

## 500mW, 5% Tolerance Zener Diodes

### FEATURES

- Wide Zener voltage range selection: 2.4V to 56V
- $V_Z$  tolerance selection of  $\pm 5\%$
- Compliant to RoHS directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21

### APPLICATIONS

- Low voltage stabilizers or voltage references
- Adapters
- Lighting application
- On-board DC/DC converter

### MECHANICAL DATA

- Case: DO-35
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Polarity: Indicated by cathode band

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$V_Z$	2.4-56	V
$P_D$	500	mW
$V_F$ at $I_F=200\text{mA}$	1.1	V
$T_J$ Max.	200	$^{\circ}\text{C}$
Package	DO-35	
Configuration	Single die	



ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^{\circ}\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Power dissipation	$P_D$	500	mW
Forward voltage	$V_F$	1.1	V
Junction temperature range	$T_J$	200	$^{\circ}\text{C}$
Storage temperature range	$T_{STG}$	200	$^{\circ}\text{C}$

**ELECTRICAL SPECIFICATIONS** ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

PART NUMBER	ZENER VOLTAGE	TEST CURRENT	REGULAR IMPEDANCE		TEST CURRENT	LEAKAGE CURRENT	
	$V_Z @ I_{ZT}$	$I_{ZT}$	$Z_{ZT} @ I_{ZT}$	$Z_{ZK} @ I_{ZK}$	$I_{ZK}$	$I_R @ V_R$	
	V	mA	$\Omega$	$\Omega$	mA	$\mu\text{A}$	V
	Nominal		Max.	Max.		Max.	
1N5221B	2.4	20	30	1200	0.25	100	1.0
1N5222B	2.5	20	30	1250	0.25	100	1.0
1N5223B	2.7	20	30	1300	0.25	75	1.0
1N5224B	2.8	20	30	1400	0.25	75	1.0
1N5225B	3.0	20	29	1600	0.25	50.0	1.0
1N5226B	3.3	20	28	1600	0.25	25.0	1.0
1N5227B	3.6	20	24	1700	0.25	15.0	1.0
1N5228B	3.9	20	23	1900	0.25	10.0	1.0
1N5229B	4.3	20	22	2000	0.25	5.0	1.0
1N5230B	4.7	20	19	1900	0.25	5.0	2.0
1N5231B	5.1	20	17	1600	0.25	5.0	2.0
1N5232B	5.6	20	11	1600	0.25	5.0	3.0
1N5233B	6.0	20	7	1600	0.25	5.0	3.5
1N5234B	6.2	20	7	1000	0.25	5.0	4.0
1N5235B	6.8	20	5	750	0.25	3.0	5.0
1N5236B	7.5	20	6	500	0.25	3.0	6.0
1N5237B	8.2	20	8	500	0.25	3.0	6.5
1N5238B	8.7	20	8	600	0.25	3.0	6.5
1N5239B	9.1	20	10	600	0.25	3.0	7.0
1N5240B	10	20	17	600	0.25	2.0	8
1N5241B	11	20	22	600	0.25	1.0	8.4
1N5242B	12	20	30	600	0.25	0.5	9
1N5243B	13	9.5	13	600	0.25	0.1	10
1N5244B	14	9.0	15	600	0.25	0.1	10
1N5245B	15	8.5	16	600	0.25	0.1	11
1N5246B	16	7.8	17	600	0.25	0.1	12
1N5247B	17	7.4	19	600	0.25	0.1	13
1N5248B	18	7.0	21	600	0.25	0.1	14
1N5249B	19	6.6	23	600	0.25	0.1	14
1N5250B	20	6.2	25	600	0.25	0.1	15
1N5251B	22	5.6	29	600	0.25	0.1	17
1N5252B	24	5.2	33	600	0.25	0.1	18
1N5253B	25	5.0	35	600	0.25	0.1	18
1N5254B	27	4.6	41	600	0.25	0.1	21
1N5255B	28	4.5	44	600	0.25	0.1	21
1N5256B	30	4.2	49	600	0.25	0.1	23
1N5257B	33	3.8	58	700	0.25	0.1	25
1N5258B	36	3.4	70	700	0.25	0.1	27

