SEMICONDUCTOR

DATA SHEET

LZ2V2A/B~LZ39A/B/C/D Series

500 mW LL-34 Hermetically Sealed Glass Zener Voltage Regulators

SURFACE MOUNT
LL34

DEVICE MARKING DIAGRAM

Cathode Band Color : Blue

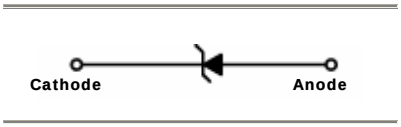
Absolute Maximum Ratings T_A = 25°C unless otherwise noted

Parameter	Value	Units
Power Dissipation	500	mW
Storage Temperature Range	-65 to +200	°C
Operating Junction Temperature	+200	°C

These ratings are limiting values above which the serviceability of the diode may be impaired.

Specification Features:

Zener Voltage Range 2.0 to 39 Volts (Graded)
LL-34 (Mini-MELF) Package
Surface Device Type Mounting
Hermetically Sealed Glass
Compression Bonded Construction
All external surfaces are corrosion resistant and leads are readily solderable
1st band indicates negative polarity



ELECTRICAL SYMBOL

Electrical Characteristics T_A = 25°C unless otherwise noted

Device Type	VZ Tolerance	VZ@IZT			Izt (mA)	Zzt@Izt (Ohms) Max	Zzk@Izk (Ohms) Max	Izk (mA)	I_R @V_R (uA) Max	V_R (V)
		Min	Nom	Max						
LZ2V2	A	2.12	2.21	2.30	20	35	400	1	55	0.7
	B	2.22	2.32	2.41						
LZ2V4	A	2.33	2.42	2.51	20	35	400	1	84	1
	B	2.44	2.53	2.62						
LZ2V7	A	2.54	2.64	2.74	20	35	450	1	70	1
	B	2.69	2.80	2.91						
LZ3V0	A	2.85	2.96	3.06	20	35	450	1	35	1
	B	3.01	3.12	3.22						
LZ3V3	A	3.16	3.27	3.37	20	35	450	1	14	1
	B	3.32	3.43	3.53						
LZ3V6	A	3.47	3.57	3.67	20	48	850	1	2.8	1
	B	3.63	3.73	3.82						
LZ3V9	A	3.77	3.88	3.98	20	40	850	1	1.4	1
	B	3.92	4.03	4.13						
LZ4V3	A	4.06	4.15	4.24	20	32	850	1	0.47	1
	B	4.21	4.30	4.38						
	C	4.33	4.44	4.54						
LZ4V7	A	4.46	4.56	4.66	20	21	770	1	0.19	1
	B	4.58	4.68	4.77						
	C	4.71	4.81	4.91						

