

Small Signal Product

## 0.5W Hermetically Sealed Glass Zener Diodes

### FEATURES

- Zener voltage range 2.4 to 56 volts
- DO-35 package
- Through-hole device type mounting
- Hermetically sealed glass
- Compression bonded construction
- All external surfaces are corrosion resistant and leads are readily solderable
- ROHS compliant
- Solder hot dip Tin(Sn) lead finish
- Cathode indicated by polarity band
- Packing code with suffix "G" means Halogen-free



**DO-35**



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T <sub>A</sub> =25°C unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNITS
Power dissipation	P <sub>D</sub>	500	mW
Forward Voltage @I <sub>F</sub> =200mA	V <sub>F</sub>	1.1	V
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	100	°C

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ORDERING INFORMATION					
PART NO.	PART NO. SUFFIX (Note 2)	PACKING CODE	PACKING CODE SUFFIX	PACKAGE	PACKING
1N52xxB (Note 1)	-xx	R0	G	DO-35	10K / 14" Reel
		A0			5K / Box (Ammo)

Note 1: "xx" defines voltage from 2.4V (1N5221B) to 56V (1N5263B)

Note 2: Part No. Suffix „-xx “ would be used for special requirement

EXAMPLE					
PREFERRED PART NO.	PART NO.	PART NO. SUFFIX	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
1N5221B R0G	1N5221B		R0	G	Multiple manufacture source Halogen free
1N5221B-L0 R0G	1N5221B	L0	R0	G	Define manufacture source Halogen free
1N5221B-B0 R0G	1N5221B	B0	R0	G	Define manufacture source Halogen free

RATINGS AND CHARACTERISTICS CURVES

(T<sub>A</sub>=25°C unless otherwise noted)

