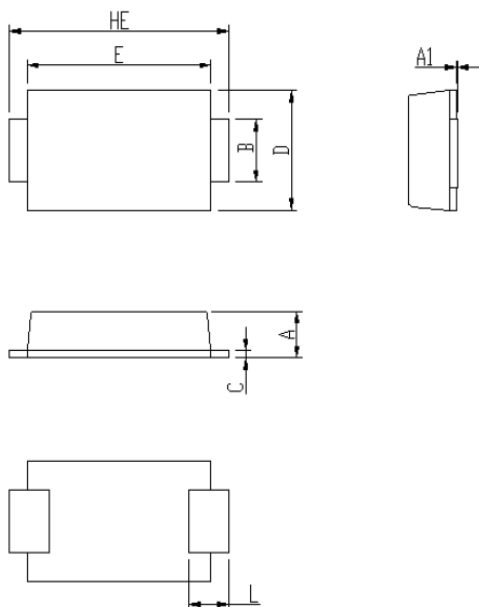


Figure 6. Typical Zener Voltage, VZ=13V / 22V

Package Outline Dimensions

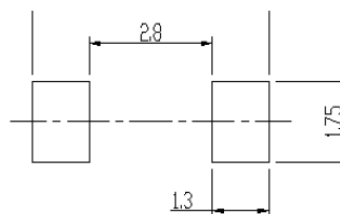
in inches (millimeters)

eSGB (DO-221AC)



DIM	Unit: mm		Unit: inch	
	MIN	MAX	MIN	MAX
A	0.92	1.08	0.036	0.043
A1	0	0.1	0.000	0.004
B	1.25	1.45	0.049	0.057
C	0.1	0.25	0.004	0.010
D	2.6	2.8	0.102	0.110
E	4.1	4.3	0.161	0.169
L	0.7	1.1	0.028	0.043
HE	4.8	5.2	0.189	0.205

Soldering footprint



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