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

Device Type	T Tolerance	V_Z@Izt Min	V_Z@Izt Nom	V_Z@Izt Max	Izt (mA)	Zzt@Izt (Ohms) Max	Zzk@Izk (Ohms) Max	Izk (mA)	I_R@V_R (uA) Max	V_R (V)
LZ5V1	A	4.84	4.94	5.04	20	17	685	1	0.19	1.5
	B	4.97	5.08	5.18						
	C	5.11	5.23	5.35						
LZ5V6	A	5.29	4.41	5.52	20	10.5	425	1	0.75	2.5
	B	5.46	5.58	5.70						
	C	5.64	5.76	5.88						
LZ6V2	A	5.81	5.94	6.06	20	8.5	255	1	3.30	3.0
	B	5.99	6.12	6.24						
	C	6.16	6.28	6.40						
LZ6V8	A	6.31	6.45	6.59	20	6.6	123	0.5	1.10	3.5
	B	6.52	6.66	6.79						
	C	6.70	6.83	6.95						
LZ7V5	A	6.88	7.04	7.20	20	6.6	95	0.5	0.30	4.0
	B	7.11	7.26	7.42						
	C	7.32	7.49	7.65						
LZ8V2	A	7.55	7.73	7.91	20	6.6	95	0.5	0.30	5.0
	B	7.81	7.99	8.16						
	C	8.06	8.24	8.42						
LZ9V1	A	8.31	8.51	8.71	20	6.6	95	0.5	0.30	6.0
	B	8.60	8.80	9.00						
	C	8.88	9.09	9.30						
LZ10V	A	9.18	9.39	9.60	20	6.6	95	0.5	0.11	7.0
	B	9.47	9.69	9.91						
	C	9.81	10.06	10.32						
LZ11V	A	10.16	10.41	10.65	10	8.5	95	0.5	0.133	8.0
	B	10.49	10.73	10.96						
	C	10.81	11.04	11.27						
LZ12V	A	11.12	11.38	11.64	10	9.5	95	0.5	0.133	9.0
	B	11.49	11.71	11.93						
	C	11.79	12.05	12.31						
LZ13V	A	12.17	12.45	12.72	10	11.4	95	0.5	0.133	10
	B	12.58	12.87	13.17						
	C	13.02	13.33	13.63						
LZ15V	A	13.47	13.79	14.10	10	13.3	95	0.5	0.133	11
	B	13.94	14.26	14.57						
	C	14.40	14.72	15.04						
LZ16V	A	14.85	15.19	15.52	10	15.2	132	0.5	0.133	12
	B	15.30	15.65	15.99						
	C	15.77	16.14	16.51						
LZ18V	A	16.32	16.70	17.08	10	19.4	123	0.5	0.133	13
	B	16.90	17.29	17.67						
	C	17.50	17.90	18.30						
LZ20V	A	17.11	18.52	18.93	10	23.5	170	0.5	0.133	15
	B	17.71	19.13	19.55						
	C	19.35	19.80	20.25						
	D	19.86	20.30	20.74						
LZ22V	A	20.21	20.66	21.10	5	25.6	170	0.5	0.133	17
	B	20.75	21.21	21.67						
	C	21.22	21.66	22.10						
	D	21.67	22.15	22.62						
LZ24V	A	22.24	22.69	23.14	5	29.0	170	0.5	0.133	19
	B	22.73	23.24	23.75						
	C	23.27	23.78	24.29						
	D	23.79	24.31	24.84						
LZ27V	A	24.24	24.89	25.54	5	38.0	210	0.5	0.133	21
	B	24.95	25.62	26.28						
	C	25.60	26.29	26.97						
	D	26.28	26.97	27.67						

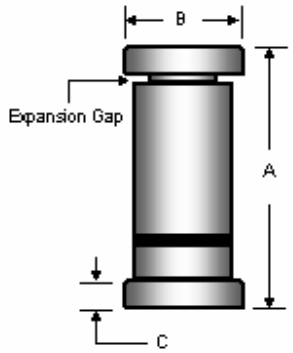
Electrical Characteristics (T_A = 25°C unless otherwise noted)

Device Type	T Tolerance	V_Z@Izt			Izt (mA)	Zzt@Izt (Ohms) **Max**	Zzk@Izk (Ohms) **Max**	Izk (mA)	I_R@V_R (uA) **Max**	V_R (V)
		Min	**Nom**	**Max**						
LZ30V	A	26.98	27.69	28.41	5	46.0	210	0.5	0.133	23
	B	27.67	28.41	29.15						
	C	28.34	29.09	29.84						
	D	29.00	29.77	30.54						
LZ33V	A	29.66	30.45	31.25	5	55.0	210	0.5	0.133	25
	B	30.29	31.10	31.91						
	C	30.88	31.70	32.52						
	D	31.46	32.30	33.15						
LZ36V	A	32.19	32.96	33.74	5	63.0	210	0.5	0.133	27
	B	32.83	33.63	34.42						
	C	33.46	34.27	35.07						
	D	31.07	34.89	35.71						
LZ39V	A	34.74	35.57	36.41	5	72.0	210	0.5	0.133	30
	B	35.41	36.26	37.12						
	C	36.05	36.92	37.79						
	D	36.69	37.58	38.46						
VF (forward voltage) = 1.2 V maximum @ IF = 200mA for all types										

Notes:

1. The zener voltage subdivision (VZ) is measured 40mS after diode is powered up.
2. The operating resistance (Zzt and Zzk) is measured by superimposing a minute alternation current in the regulated current (Iz).
3. When ordering, please specify tolerance A, B, C or D.

