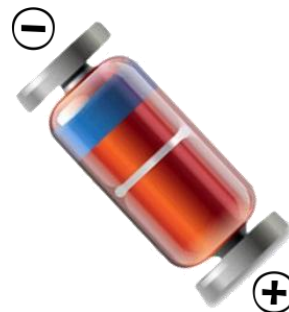


## ZENER DIODE

### FEATURES

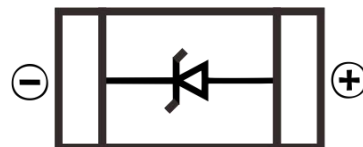
- Planar Die Construction
- Sealed Glass Case
- Smaller voltage tolerances and higher Zener voltages are upon request
- Surface Mount device



LL-34

### MECHANICAL DATA

- Case: LL-34
- Case Material: Glass
- Polarity: Color band denotes cathode end
- Approx. Weight: 0.05 grams



### MAXIMUM RATINGS $T_A = 25^\circ\text{C}$ unless otherwise noted

Parameter	Symbol	Value	Unit
Zener Current see Table "Characteristics"			
Maximum Forward Voltage at $I_F = 10 \text{ mA}$ .	$V_F$	0.9	V
Power Dissipation at Tflange = $50^\circ\text{C}$	$P_D$	500	mW
Power Dissipation at $T_a = 50^\circ\text{C}$	$P_D$	400 <sup>(1)</sup>	mW
Continuous Forward Current	$I_F$	250	mA
Thermal Resistance Junction to Ambient Air	$R_{\theta JA}$	0.38 <sup>(1)</sup>	$^\circ\text{C}/\text{mW}$
Thermal Resistance Junction to Lead	$R_{\theta JL}$	0.3	$^\circ\text{C}/\text{mW}$
Peak reverse power dissipation (non-repetitive) $t_p = 100\mu\text{s}$	$P_{ZSM}$	30 <sup>(2)</sup>	W
Junction temperature	$T_J$	-65 to + 200	$^\circ\text{C}$
Storage temperature range	$T_S$	-65 to + 200	$^\circ\text{C}$

