



Micro Commercial Components

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# DL5221 THRU DL5267

## 500 mW Zener Diode 2.4 to 75 Volts

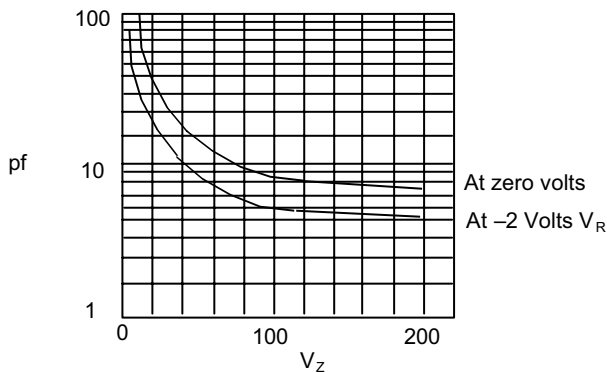
### Features

- Wide Voltage Range Available
- Glass Package
- High Temp Soldering: 260°C for 10 Seconds At Terminals
- Surface Mount Package
- Marking : Cathode band denotes polarity
- Lead Free Finish/RoHS Compliant(Note 1) ("P" Suffix designates Compliant. See ordering information)

### Maximum Ratings

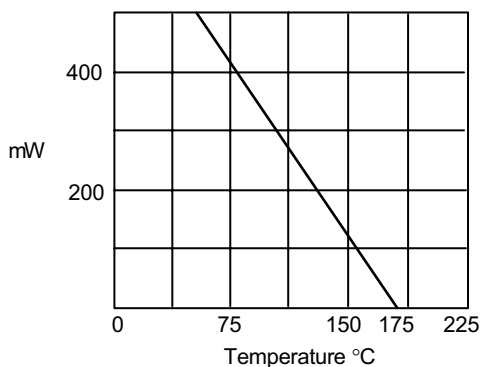
- Operating Temperature: -65°C to +175°C
- Storage Temperature: -65°C to +175°C
- 500 mWatt DC Power Dissipation
- Power Derating: 4.0mW/°C above 50°C
- Forward Voltage @ 200mA: 1.1 Volts

Figure 1 - Typical Capacitance



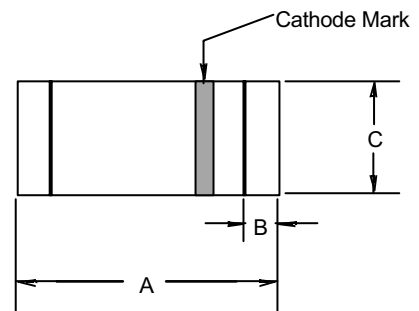
Typical Capacitance (pf) – versus – Zener voltage ( $V_Z$ )

Figure 2 - Derating Curve



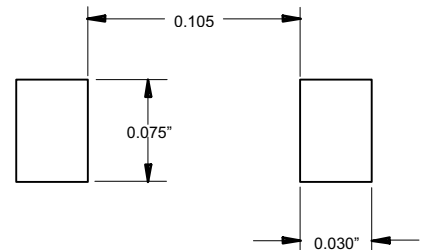
Power Dissipation (mW) - Versus - Ambient Temperature °C

### MINIMELF



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.130	.146	3.30	3.70	
B	.008	.016	.20	.40	
C	.055	.059	1.40	1.50	∅

### SUGGESTED SOLDER PAD LAYOUT



Note:1.Lead in Glass Exemption Applied, see EU Directive Annex 5.

