



Micro Commercial Components

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# 1N5221 THRU 1N5276

## 500 mW Zener Diode 2.4 to 150 Volts

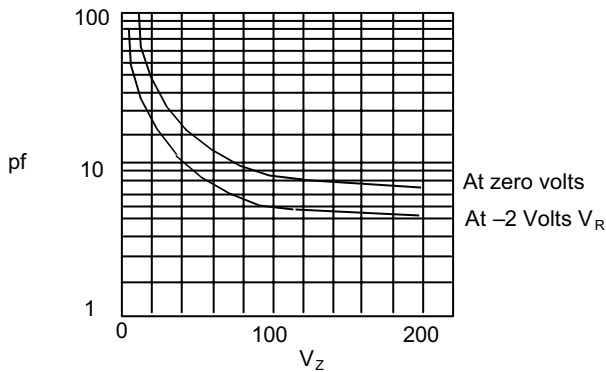
### Features

- Wide Voltage Range Available
- Glass Package
- High Temp Soldering: 260°C for 10 Seconds At Terminals
- Marking : Cathode band and type number
- Lead Free Finish/Rohs Compliant (Note1) ("P" Suffix designates Compliant. See ordering information)
- Moisture Sensitivity: Level 1 per J-STD-020C

### Maximum Ratings

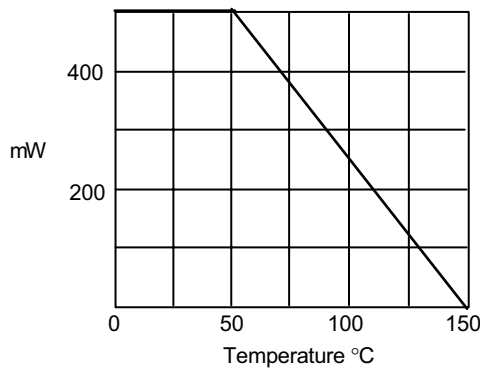
- Operating Temperature: -55°C to +150°C
- Storage Temperature: -55°C to +150°C
- 500 mWatt DC Power Dissipation
- Power Derating: 4.0mW/°C above 50°C
- Forward Voltage @ 200mA: 1.1 Volts

Figure 1 - Typical Capacitance



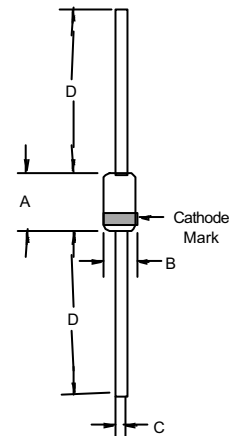
Typical Capacitance (pf) – versus – Zener voltage ( $V_z$ )

Figure 2 - Derating Curve



Power Dissipation (mW) - Versus - Temperature °C

### DO-35



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	---	.166	---	4.2	
B	---	.079	---	2.00	
C	---	.020	---	.52	
D	1.000	---	25.40	---	

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

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## ELECTRICAL CHARACTERISTICS @25°C