**ELECTRICAL SPECIFICATIONS** ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

PART NUMBER	ZENER VOLTAGE	TEST CURRENT	REGULAR IMPEDANCE		TEST CURRENT	LEAKAGE CURRENT	
	$V_Z @ I_{ZT}$	$I_{ZT}$	$Z_{ZT} @ I_{ZT}$	$Z_{ZK} @ I_{ZK}$	$I_{ZK}$	$I_R @ V_R$	
	V	mA	$\Omega$	$\Omega$	mA	$\mu\text{A}$	V
	Nominal		Max.	Max.		Max.	
1N5259B	39	3.2	80	800	0.25	0.1	30
1N5260B	43	3.0	93	900	0.25	0.1	33
1N5261B	47	2.7	105	1000	0.25	0.1	36
1N5262B	51	2.5	125	1100	0.25	0.1	39
1N5263B	56	2.2	150	1300	0.25	0.1	43

**Notes:**

- Nominal zener voltages between the voltages shown and tighter voltage, for detailed information on price, availability and delivery.
- The zener voltage ( $V_Z$ ) is tested under pulse condition. The measured  $V_Z$  is guaranteed to be within specification with device junction in thermal equilibrium.
- 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 ( $I_{ZT}$ ) is superimposed to  $I_{ZT}$ .
- Zener voltage has a standard tolerance on the nominal zener voltage of  $\pm 5\%$ .

**ORDERING INFORMATION**

PART NO. (Note 1)	PACKAGE	PACKING
1N52xxB R0	DO-35	10K / 14" Reel
1N52xxB R0G	DO-35	10K / 14" Reel
1N52xxB A0	DO-35	5K / Box ( Ammo )
1N52xxB A0G	DO-35	5K / Box ( Ammo )

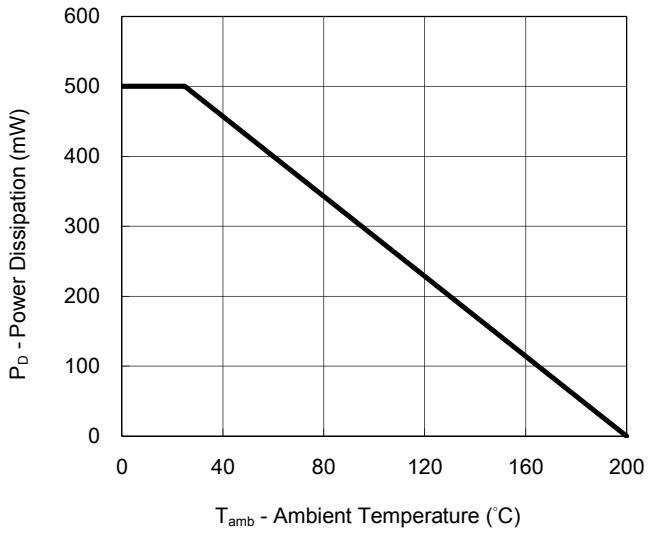
**Note:**

- "xx" defines part no. from 1N5221B to 1N5263B

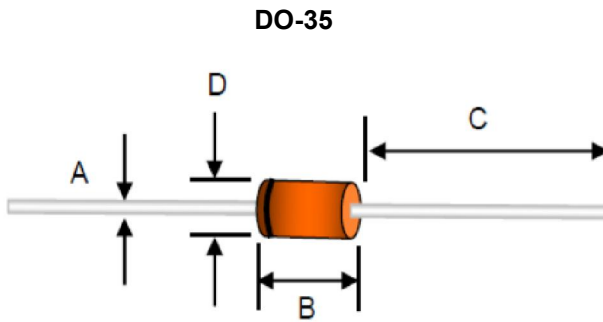
### CHARACTERISTICS CURVES

( $T_A = 25^\circ\text{C}$  unless otherwise noted)

**Fig. 1 Power dissipation VS. Ambient temperature**

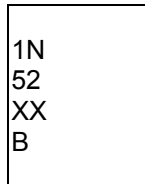
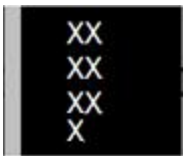


**PACKAGE OUTLINE DIMENSION**



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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[1N5232B](#) [1N5233B](#) [1N5234B](#) [1N5235B](#) [1N5236B](#) [1N5237B](#) [1N5238B](#) [1N5239B](#) [1N5240B](#) [1N5241B](#) [1N5242B](#)  
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[1N5241B R0G](#)