

500 mW DO-35 Hermetically Sealed Glass Zener Voltage Regulators



Maximum Ratings (Note 1)

Rating	Symbol	Value	Units
Maximum Steady State Power Dissipation @TL≤75°C, Lead Length = 3/8"	P _D	500	mW
Derate Above 75°C		4.0	mW/°C
Operating and Storage Temperature Range	T _J , T _{stg}	-65 to +200	°C

Note 1: Some part number series have lower JEDEC registered ratings.

Specification Features:

- Zener Voltage Range = 2.4V to 200V
- ESD Rating of Class 3 (>6 KV) per Human Body Model
- DO-35 Package (DO-204AH)
- Double Slug Type Construction
- Metallurgical Bonded Construction
- RoHS Compliant
- Solder Hot Dip Tin (Sn) Lead Finish

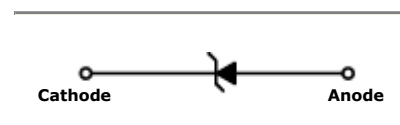
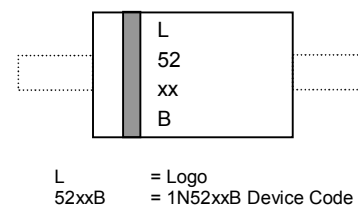
Specification Features:

Case : Double slug type, hermetically sealed glass

Finish : All external surfaces are corrosion resistant and leads are readily solderable

Polarity : Cathode indicated by polarity band

Mounting: Any



ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted.)

Device (Note 2.)	Device Marking	Zener Voltage (Note 3.)				Zener Impedance (Note 4.)			Leakage Current		θ _{VZ} (Note 5.)
		V _Z (Volts)			@I _{ZT}	Z _{VT} @I _{ZT}	Z _{ZK} @I _{ZK}	I _R @ V _R			
		Min	Nom	Max	(mA)	(Ω)	(Ω)	(mA)	(uA Max)	(Volts)	(%/°C)
1N5221B	1N5221B	2.280	2.4	2.520	20	30	1200	0.25	100	1	-0.085
1N5222B	1N5222B	2.375	2.5	2.625	20	30	1250	0.25	100	1	-0.085
1N5223B	1N5223B	2.565	2.7	2.835	20	30	1300	0.25	75	1	-0.080
1N5224B	1N5224B	2.660	2.8	2.940	20	30	1400	0.25	75	1	-0.080
1N5225B	1N5225B	2.850	3.0	3.150	20	29	1600	0.25	50	1	-0.075
1N5226B	1N5226B	3.135	3.3	3.465	20	28	1600	0.25	25	1	-0.070
1N5227B	1N5227B	3.420	3.6	3.780	20	24	1700	0.25	15	1	-0.065
1N5228B	1N5228B	3.705	3.9	4.095	20	23	1900	0.25	10	1	-0.060
1N5229B	1N5229B	4.085	4.3	4.515	20	22	2000	0.25	5	1	±0.055
1N5230B	1N5230B	4.465	4.7	4.935	20	19	1900	0.25	5	2	±0.030
1N5231B	1N5231B	4.845	5.1	5.355	20	17	1600	0.25	5	2	±0.030
1N5232B	1N5232B	5.320	5.6	5.880	20	11	1600	0.25	5	3	+0.038
1N5233B	1N5233B	5.700	6.0	6.300	20	7	1600	0.25	5	3.5	+0.038
1N5234B	1N5234B	5.890	6.2	6.510	20	7	1000	0.25	5	4	+0.045
1N5235B	1N5235B	6.460	6.8	7.140	20	5	750	0.25	3	5	+0.050
1N5236B	1N5236B	7.125	7.5	7.875	20	6	500	0.25	3	6	+0.058
1N5237B	1N5237B	7.790	8.2	8.610	20	8	500	0.25	3	6.5	+0.062
1N5238B	1N5238B	8.265	8.7	9.135	20	8	600	0.25	3	6.5	+0.065
1N5239B	1N5239B	8.645	9.1	9.555	20	10	600	0.25	3	7	+0.068
1N5240B	1N5240B	9.500	10	10.500	20	17	600	0.25	3	8	+0.075
1N5241B	1N5241B	10.45	11	11.55	20	22	600	0.25	2	8.4	+0.076
1N5242B	1N5242B	11.40	12	12.60	20	30	600	0.25	1	9.1	+0.077
1N5243B	1N5243B	12.35	13	13.65	9.5	13	600	0.25	0.5	9.9	+0.079
1N5244B	1N5244B	13.30	14	14.70	9	15	600	0.25	0.1	10	+0.082
1N5245B	1N5245B	14.25	15	15.75	8.5	16	600	0.25	0.1	11	+0.082
1N5246B	1N5246B	15.20	16	16.80	7.8	17	600	0.25	0.1	12	+0.083
1N5247B	1N5247B	16.15	17	17.85	7.4	19	600	0.25	0.1	13	+0.084
1N5248B	1N5248B	17.10	18	18.90	7	21	600	0.25	0.1	14	+0.085
1N5249B	1N5249B	18.05	19	19.95	6.6	23	600	0.25	0.1	14	+0.086
1N5250B	1N5250B	19.00	20	21.00	6.2	25	600	0.25	0.1	15	+0.086
1N5251B	1N5251B	20.90	22	23.10	5.6	29	600	0.25	0.1	17	+0.087
1N5253B	1N5253B	23.75	25	26.25	5	35	600	0.25	0.1	19	+0.089
1N5254B	1N5254B	25.65	27	28.35	4.6	41	600	0.25	0.1	21	+0.090
1N5255B	1N5255B	26.60	28	29.40	4.5	44	600	0.25	0.1	21	+0.091
1N5256B	1N5256B	28.50	30	31.50	4.2	49	600	0.25	0.1	23	+0.091
1N5257B	1N5257B	31.35	33	34.65	3.8	58	700	0.25	0.1	25	+0.092
1N5258B	1N5258B	34.20	36	37.80	3.4	70	700	0.25	0.1	27	+0.093
1N5259B	1N5259B	37.05	39	40.95	3.2	80	800	0.25	0.1	30	+0.094
1N5260B	1N5260B	40.85	43	45.15	3.0	93	800	0.25	0.1	33	+0.095