Notes: (1) Mounted on ceramic substrate 10mm x 10mm x 0.6mm

(2)  $T_j = 150^\circ\text{C}$

## ZENER DIODE

### ELECTRICAL CHARACTERISTICS (Ta = 25 °C unless otherwise noted)

Type Number	V <sub>Z</sub> @ I <sub>ZT</sub> (Volts)		I <sub>ZT</sub> mA	Z <sub>ZT</sub> @ I <sub>ZT</sub> Ohms Max	I <sub>ZK</sub> mA	Z <sub>ZK</sub> @ I <sub>ZK</sub> Ohms	IR @ VR uA Max	VR V
	V <sub>Z</sub> Min (V)	V <sub>Z</sub> Max (V)						
BZV55B2V0	1.96	2.04	5	100	1.0	600	50	1.0
BZV55B2V2	2.16	2.24	5	100	1.0	600	50	1.0
BZV55B2V4	2.35	2.45	5	85	1.0	600	50	1.0
BZV55B2V7	2.65	2.75	5	85	1.0	600	10	1.0
BZV55B3V0	2.94	3.06	5	85	1.0	600	4	1.0
BZV55B3V3	3.23	3.37	5	85	1.0	600	2	1.0
BZV55B3V6	3.53	3.67	5	85	1.0	600	2	1.0
BZV55B3V9	3.82	3.98	5	85	1.0	600	2	1.0
BZV55B4V3	4.21	4.39	5	75	1.0	600	1	1.0
BZV55B4V7	4.61	4.79	5	60	1.0	600	0.5	1.0
BZV55B5V1	5.00	5.2	5	35	1.0	550	0.1	1.0
BZV55B5V6	5.49	5.71	5	25	1.0	450	0.1	1.0
BZV55B6V2	6.08	6.32	5	10	1.0	200	0.1	2.0
BZV55B6V8	6.66	6.94	5	8	1.0	150	0.1	3.0
BZV55B7V5	7.35	7.65	5	7	1.0	50	0.1	5.0
BZV55B8V2	8.04	8.36	5	7	1.0	50	0.1	6.2
BZV55B9V1	8.92	9.28	5	10	1.0	50	0.1	6.8
BZV55B10	9.80	10.2	5	15	1.0	70	0.1	7.5
BZV55B11	10.78	11.22	5	20	1.0	70	0.1	8.2
BZV55B12	11.76	12.24	5	20	1.0	90	0.1	9.1
BZV55B13	12.74	13.26	5	26	1.0	110	0.1	10
BZV55B15	14.70	15.30	5	30	1.0	110	0.1	11
BZV55B16	15.68	16.32	5	40	1.0	170	0.1	12
BZV55B18	17.64	18.36	5	50	1.0	170	0.1	13
BZV55B20	19.60	20.40	5	55	1.0	220	0.1	15
BZV55B22	21.56	22.44	5	55	1.0	220	0.1	16
BZV55B24	23.52	24.48	5	80	1.0	220	0.1	18
BZV55B27	26.46	27.54	2	80	1.0	220	0.1	20
BZV55B30	29.40	30.60	2	80	1.0	220	0.1	22
BZV55B33	32.34	33.66	2	80	1.0	220	0.1	24
BZV55B36	35.28	36.72	2	80	1.0	220	0.1	27
BZV55B39	38.22	39.78	2	90	0.5	500	0.1	28
BZV55B43	42.14	43.86	2	90	0.5	600	0.1	32
BZV55B47	46.06	47.94	2	110	0.5	700	0.1	35
BZV55B51	49.98	52.02	2	125	0.5	700	0.1	38
BZV55B56	54.88	57.12	2	135	0.5	1000	0.1	42
BZV55B62	60.76	63.24	2.5	150	0.5	1000	0.1	47
BZV55B68	66.64	69.36	2.5	160	0.5	1000	0.1	51
BZV55B75	73.50	76.50	2.5	170	0.5	1000	0.1	56

VF Forward Voltage = 1.0v Maximum @ IF=100mA for all types.

- Notes:
1. The type numbers listed have zener voltage min/max limits as shown.
  2. The zener impedance is derived from the 60-cycle ac voltage, which results when an ac current having an rms value equal to 10% of the dc zener current (I<sub>ZT</sub> or I<sub>ZK</sub>) is superimposed to I<sub>ZT</sub> or I<sub>ZK</sub>.