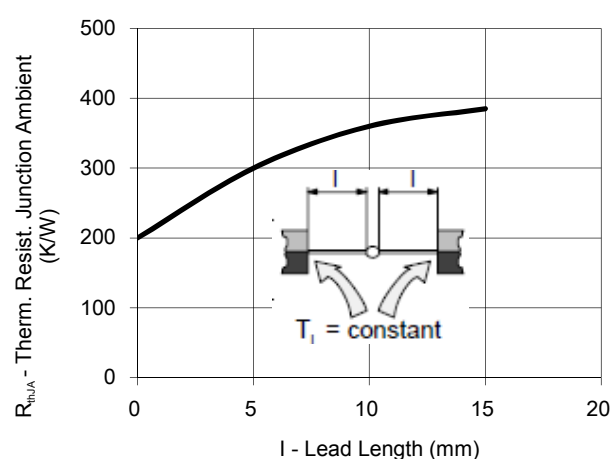


Fig. 1 Thermal Resistance VS. Lead Length

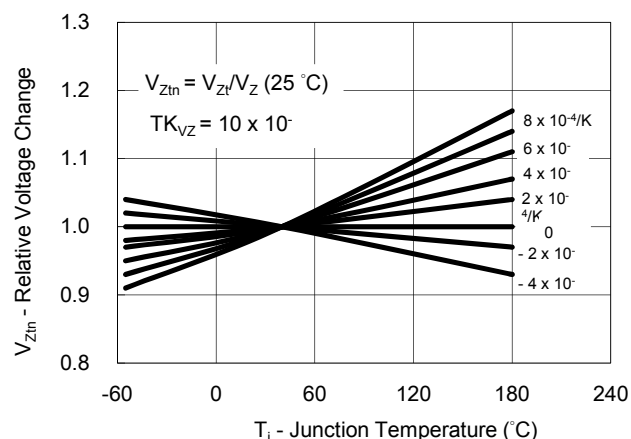


Fig. 3 Typical Change of Working Voltage VS. Junction

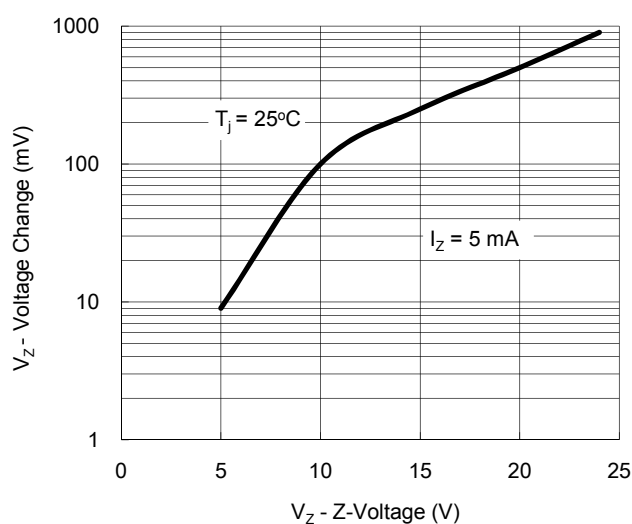


Fig. 2 Typical Change of Working Voltage under Operating Conditions at T<sub>amb</sub> = 25 °C

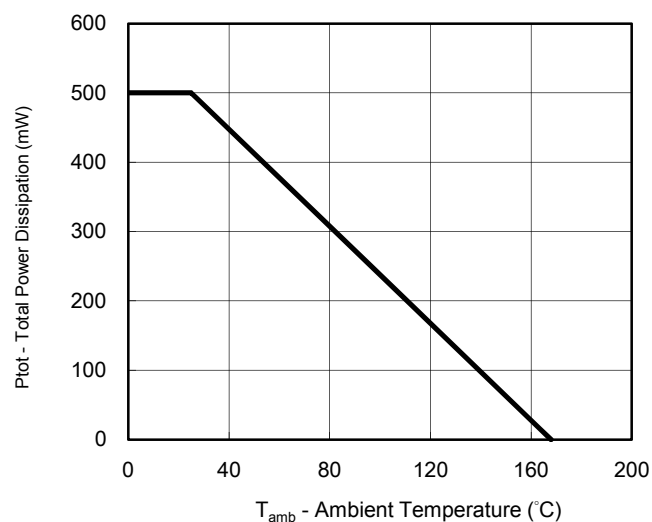


Fig.4 Total Power Dissipation VS. Ambient Temperature

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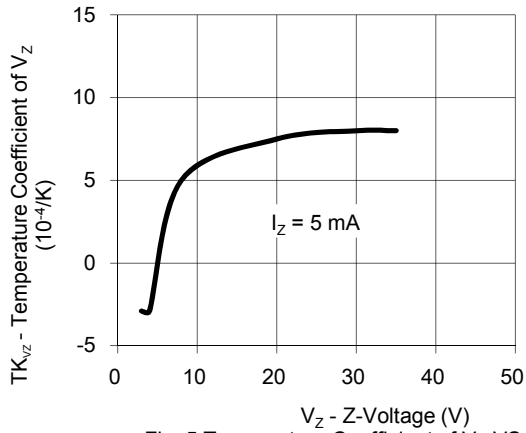