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MCC PART NUMBER	NOMINAL ZENER VOLTAGE $V_Z$ @ $I_{ZT}$ VOLTS	TEST CURRENT $I_{ZT}$ mA	MAXIMUM ZENER IMPEDANCE 'B' SUFFIX ONLY		MAXIMUM REVERSE LEAKAGE CURRENT		MAX. ZENER VOLTAGE TEMP COEFFICIENT 'B' SUFFIX ONLY % / °C
			$Z_{ZT}$ @ $I_{ZT}$	$Z_{ZK}$ @ $I_{ZK} = 0.25mA$	$I_R$ @ $V_R$	$V_R$	
			OHMS	OHMS	$\mu A$	VOLTS	
DL5221	2.4	20	30	1200	100	1.0	-0.085
DL5222	2.5	20	30	1250	100	1.0	-0.085
DL5223	2.7	20	30	1300	75	1.0	-0.080
DL5224	2.8	20	30	1400	75	1.0	-0.080
DL5225	3.0	20	29	1600	50	1.0	-0.075
DL5226	3.3	20	28	1600	25	1.0	-0.070
DL5227	3.6	20	24	1700	15	1.0	-0.065
DL5228	3.9	20	23	1900	10	1.0	-0.060
DL5229	4.3	20	22	2000	5.0	1.0	$\pm 0.055$
DL5230	4.7	20	19	1900	5.0	2.0	$\pm 0.030$
DL5231	5.1	20	17	1600	5.0	2.0	$\pm 0.030$
DL5232	5.6	20	11	1600	5.0	3.0	+0.038
DL5233	6.0	20	7.0	1600	5.0	3.5	+0.038
DL5234	6.2	20	7.0	1000	5.0	4.0	+0.045
DL5235	6.8	20	5.0	750	3.0	5.0	+0.050
DL5236	7.5	20	6.0	500	3.0	6.0	+0.058
DL5237	8.2	20	8.0	500	3.0	6.5	+0.062
DL5238	8.7	20	8.0	600	3.0	6.5	+0.065
DL5239	9.1	20	10	600	3.0	7.0	+0.068
DL5240	10	20	17	600	3.0	8.0	+0.075
DL5241	11	20	22	600	2.0	8.4	+0.076
DL5242	12	20	30	600	1.0	9.1	+0.077
DL5243	13	9.5	13	600	0.5	9.9	+0.079
DL5244	14	9.0	15	600	0.1	10	+0.082
DL5245	15	8.5	16	600	0.1	11	+0.082
DL5246	16	7.8	17	600	0.1	12	+0.083
DL5247	17	7.4	19	600	0.1	13	+0.084
DL5248	18	7.0	21	600	0.1	14	+0.085
DL5249	19	6.6	23	600	0.1	14	+0.086
DL5250	20	6.2	25	600	0.1	15	+0.086
DL5251	22	5.6	29	600	0.1	17	+0.087
DL5252	24	5.2	33	600	0.1	18	+0.088
DL5253	25	5.0	35	600	0.1	19	+0.089
DL5254	27	4.6	41	600	0.1	21	+0.090
DL5255	28	4.5	44	600	0.1	21	+0.091
DL5256	30	4.2	49	600	0.1	23	+0.091
DL5257	33	3.8	58	700	0.1	25	+0.092
DL5258	36	3.4	70	700	0.1	27	+0.093
DL5259	39	3.2	80	800	0.1	30	+0.094
DL5260	43	3.0	93	900	0.1	33	+0.095
DL5261	47	2.7	105	1000	0.1	36	+0.095
DL5262	51	2.5	125	1100	0.1	39	+0.096
DL5263	56	2.2	150	1300	0.1	43	+0.096
DL5264	60	2.1	170	1400	0.1	46	+0.097
DL5265	62	2.0	185	1400	0.1	47	+0.097
DL5266	68	1.8	230	1600	0.1	52	+0.097
DL5267	75	1.7	270	1700	0.1	56	+0.098

NOTE 1: Table as shown lists type numbers, which indicate a tolerance of  $\pm 20\%$  with guaranteed limits on only  $V_Z$ ,  $I_R$ , and  $V_F$ . Devices with guaranteed limits on all six parameters are indicated by suffix "A" for  $\pm 10\%$ , "B" for  $\pm 5\%$ , "C" for  $\pm 2\%$  tolerance