ZENER DIODE

Typical Characteristics

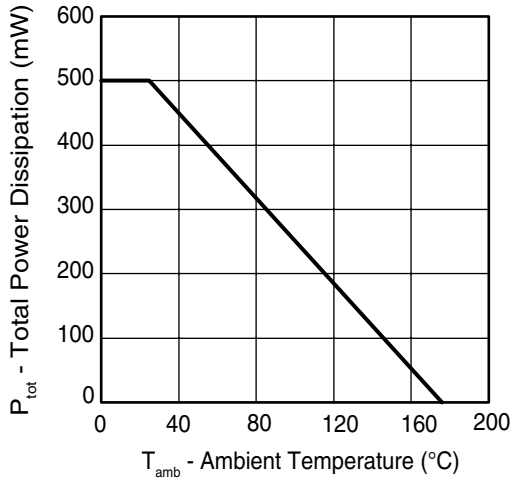


Figure 1. Total Power Dissipation vs. Ambient Temperature

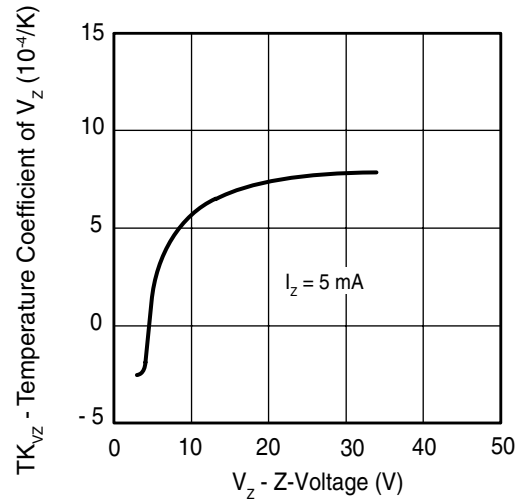


Figure 4. Temperature Coefficient of Vz vs. Z-Voltage

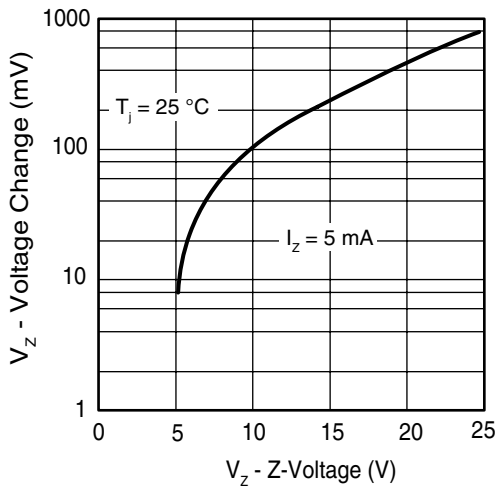


Figure 2. Typical Change of Working Voltage under Operating Conditions at  $T_{amb}=25^{\circ}C$

