Small Signal Zener Diodes

Features

- Silicon planar power Zener diodes
- Standard Zener voltage tolerance is ± 5 %
- These diodes are also available in Mini-MELF case with the type designation TZM5221 to TZM5267, SOT-23 case with the type designations MMBZ5225 to MMBZ5267 and SOD-123 case with the types designations MMSZ5225 to MMSZ5267
- AEC-Q101 qualified
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21 definition

RoHS COMPLIANT
HALOGEN FREE


94 9367

Applications

- Voltage stabilization

Mechanical Data

Case: DO-35
Weight: approx. 125 mg
Cathode band color: black
Packaging codes/options:
TAP/10K per ammopack (52 mm tape), 30K/box
TR/10K per 13" reel, 30K/box

Absolute Maximum Ratings

T_{amb} = 25 °C, unless otherwise specified

Parameter	Test condition	Symbol	Value	Unit
Power dissipation	$T_L \leq 25$ °C	P_{tot}	500	mW
Z-current		I_Z	P_{tot}/V_Z	mA

Thermal Characteristics

T_{amb} = 25 °C, unless otherwise specified

Parameter	Test condition	Symbol	Value	Unit
Thermal resistance junction to ambient air	l = 4 mm, T_L = constant	R_{thJA}	300	K/W
Junction temperature		T_j	175	°C
Storage temperature range		T_{stg}	- 65 to + 175	°C

Electrical Characteristics

T_{amb} = 25 °C, unless otherwise specified

Parameter	Test condition	Symbol	Min.	Typ.	Max.	Unit
Forward voltage	I_F = 200 mA	V_F			1.1	V

Electrical Characteristics

1N5221B...1N5267B

Part number	Nominal Zener voltage[1)]	Test current	Maximum dynamic impedance[1)]	Maximum dynamic impedance	Typical temperature of coeffizient	Maximum reverse leakage current	
	at I_{ZT}, V_Z	I_{ZT}	Z_{ZT} at I_{ZT}	Z_{ZK} at I_{ZK} = 0.25 mA	at I_{ZT}	I_R	V_R
	V	mA	Ω	Ω	α (%/K)	µA	V
1N5221B	2.4	20	30	1200	- 0.085	100	1
1N5222B	2.5	20	30	1250	- 0.085	100	1
1N5223B	2.7	20	30	1300	- 0.080	75	1
1N5224B	2.8	20	30	1400	- 0.080	75	1
1N5225B	3	20	29	1600	- 0.075	50	1
1N5226B	3.3	20	28	1600	- 0.070	25	1
1N5227B	3.6	20	24	1700	- 0.065	15	1
1N5228B	3.9	20	23	1900	- 0.060	10	1
1N5229B	4.3	20	22	2000	+ 0.055	5	1
1N5230B	4.7	20	19	1900	+ 0.030	5	2
1N5231B	5.1	20	17	1600	+ 0.030	5	2
1N5232B	5.6	20	11	1600	+ 0.038	5	3
1N5233B	6	20	7	1600	+ 0.038	5	3.5
1N5234B	6.2	20	7	1000	+ 0.045	5	4
1N5235B	6.8	20	5	750	+ 0.050	3	5
1N5236B	7.5	20	6	500	+ 0.058	3	6
1N5237B	8.2	20	8	500	+ 0.062	3	6.5
1N5238B	8.7	20	8	600	+ 0.065	3	6.5
1N5239B	9.1	20	10	600	+ 0.068	3	7
1N5240B	10	20	17	600	+ 0.075	3	8
1N5241B	11	20	22	600	+ 0.076	2	8.4
1N5242B	12	20	30	600	+ 0.077	1	9.1
1N5243B	13	9.5	13	600	+ 0.079	0.5	9.9
1N5244B	14	9	15	600	+ 0.082	0.1	10
1N5245B	15	8.5	16	600	+ 0.082	0.1	11
1N5246B	16	7.8	17	600	+ 0.083	0.1	12
1N5247B	17	7.4	19	600	+ 0.084	0.1	13
1N5248B	18	7	21	600	+ 0.085	0.1	14
1N5249B	19	6.6	23	600	+ 0.086	0.1	14
1N5250B	20	6.2	25	600	+ 0.086	0.1	15
1N5251B	22	5.6	29	600	+ 0.087	0.1	17
1N5252B	24	5.2	33	600	+ 0.088	0.1	18
1N5253B	25	5	35	600	+ 0.089	0.1	19
1N5254B	27	4.6	41	600	+ 0.090	0.1	21
1N5255B	28	4.5	44	600	+ 0.091	0.1	21
1N5256B	30	4.2	49	600	+ 0.091	0.1	23
1N5257B	33	3.8	58	700	+ 0.092	0.1	25
1N5258B	36	3.4	70	700	+ 0.093	0.1	27
1N5259B	39	3.2	80	800	+ 0.094	0.1	30
1N5260B	43	3	93	900	+ 0.095	0.1	33
1N5261B	47	2.7	105	1000	+ 0.095	0.1	36
1N5262B	51	2.5	125	1100	+ 0.096	0.1	39
1N5263B	56	2.2	150	1300	+ 0.096	0.1	43
1N5264B	60	2.1	170	1400	+ 0.097	0.1	46