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 $I_R$ @ $V_R$		MAX. ZENER VOLTAGE TEMP COEFFICIENT 'B' SUFFIX ONLY % / °C
			$Z_{ZT}$ @ $I_{ZT}$ OHMS	$Z_{ZK}$ @ $I_{ZK} = 0.25\text{mA}$ OHMS	$\mu\text{A}$	VOLTS	
1N5221	2.4	20	30	1200	100	1.0	-0.085
1N5222	2.5	20	30	1250	100	1.0	-0.085
1N5223	2.7	20	30	1300	75	1.0	-0.080
1N5224	2.8	20	30	1400	75	1.0	-0.080
1N5225	3.0	20	29	1600	50	1.0	-0.075
1N5226	3.3	20	28	1600	25	1.0	-0.070
1N5227	3.6	20	24	1700	15	1.0	-0.065
1N5228	3.9	20	23	1900	10	1.0	-0.060
1N5229	4.3	20	22	2000	5.0	1.0	±0.055
1N5230	4.7	20	19	1900	5.0	2.0	±0.030
1N5231	5.1	20	17	1600	5.0	2.0	±0.030
1N5232	5.6	20	11	1600	5.0	3.0	+0.038
1N5233	6.0	20	7.0	1600	5.0	3.5	+0.038
1N5234	6.2	20	7.0	1000	5.0	4.0	+0.045
1N5235	6.8	20	5.0	750	3.0	5.0	+0.050
1N5236	7.5	20	6.0	500	3.0	6.0	+0.058
1N5237	8.2	20	8.0	500	3.0	6.5	+0.062
1N5238	8.7	20	8.0	600	3.0	6.5	+0.065
1N5239	9.1	20	10	600	3.0	7.0	+0.068
1N5240	10	20	17	600	3.0	8.0	+0.075
1N5241	11	20	22	600	2.0	8.4	+0.076
1N5242	12	20	30	600	1.0	9.1	+0.077
1N5243	13	9.5	13	600	0.5	9.9	+0.079
1N5244	14	9.0	15	600	0.1	10	+0.082
1N5245	15	8.5	16	600	0.1	11	+0.082
1N5246	16	7.8	17	600	0.1	12	+0.083
1N5247	17	7.4	19	600	0.1	13	+0.084
1N5248	18	7.0	21	600	0.1	14	+0.085
1N5249	19	6.6	23	600	0.1	14	+0.086
1N5250	20	6.2	25	600	0.1	15	+0.086
1N5251	22	5.6	29	600	0.1	17	+0.087
1N5252	24	5.2	33	600	0.1	18	+0.088
1N5253	25	5.0	35	600	0.1	19	+0.089
1N5254	27	4.6	41	600	0.1	21	+0.090
1N5255	28	4.5	44	600	0.1	21	+0.091
1N5256	30	4.2	49	600	0.1	23	+0.091
1N5257	33	3.8	58	700	0.1	25	+0.092
1N5258	36	3.4	70	700	0.1	27	+0.093
1N5259	39	3.2	80	800	0.1	30	+0.094
1N5260	43	3.0	93	900	0.1	33	+0.095
1N5261	47	2.7	105	1000	0.1	36	+0.095
1N5262	51	2.5	125	1100	0.1	39	+0.096
1N5263	56	2.2	150	1300	0.1	43	+0.096
1N5264	60	2.1	170	1400	0.1	46	+0.097
1N5265	62	2.0	185	1400	0.1	47	+0.097
1N5266	68	1.8	230	1600	0.1	52	+0.097
1N5267	75	1.7	270	1700	0.1	56	+0.098
1N5268	82	1.5	330	2000	0.1	62	+0.098
1N5269	87	1.4	370	2200	0.1	68	+0.099
1N5270	91	1.4	400	2300	0.1	69	+0.099
1N5271	100	1.3	500	2600	0.1	76	+0.110
1N5272	110	1.1	750	3000	0.1	84	+0.110
1N5273	120	1.0	900	4000	0.1	91	+0.110
1N5274	130	0.95	1100	4500	0.1	99	+0.110
1N5275	140	0.90	1300	4500	0.1	106	+0.110
1N5276	150	0.85	1500	5000	0.1	114	+0.110

NOTE 1: Table as shown lists type numbers, which indicate a tolerance of ±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 ±10%, "B" for ±5%, "C" for ±2%, and "D" for ±1% 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.  $I_{ZT} = 7.5\text{mA}$ ,  $T_1 = 25^\circ\text{C}$ ,  $T_2 = 125^\circ\text{C}$  (1N5221 thru 1N5242)

b.  $I_{ZT} = \text{Rated } I_{ZT}$ ,  $T_1 = 25^\circ\text{C}$ ,  $T_2 = 125^\circ\text{C}$  (1N5243 thru 1N5276)

