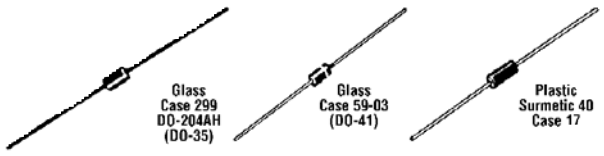
Zener Diodes

Voltage Regulator Diodes



Axial Leaded for Through-Hole Designs (Cathode=Polarity Band)

Mfr.'s Type				Nominal Zener Breakdown Voltage (V)[1]
DO-204AH*		(DO-41)**	Case 17†	
500 mW Low Level[2]	500 mW[3]	1 Watt[4]	5 Watts[5]	
1N4678	—	—	—	1.8
—	1N5221B	—	—	2.4
—	1N5223B	—	—	2.7
—	1N5226B	1N4728A	1N5333B	3.3
—	1N5228B	1N4730A	1N5335B	3.9
—	1N5229B	1N4731A	1N5336B	4.3
—	1N5230B	1N4732A	1N5337B	4.7
—	1N5231B	1N4733A	1N5338B	5.1
—	1N5232B	1N4734A	1N5339B	5.6
—	1N5233B	—	1N5340B	6.0
—	1N5234B	1N4735A	1N5341B	6.2
—	1N5235B	1N4736A	1N5342B	6.8
—	1N5236B	1N4737A	1N5343B	7.5
—	1N5237B	1N4738A	1N5344B	8.2
—	1N5239B	1N4739A	1N5346B	9.1
—	1N5240B	1N4740A	1N5347B	10.0
—	—	—	1N5348B	11.0
—	1N5242B	1N4742A	1N5349B	12.0
—	—	1N4743A	1N5350B	13.0
—	—	—	1N5351B	14.0
—	1N5245B	1N4744A	1N5352B	15.0
—	—	1N4745A	1N5353B	16.0
—	—	—	1N5354B	17.0
—	1N5248B	1N4746A	1N5355B	18.0

Mfr.'s Type				Nominal Zener Breakdown Voltage (V)[1]
DO-204AH*		(DO-41)**	Case 17†	
500 mW Low Level[2]	500 mW[3]	1 Watt[4]	5 Watts[5]	
—	—	1N4747A	1N5357B	20.0
—	—	1N4748A	1N5358B	22.0
—	—	1N4749A	1N5359B	24.0
—	—	—	1N5360B	25.0
—	1N5254B	1N4750A	—	27.0
—	—	—	1N5362B	28.0
—	—	1N4751A	1N5363B	30.0
—	—	1N4752A	1N5364B	33.0
—	—	—	1N5365B	36.0
—	—	1N4754A	1N5366B	39.0
—	—	—	1N5367B	43.0
—	—	—	1N5368B	47.0
—	—	—	1N5369B	51.0
—	—	—	1N5370B	56.0
—	—	1N4759A	1N5372B	62.0
—	—	1N4760A	—	68.0
—	—	1N4761A	1N5374B	75.0
—	—	—	1N5375B	82.0
—	—	—	1N5377B	91.0
—	—	—	1N5378B	100.0
—	—	—	1N5380B	120.0
—	—	—	1N5383B	150.0
—	—	—	1N5386B	180.0
—	—	—	1N5388B	200.0

[1]Zener Voltage is the key parameter for each device type. It is specified at a particular test current applied at either thermal equilibrium (T.E.) or pulse test condition. The voltage tolerance for the device types listed is, in general, ±5%; however, for some series, the voltage tolerance varies from device type to device type over a range of ±(5 to 8.5)%. Consult the complete data sheet to determine the exact test conditions and minimum/maximum limits for the zener voltage. Consult Application Note AN924 regarding measurement of Zener Voltage (pulse versus thermal equilibrium). Power Ratings represent the capability of the case size listed as supplied by ON Semiconductor. These ratings may be higher than the JEDEC registration and/or the same device types supplied by other manufacturers. **V_Z Test Conditions and Tolerances.** [2]**1N4678 Series:** I_{ZT}=50 µA (T.E.) — No suffix=±5%; C suffix=±2%; D suffix=±1%. Also has delta V_Z parameter and limit. [3]**1N5221B-42B,1N5243B-81B:** I_{ZT}=20 mA (T.E), I_{ZT} @ approximately 125 mW point (T.E) — B suffix=±5%; C suffix=±2%; D suffix=±1%. [4]**1N4728A-64A:** I_{ZT} @ approximately 250 mW point (T.E.) — A suffix=±5%; C suffix=±2%; D suffix=±1%. [5]**1N5333B-88B:** I_{ZT} varies from 0.9 to 1.5 W point depending on type number (pulse) — B suffix=±5%; Also has delta V_Z parameter and limit.*Glass Case 299 — (DO-35). **Glass Case 59-03. †Plastic Surmetic 40.