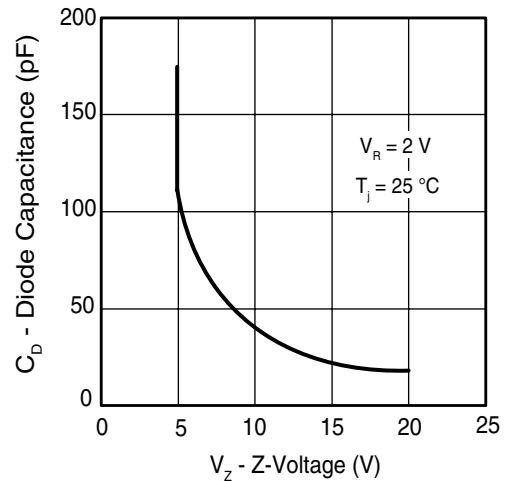


Figure 5. Diode Capacitance vs. Z-Voltage

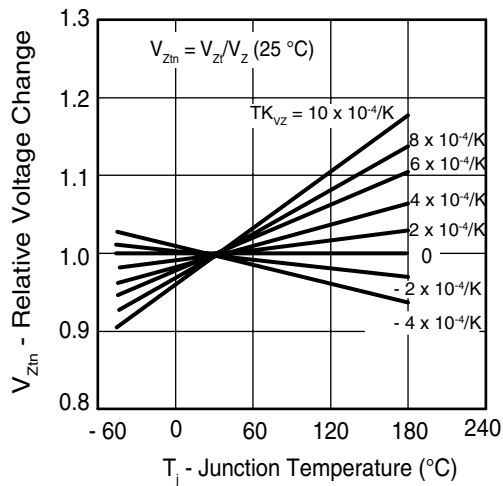


Figure 3. Typical Change of Working Voltage vs. Junction Temperature

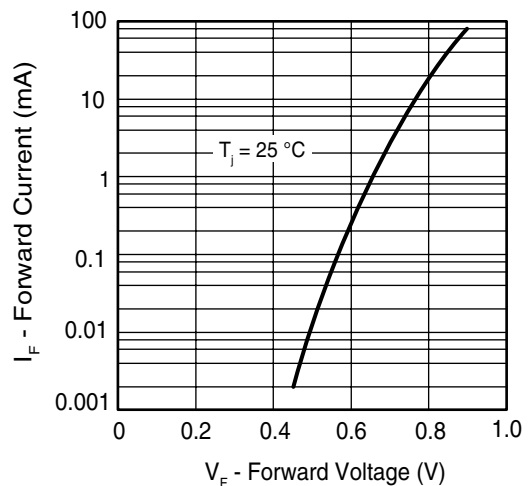


Figure 6. Forward Current vs. Forward Voltage

ZENER DIODE

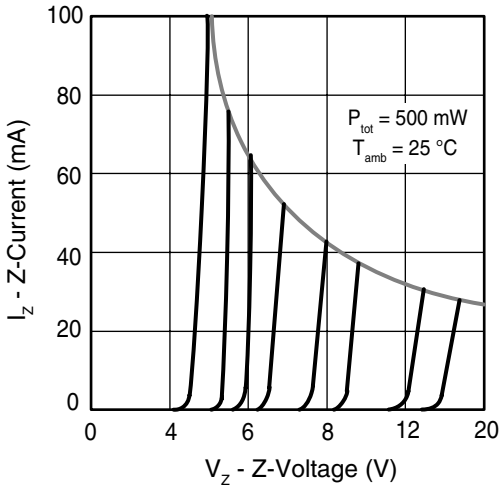


Figure 7. Z-Current vs. Z-Voltage

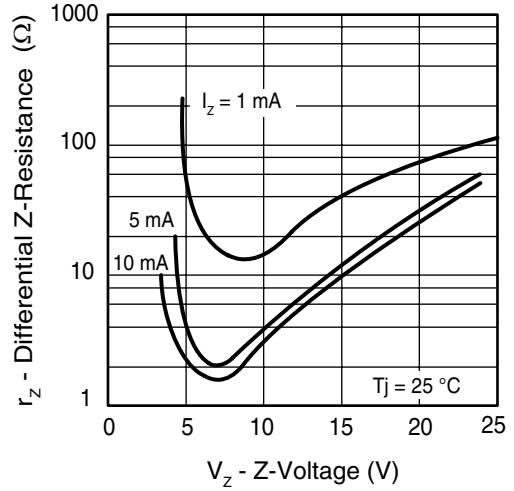