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

# 1N5221 thru 1N5276

Figure 1  
Zener Voltage versus Zener Current –  $V_z = 1$  thru 16 Volts

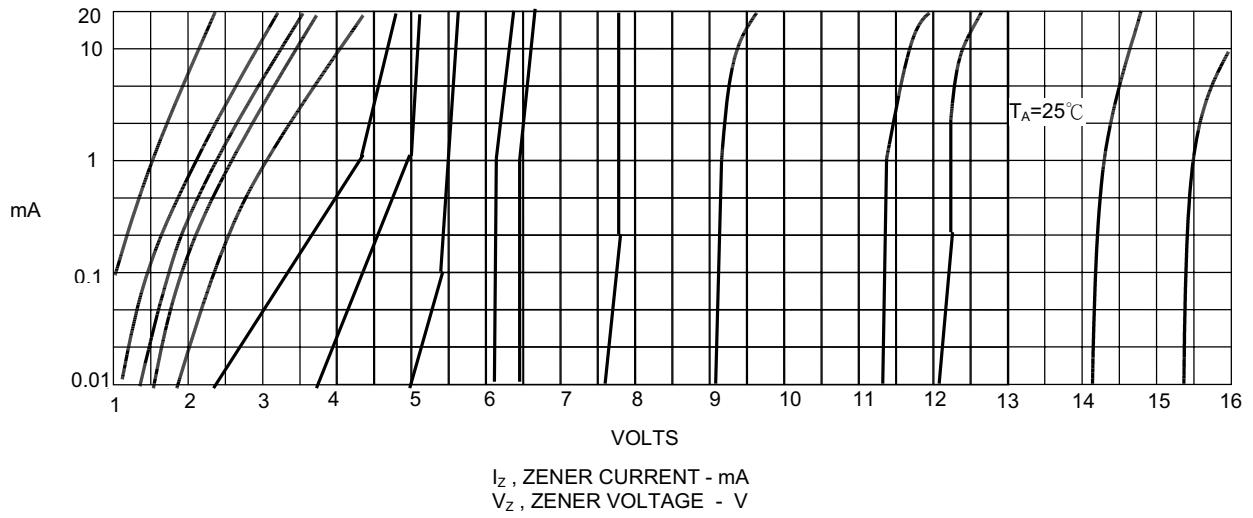
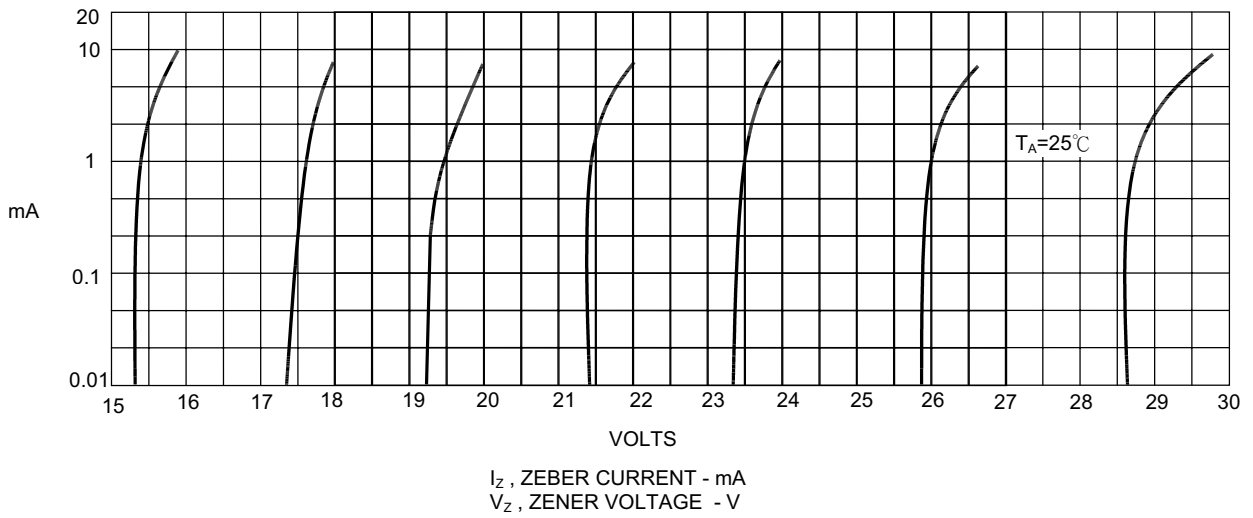