Fig. 5 Temperature Coefficient of Vz VS. Z-Voltage

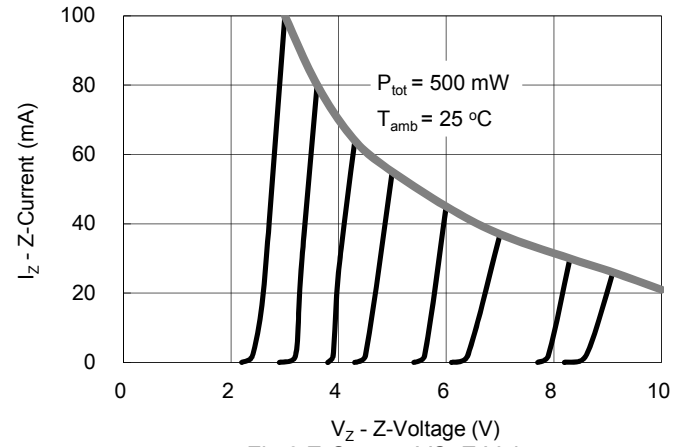


Fig.8 Z-Current VS. Z-Voltage

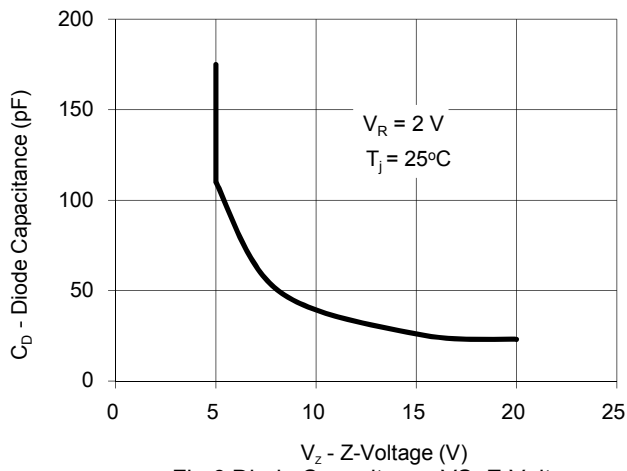


Fig.6 Diode Capacitance VS. Z-Voltage