Surface Mount Zener Diodes

Mfr.'s Type				Nominal Zener Breakdown Voltage (V)[1]
Case 318-08*	Case 425**		Case 403A†	
225 mW SOT-23[2]	500 mW Low Level SOD-123[3]	500 mW SOD-123[4]	3 Watt SMB[5]	
MMBZ5226BLT1	MMSZ4684T1	MMSZ5226BT1	—	3.3
MMBZ5229BLT1	—	—	—	4.3
—	MMSZ4688T1	—	—	4.7
MMBZ5231BLT1	MMSZ4689T1	MMSZ5231BT1	—	5.1
—	MMSZ4690T1	MMSZ5232BT1	—	5.6
MMBZ5234BLT1	MMSZ4691T1	—	—	6.2
MMBZ5235BLT1	—	—	—	6.8
MMBZ5236BLT1	—	MMSZ5236BT1	—	7.5
—	—	MMSZ5237BT1	1SMB5923BT3	8.2

Mfr.'s Type				Nominal Zener Breakdown Voltage (V)[1]
Case 318-08*	Case 425**		Case 403A†	
225 mW SOT-23[2]	500 mW Low Level SOD-123[3]	500 mW SOD-123[4]	3 Watt SMB[5]	
—	—	MMSZ5239BT1	—	9.1
MMBZ5240BLT1	—	MMSZ5240BT1	—	10.0
MMBZ5242BLT1	—	MMSZ5242BT1	—	12.0
MMBZ5245BLT1	—	MMSZ5245BT1	1SMB5929BT3	15.0
MMBZ5248BLT1	—	—	1SMB5931BT3	18.0
—	—	—	—	25.0
—	—	MMSZ5258BT1	—	36.0
—	—	MMSZ5260BT1	—	43.0
—	—	—	—	—

[1]Zener Voltage is the key parameter for each device type. It is specified at a particular test current applied at either thermal equilibrium (T.E.) or pulse test condition. The voltage tolerance for the device types listed is, in general ±5%; however, for some series, the voltage tolerance varies from device type to device type over a range of ±(5 to 8.5)%. Consult the complete data sheet to determine the exact test conditions and minimum/maximum limits for the zener voltage. Power Ratings represent the capability of the case size listed as supplied by ON Semiconductor. These ratings may be higher than the same device types supplied by other manufacturers. **V_Z Test Conditions and Tolerances.** [2]**MMBZ5221BL-42BLT1, MMBZ5243L-70BLT1:** I_{ZT}=20 mA, I_{ZT} @ approximately 125 mW point (pulse) — BL suffix=±5%. [3]**MMSZ4678T1 Series:** I_{ZT}=50 µA (T.E) — No suffix=±5%. [4]**MMSZ5221B-42BT1, MMSZ5343B-63BT1:** I_{ZT}=20 mA (T.E), IZT @ approximately 125 mW point (T.E.) — A suffix=±10%; B suffix=±5%. [5]**1SMB5913BT3 Series:** I_{ZT} @ approximately 375 mW point (T.E.) — BT3 suffix=±5%; T3 suffix designates tape and reel of 2500 units. *Plastic — TO-236AB. **Plastic — Style 1. †Plastic — Cathode=Notch. Note: T1 suffix indicates 3000 pieces tape and reel. T3 suffix indicates 2500 piece tape and reel.