Figure 2  
Zener Voltage versus Zener Current –  $V_z = 15$  thru 30 Volts



# 1N5221 thru 1N5276

Figure 3  
Zener Voltage versus Zener Current –  $V_z = 30$  thru 75 Volts

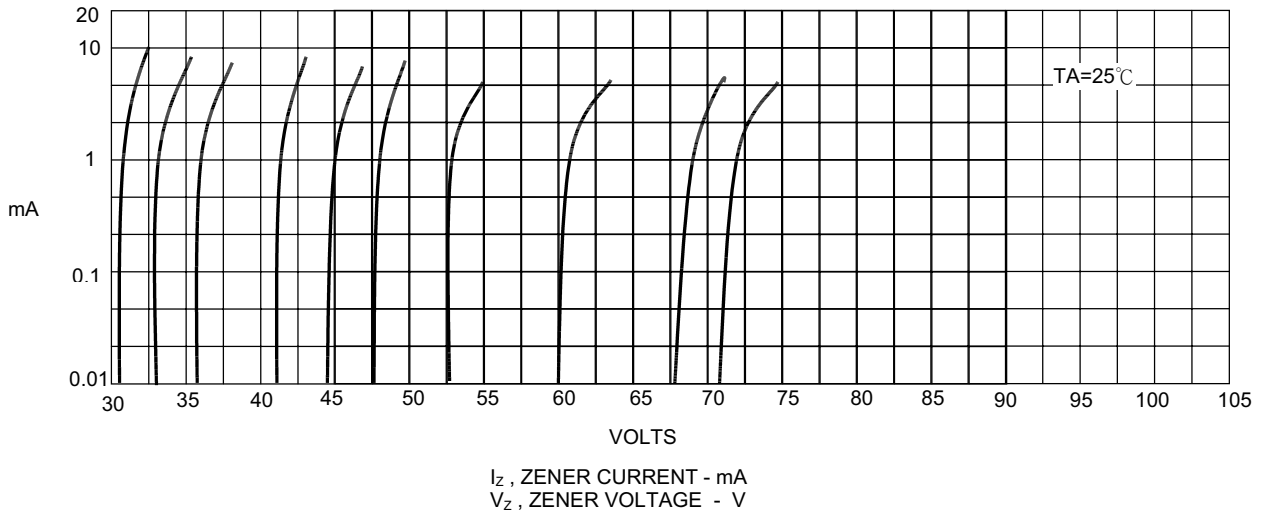
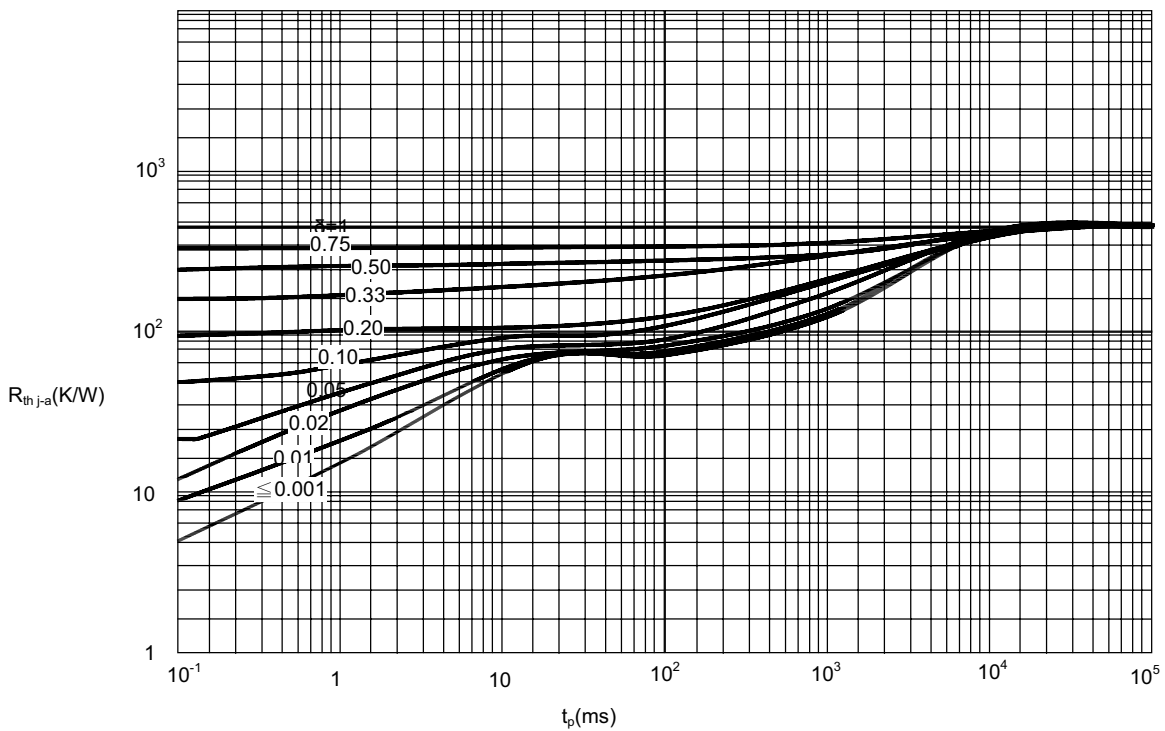


Figure 4  
Thermal resistance from junction to ambient as a function of pulse duration





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## Ordering Information

Device	Packing
(Part Number)-TP	Tape&Reel; 10Kpcs/Reel
(Part Number)-AP	Ammo Packing;5Kpcs/AmmoBox
(Part Number)-BP	Bulk;500pcs/Bag

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