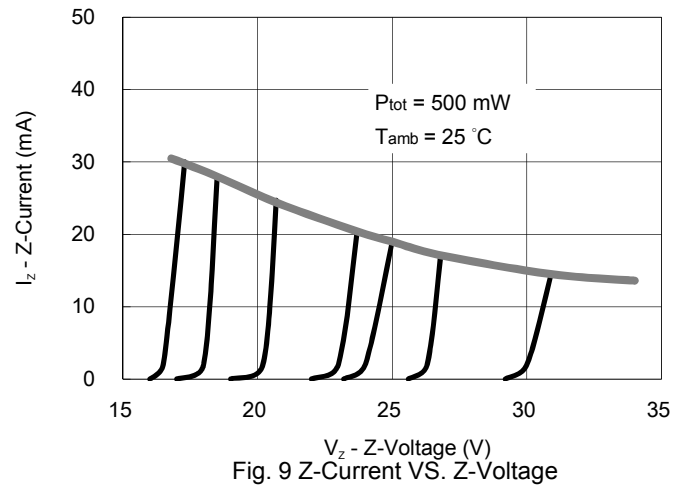


Fig. 9 Z-Current VS. Z-Voltage

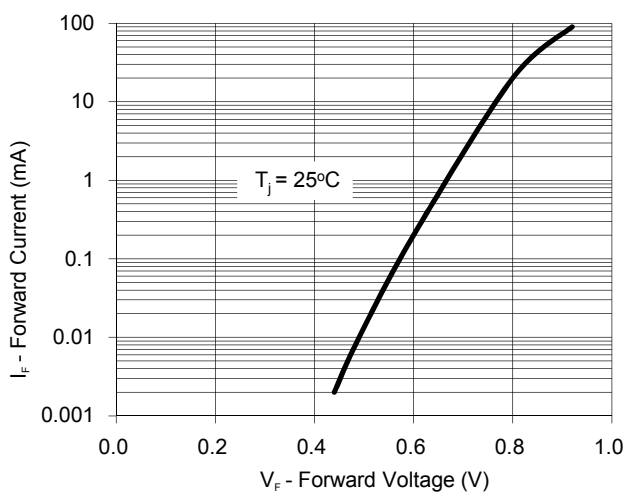


Figure 7. Forward Current VS. Forward Voltage

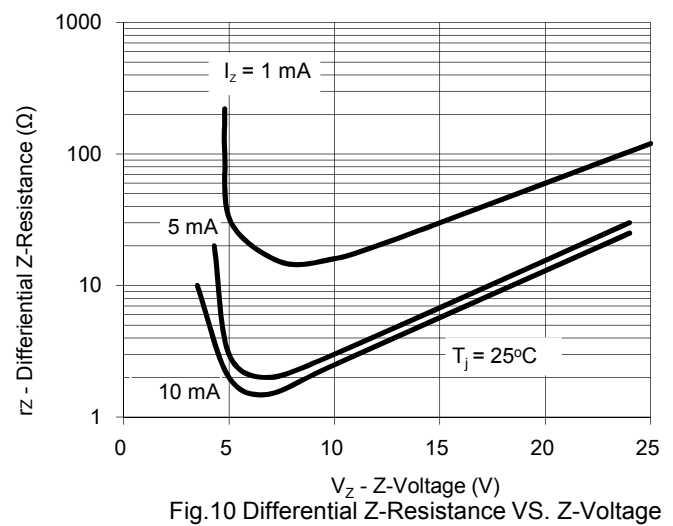
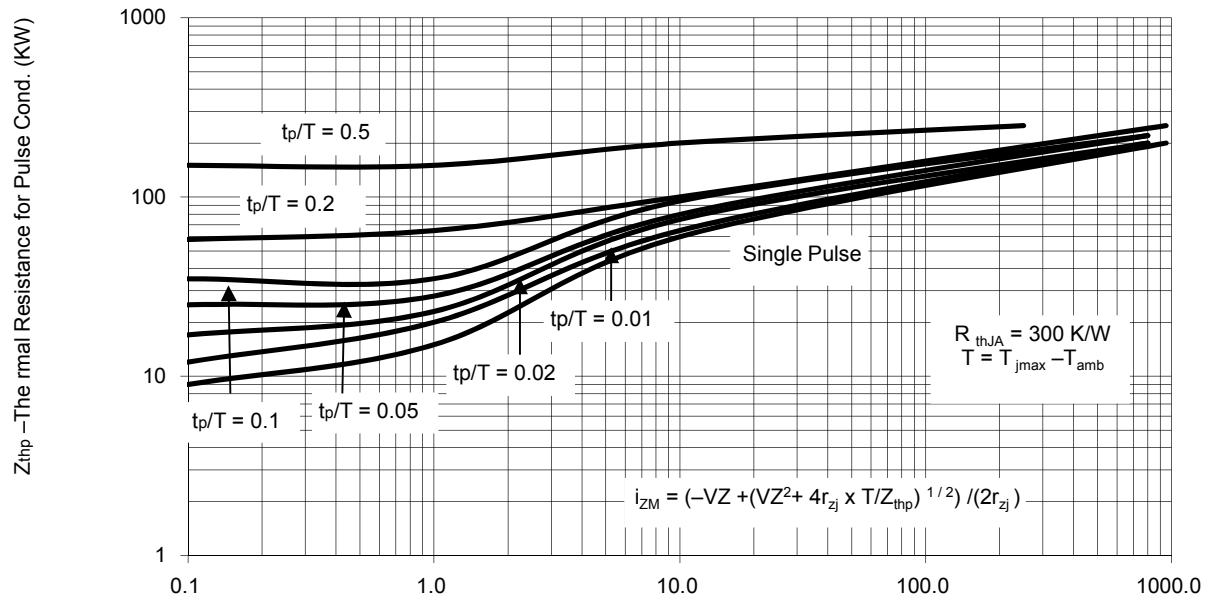