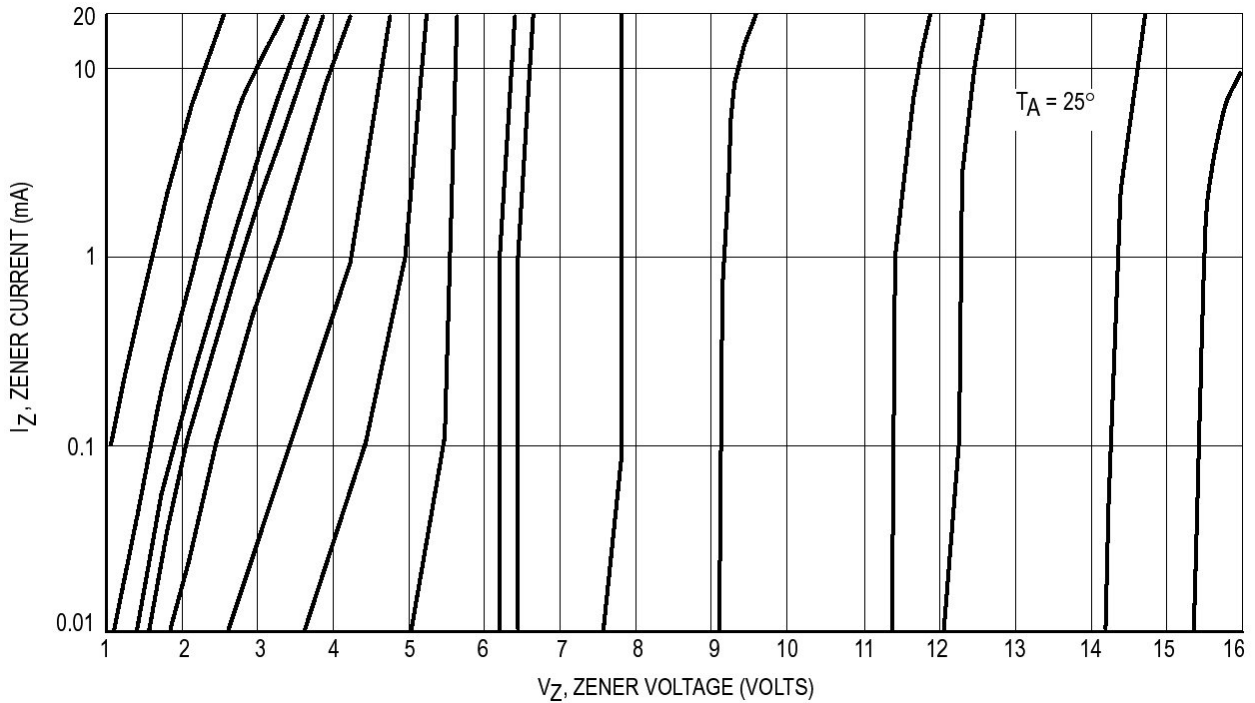
NOTE 2: The electrical characteristics are measured after allowing the device to stabilize for 20 seconds.

NOTE 3: Temperature coefficient ( $\alpha_{VZ}$ ). Test conditions for temperature coefficient are as follows:

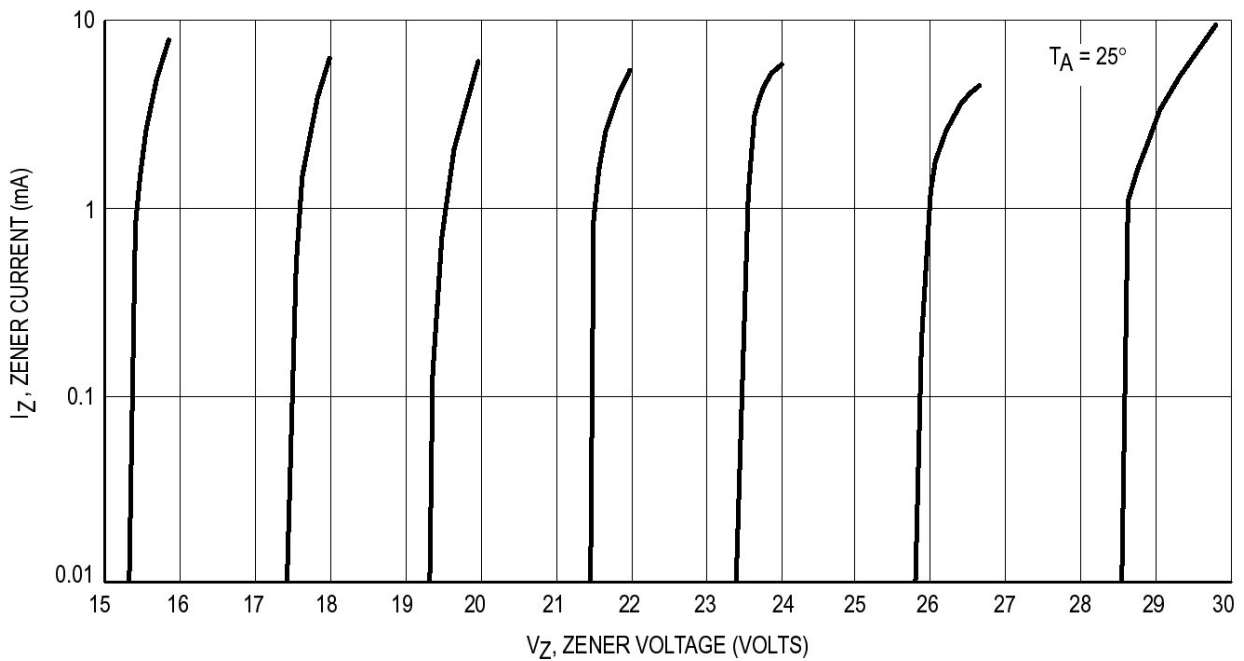
- a.  $I_{ZT} = 7.5mA$ ,  $T_1 = 25^\circ C$ ,  $T_2 = 125^\circ C$  (DL5221 thru DL5242)
- b.  $I_{ZT} = \text{Rated } I_{ZT}$ ,  $T_1 = 25^\circ C$ ,  $T_2 = 125^\circ C$  (DL5243 thru DL5267)

Device to be temperature stabilized with current applied prior to reading breakdown voltage at the specified ambient temperature.