V_F = 1.1V Max @I_F = 200mA for 30V below types, V_F = 2.0V Max @I_F = 200mA for 30~56V types, V_F = 3.0V Max @I_F = 200mA for 60V above types

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

Device (Note 1.)	Device Marking	Zener Voltage (Note 2.)				Zener Impedance (Note 3.)			Leakage Current		θ_{VZ} (Note 4.)
		V_Z (Volts)			$@I_{ZT}$	$Z_{ZT} @I_{ZT}$	$Z_{ZK} @I_{ZK}$		$I_R @ V_R$		
		Min	Nom	Max	(mA)	(Ω)	(Ω)	(mA)	(uA Max)	(Volts)	(mA)
1N5261B	1N5261B	44.65	47	49.35	2.7	105	1000	0.25	0.1	36	+0.095
1N5262B	1N5262B	48.45	51	53.55	2.5	125	1100	0.25	0.1	39	+0.096
1N5263B	1N5263B	53.20	56	58.80	2.2	150	1300	0.25	0.1	43	+0.096
1N5264B	1N5264B	57.00	60	63.00	2.1	170	1400	0.25	0.1	46	+0.097
1N5265B	1N5265B	58.90	62	65.10	2.0	185	1400	0.25	0.1	47	+0.097
1N5266B	1N5266B	64.60	68	71.40	1.8	230	1600	0.25	0.1	52	+0.097
1N5267B	1N5267B	71.25	75	78.75	1.7	270	1700	0.25	0.1	56	+0.098
1N5268B	1N5268B	77.90	82	86.10	1.5	330	2000	0.25	0.1	62	+0.098
1N5269B	1N5269B	82.65	87	91.35	1.4	370	2200	0.25	0.1	68	+0.099
1N5270B	1N5270B	86.45	91	95.55	1.4	400	2300	0.25	0.1	69	+0.099
1N5271B	1N5271B	95.0	100	105.0	1.3	500	2600	0.25	0.1	76	+0.11
1N5272B	1N5272B	104.5	110	115.5	1.1	750	3000	0.25	0.1	84	+0.11
1N5273B	1N5273B	114.0	120	126.0	1.0	900	4000	0.25	0.1	91	+0.11
1N5274B	1N5274B	123.5	130	136.5	0.95	1100	4500	0.25	0.1	99	+0.11
1N5275B	1N5275B	133.0	140	147.0	0.9	1300	4500	0.25	0.1	106	+0.11
1N5276B	1N5276B	142.5	150	157.5	0.85	1500	5000	0.25	0.1	114	+0.11
1N5277B	1N5277B	152.0	160	168.0	0.8	1700	5500	0.25	0.1	122	+0.11
1N5278B	1N5278B	161.5	170	178.5	0.74	1900	5500	0.25	0.1	129	+0.11
1N5279B	1N5279B	171.0	180	189.0	0.68	2200	6000	0.25	0.1	137	+0.11
1N5280B	1N5280B	180.5	190	199.5	0.66	2400	6500	0.25	0.1	144	+0.11