Fig.10 Differential Z-Resistance VS. Z-Voltage



$t_p$  – Pulse Length (ms)  
Fig. 11 Thermal Response

## Small Signal Product

**Electrical Characteristics (Ratings at  $T_A=25^\circ\text{C}$  ambient temperature unless otherwise specified)**

Device	V <sub>Z</sub> @ I <sub>ZT</sub> Voltage Nominal	Current I <sub>ZT</sub> (mA)	Z <sub>ZT</sub> @ I <sub>ZT</sub> $\Omega$ Max.	Z <sub>ZK</sub> @I <sub>ZK</sub> =0.25mA $\Omega$ Max.	I <sub>R</sub> @ V <sub>R</sub> $\mu\text{A}$ Max.	V <sub>R</sub> (Volts)
1N5221B	2.4	20	30	1200	100	1.0
1N5222B	2.5	20	30	1250	100	1.0
1N5223B	2.7	20	30	1300	75	1.0
1N5224B	2.8	20	30	1400	75	1.0
1N5225B	3.0	20	29	1600	50.0	1.0
1N5226B	3.3	20	28	1600	25.0	1.0
1N5227B	3.6	20	24	1700	15.0	1.0
1N5228B	3.9	20	23	1900	10.0	1.0
1N5229B	4.3	20	22	2000	5.0	1.0
1N5230B	4.7	20	19	1900	5.0	2.0
1N5231B	5.1	20	17	1600	5.0	2.0
1N5232B	5.6	20	11	1600	5.0	3.0
1N5233B	6.0	20	7	1600	5.0	3.5
1N5234B	6.2	20	7	1000	5.0	4.0
1N5235B	6.8	20	5	750	3.0	5.0
1N5236B	7.5	20	6	500	3.0	6.0
1N5237B	8.2	20	8	500	3.0	6.5
1N5238B	8.7	20	8	600	3.0	6.5
1N5239B	9.1	20	10	600	3.0	7.0
1N5240B	10	20	17	600	2.0	8
1N5241B	11	20	22	600	1.0	8.4
1N5242B	12	20	30	600	0.5	9
1N5243B	13	9.5	13	600	0.1	10
1N5244B	14	9.0	15	600	0.1	10
1N5245B	15	8.5	16	600	0.1	11
1N5246B	16	7.8	17	600	0.1	12
1N5247B	17	7.4	19	600	0.1	13
1N5248B	18	7.0	21	600	0.1	14
1N5249B	19	6.6	23	600	0.1	14
1N5250B	20	6.2	25	600	0.1	15
1N5251B	22	5.6	29	600	0.1	17
1N5252B	24	5.2	33	600	0.1	18
1N5253B	25	5.0	35	600	0.1	18
1N5254B	27	4.6	41	600	0.1	21
1N5255B	28	4.5	44	600	0.1	21
1N5256B	30	4.2	49	600	0.1	23

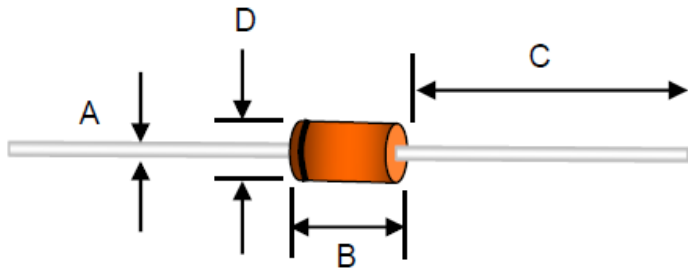
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Device	V <sub>z</sub> @ I <sub>zt</sub> Voltage Nominal	Current I <sub>ZT</sub> (mA)	Z <sub>ZT</sub> @ I <sub>ZT</sub> Ω Max.	Z <sub>ZK</sub> @I <sub>ZK</sub> =0.25mA Ω Max.	I <sub>R</sub> @ V <sub>R</sub> μA Max.	V <sub>R</sub> (Volts)
1N5257B	33	3.8	58	700	0.1	25
1N5258B	36	3.4	70	700	0.1	27
1N5259B	39	3.2	80	800	0.1	30
1N5260B	43	3.0	93	900	0.1	33
1N5261B	47	2.7	105	1000	0.1	36
1N5262B	51	2.5	125	1100	0.1	39
1N5263B	56	2.2	150	1300	0.1	43

- Notes :
1. The type numbers listed have zener voltage as shown and have a standard tolerance on the nominal zener voltage of ±5%. Device of ±2% is indicated by a "C" instead of a "B".
  2. Nominal zener voltages between the voltages shown and tighter voltage, for detailed information on price, availability and delivery.
  3. The zener voltage(V<sub>z</sub>) is tested under pulse condition. The measured V<sub>z</sub> is guaranteed to be within specification with device junction in thermal equilibrium.
  4. 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>) is superimposed to I<sub>ZT</sub>.

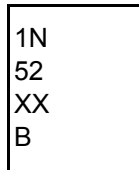
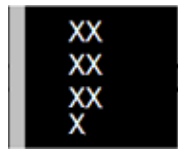
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PACKAGE OUTLINE DIMENSIONS  
**DO-35**



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	0.34	0.60	0.013	0.024
B	2.90	5.08	0.114	0.200
C	25.40	38.10	1.000	1.500
D	1.30	2.28	0.051	0.090

MARKING DIAGRAM



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