Package Outline

Package	Case Outline
LL34	

DIM	LL-34			
	Millimeters		**Inches**	
	Min	Max	Min	Max
A	3.302	3.505	0.130	0.138
B	1.397	1.499	0.055	0.059
C	0.350	0.500	0.014	0.020

Notes:

1. LL34 polarity denoted by a band.
2. 'Expansion Gap' has no relation to the location of polarity.

DEVICE CHARACTERISTICS

LZ2V2A/B~LZ39A/B/C/D Series

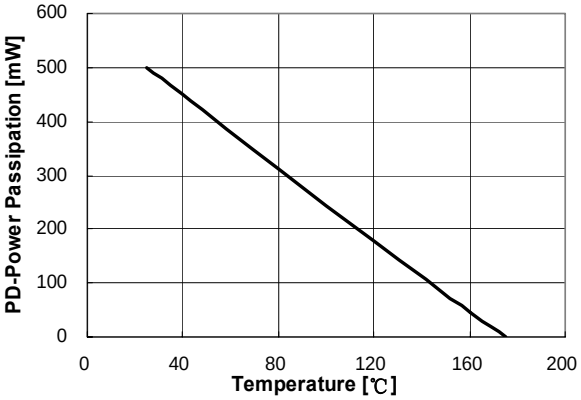


Figure 1. Power Dissipation vs Ambient Temperature
Valid provided leads at a distance of 0.8mm from case are kept at ambient temperature

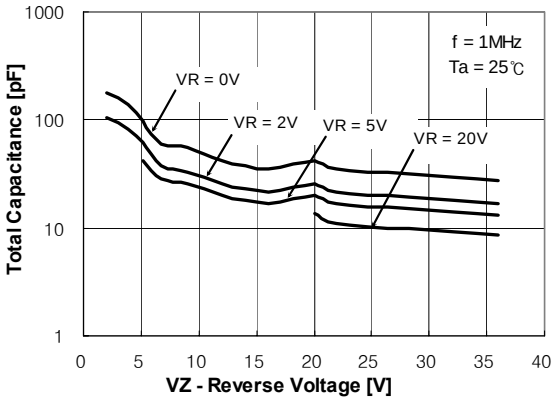


Figure 2. Total Capacitance

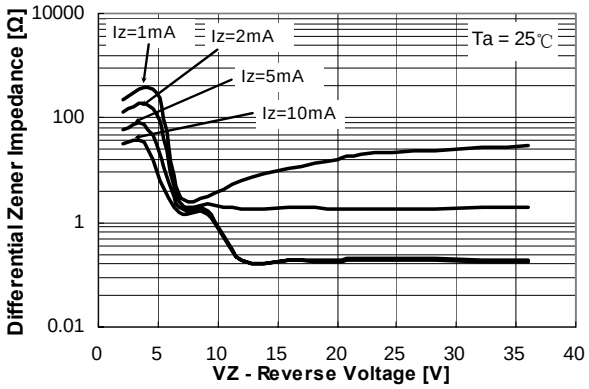


Figure 3. Differential Impedance vs. Zener Voltage

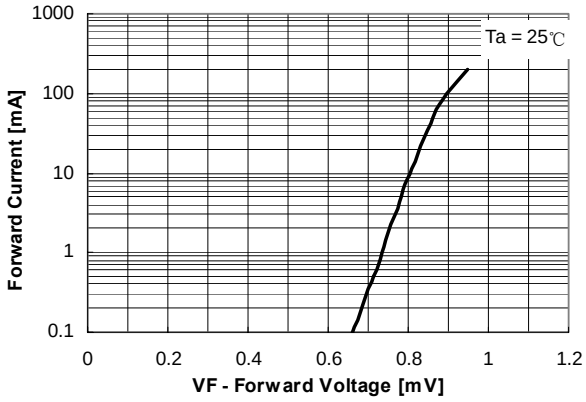


Figure 4. Forward Current vs. Forward Voltage

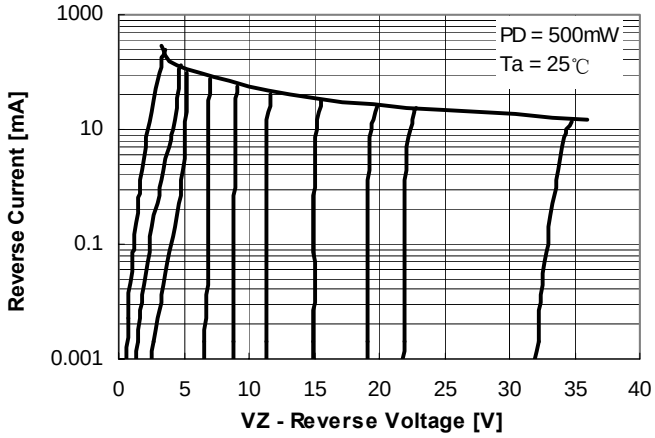


Figure 5. Reverse Current vs. Reverse Voltage