Figure 9. Differential Z-Resistance vs. Z-Voltage

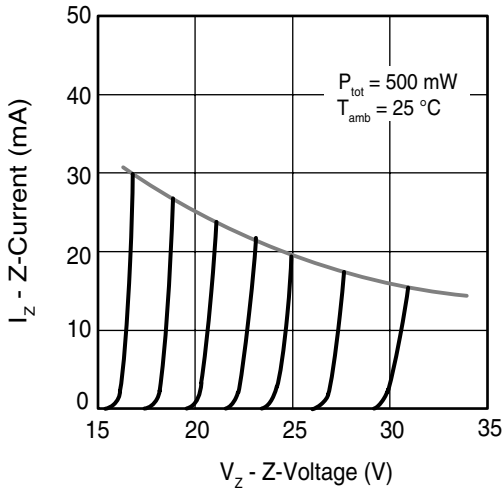


Figure 8. Z-Current vs. Z-Voltage

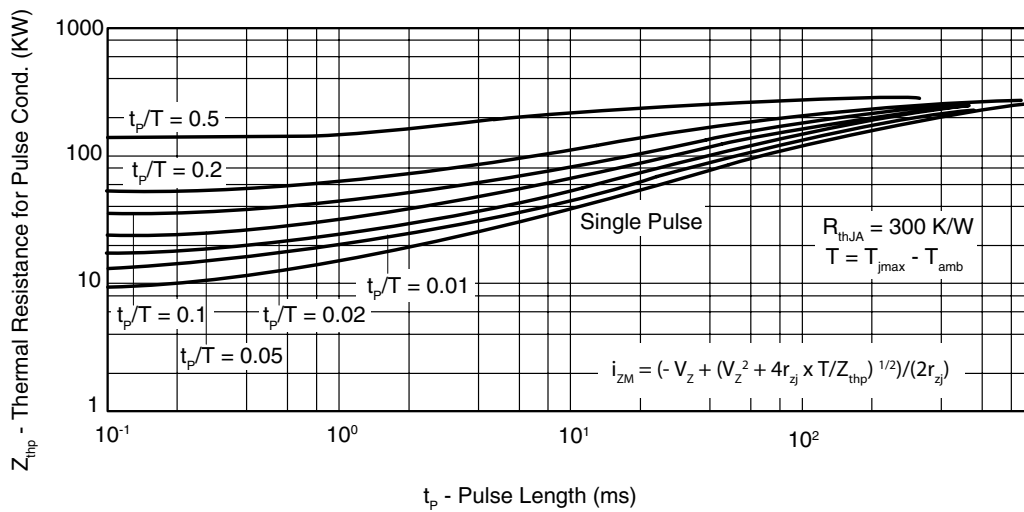
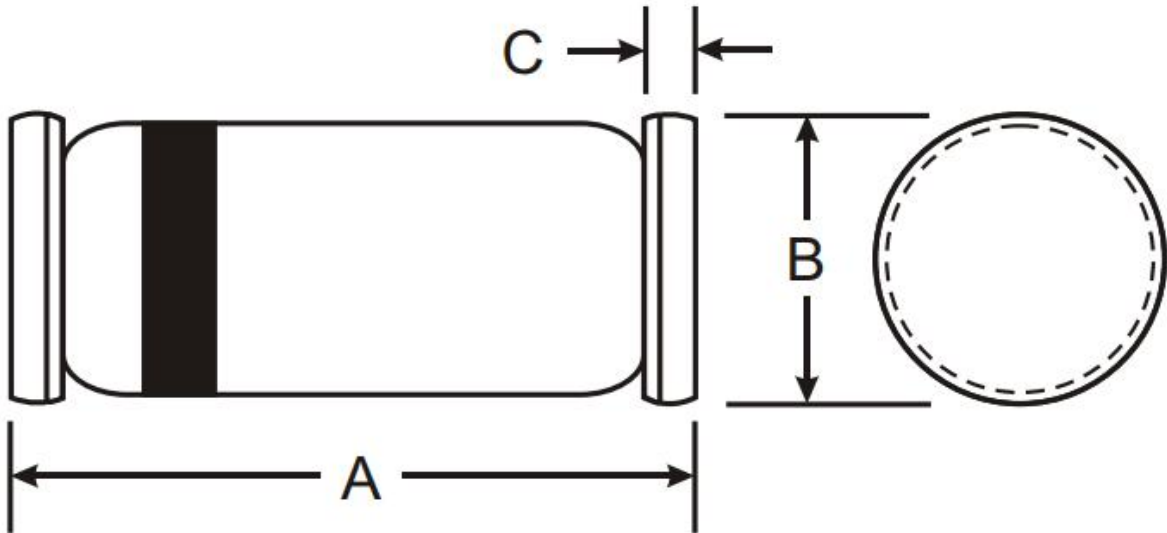


Figure 10. Thermal Response

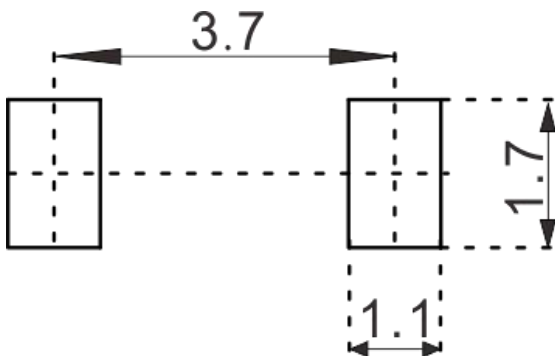
ZENER DIODE

**LL-34 Package Outline Dimensions**



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	3.300	3.700	0.130	0.147
B	1.300	1.600	0.051	0.063
C	0.280	0.500	0.011	0.020