**Characteristics** ( $T_j=25^\circ\text{C}$  unless otherwise specified)



**Figure 1. Zener Voltage versus Zener Current –  $V_Z=1$  thru 16 Volts**



**Figure 2. Zener Voltage versus Zener Current –  $V_Z=15$  thru 30 Volts**

# DL5221 thru DL5267

## Characteristics (T<sub>j</sub>=25°C unless otherwise specified)

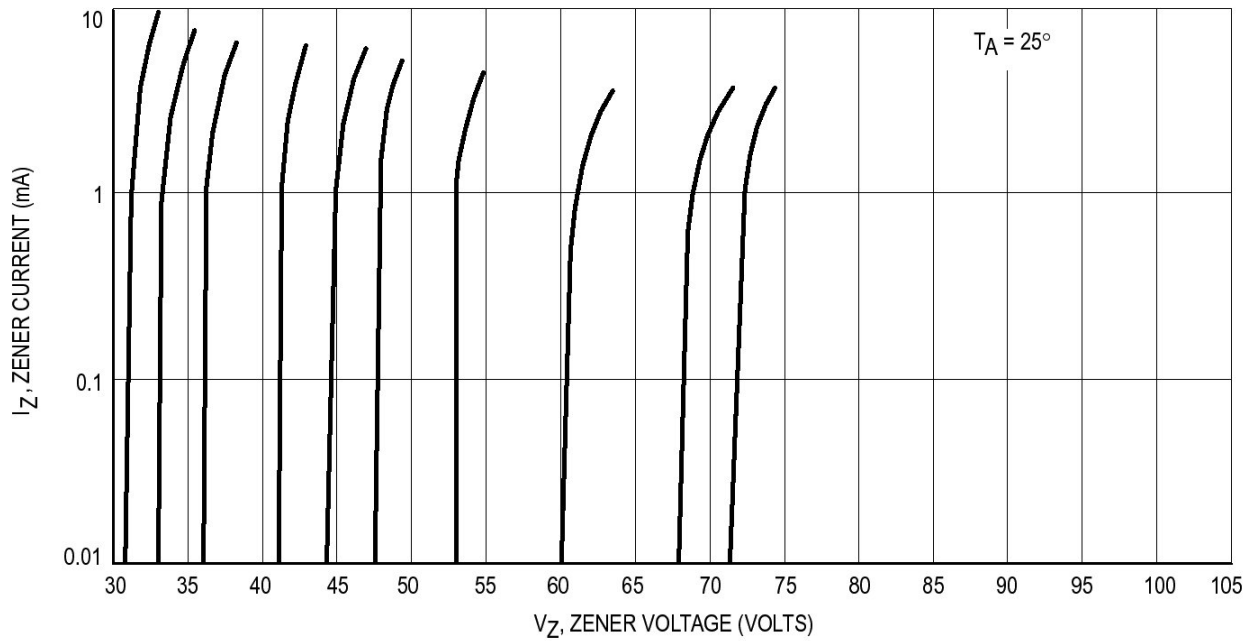


Figure 3. Zener Voltage versus Zener Current – V<sub>Z</sub>=30 thru 75 Volts

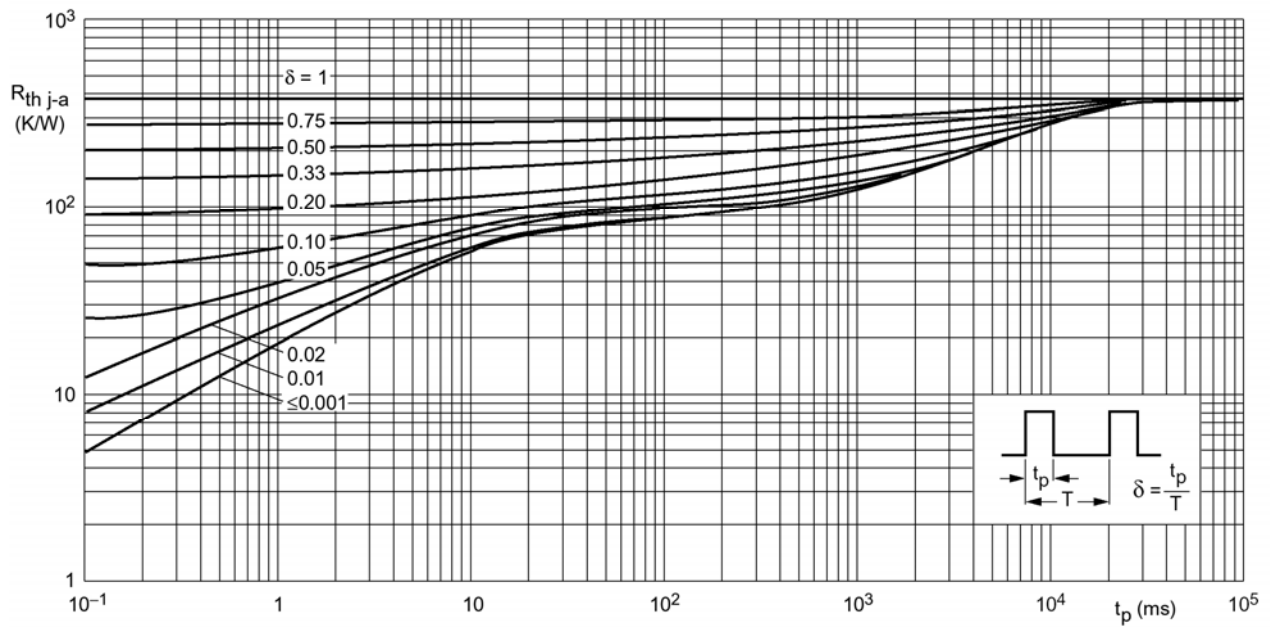


Figure 4. Thermal resistance from junction to ambient as a function of pulse duration



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## Ordering Information

Device	Packing
(Part Number)-TP	Tape&Reel;2.5Kpcs/Reel

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