

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 $I_F=200mA$	1.1	V
T_J Max.	200	°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 $I_F=200mA$	V_F	1.1	V
Junction temperature range	T_J	200	°C
Storage temperature range	T_{STG}	200	°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	Ω	Ω	mA	μA	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	Ω	Ω	mA	μA	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)

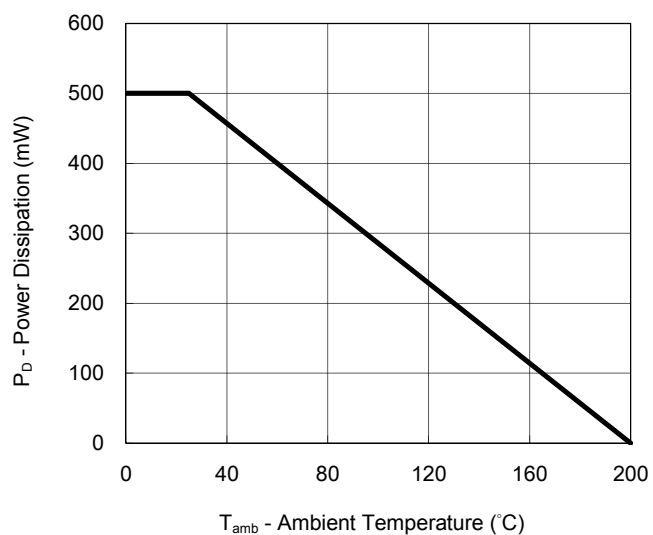
Note:

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

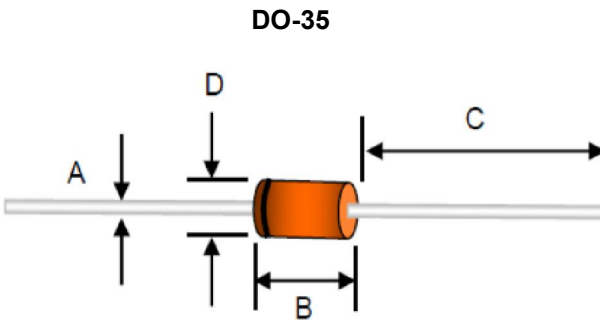
CHARACTERISTICS CURVES

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

Fig. 1 Power dissipation VS. Ambient temperature

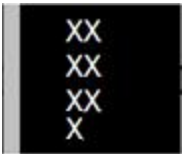


PACKAGE OUTLINE DIMENSION



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



1N
52
XX
B

Notice

Specifications of the products displayed herein are subject to change without notice. TSC or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Information contained herein is intended to provide a product description only. No license, express or implied, to any intellectual property rights is granted by this document. Except as provided in TSC's terms and conditions of sale for such products, TSC assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of TSC products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify TSC for any damages resulting from such improper use or sale.