**LL-34 Suggested Pad Layout**



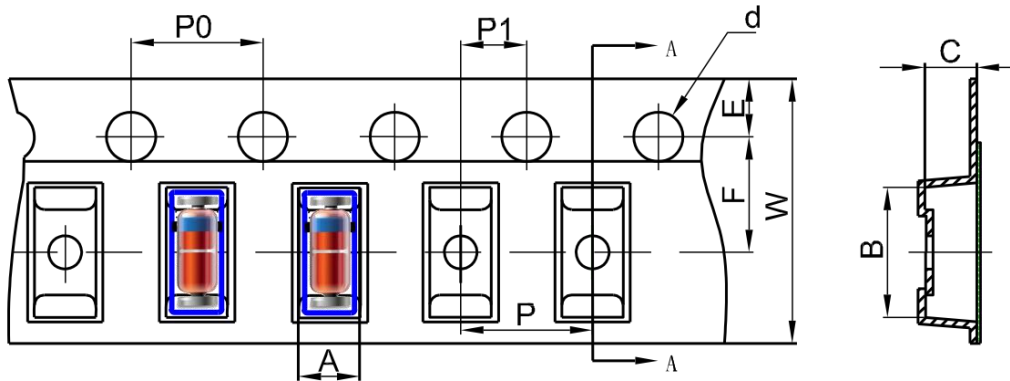
**Note:**

1. Controlling dimension: in millimeters
2. General tolerance:  $\pm 0.05\text{mm}$
3. The pad layout is for reference purposes only

## ZENER DIODE

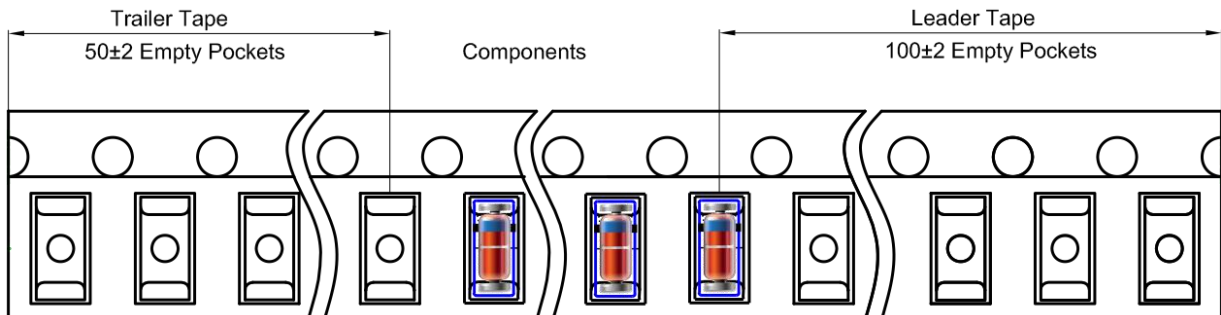
### LL-34 Tape and Reel

#### LL-34 Embossed Carrier Tape

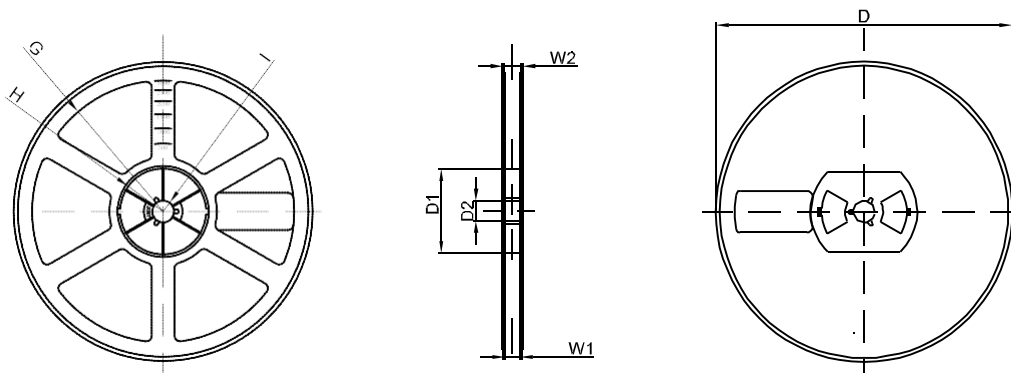


DIMENSIONS ARE IN MILLIMETER										
TYPE	A	B	C	d	E	F	P0	P	P1	W
LL-34	1.60	3.90	1.60	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00
TOLERANCE	±0.05	±0.05	±0.05	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1

#### LL-34 Tape Leader and Trailer



#### LL-34 Reel



DIMENSIONS ARE IN MILLIMETER								
REEL OPTION	D	D1	D2	G	H	I	W1	W2
7" DIA	Ø178	54.40	13.00	R78	R25.60	R6.50	9.50	12.30
TOLERANCE	±2	±1	±1	±1	±1	±1	±1	±1