$V_F = 1.1\text{V Max}$ @ $I_F = 200\text{mA}$ for 30V below types, $V_F = 2.0\text{V Max}$ @ $I_F = 200\text{mA}$ for 30~56V types, $V_F = 3.0\text{V Max}$ @ $I_F = 200\text{mA}$ for 60V above types

2. TOLERANCE AND TYPE NUMBER DESIGNATION (V_Z)

The type numbers listed have a standard tolerance on the nominal zener voltage of $\pm 5\%$.

3. ZENER VOLTAGE (V_Z) MEASUREMENT

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.

4. ZENER IMPEDANCE (Z_Z) DERIVATION

Z_{ZT} and Z_{ZK} are measured by dividing the AC voltage drop across the device by the AC current applied. The specified limits are for $I_{Z(AC)} = 0.1 I_{Z(DC)}$ with AC frequency = 60Hz.

5. TEMPERATURE COEFFICIENT (θ_{VZ})

Test conditions for temperature coefficient are as follows:

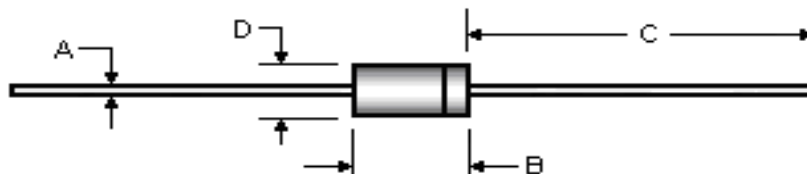
A. $I_{ZT} = 7.5\text{mA}$, $T_1 = 25^\circ\text{C}$, $T_2 = 125^\circ\text{C}$ (1N5221B through 1N5242B)

B. $I_{ZT} = \text{Rated } I_{ZT}$, $T_1 = 25^\circ\text{C}$, $T_2 = 125^\circ\text{C}$ (1N5243B through 1N5281B)

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

Package Outline

Case Outline



DIM	DO-35			
	Millimeters		Inches	
	Min	Max	Min	Max
A	0.46	0.56	0.018	0.022
B	3.05	5.08	0.120	0.200
C	25.40	38.10	1.000	1.500
D	1.52	2.29	0.060	0.090

Note: all dimensions are within JEDEC standard.

NOTICE

The information presented in this document is for reference only. Tak Cheong reserves the right to make changes without notice for the specification of the products displayed herein.

The product listed herein is designed to be used with ordinary electronic equipment or devices, and not designed to be used with equipment or devices which require high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), Tak Cheong Semiconductor Co., Ltd., or anyone on its behalf, assumes no responsibility or liability for any damages resulting from such improper use of sale.

This publication supersedes & replaces all information previously supplied. For additional information, please visit our website <http://www.takcheong.com>, or consult your nearest Tak Cheong's sales office for further assistance.