Part number	Nominal Zener voltage[1)]	Test current	Maximum dynamic impedance[1)]	Maximum dynamic impedance	Typical temperature of coeffizient	Maximum reverse leakage current	
	at I_{ZT}, V_Z	I_{ZT}	Z_{ZT} at I_{ZT}	Z_{ZK} at I_{ZK} = 0.25 mA	at I_{ZT}	I_R	V_R
	V	mA	Ω	Ω	α (%/K)	µA	V
1N5265B	62	2	185	1400	+ 0.097	0.1	47
1N5266B	68	1.8	230	1600	+ 0.097	0.1	52
1N5267B	75	1.7	270	1700	+ 0.098	0.1	56

[1)] Based on dc-measurement at thermal equilibrium; lead length = 9.5 (3/8 "); thermal resistance of heat sink = 30 K/W

Typical Characteristics

T_{amb} = 25 °C, unless otherwise specified

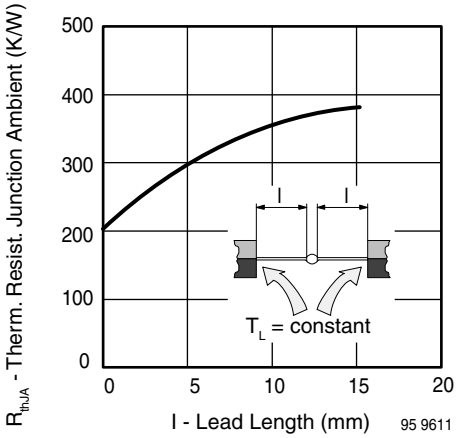


Figure 1. Thermal Resistance vs. Lead Length

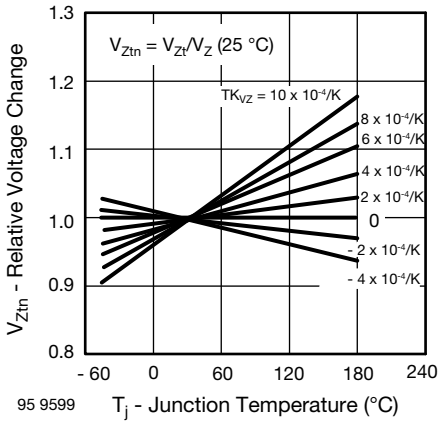


Figure 3. Typical Change of Working Voltage vs. Junction Temperature

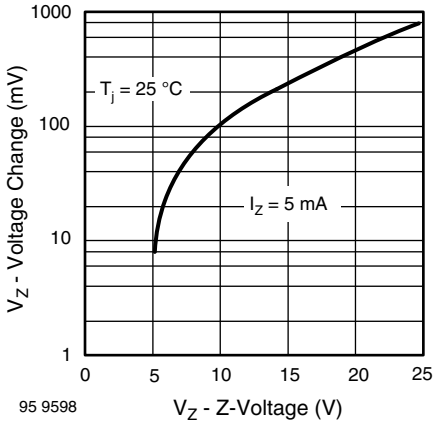


Figure 2. Typical Change of Working Voltage under Operating Conditions at T_{amb} = 25 °C

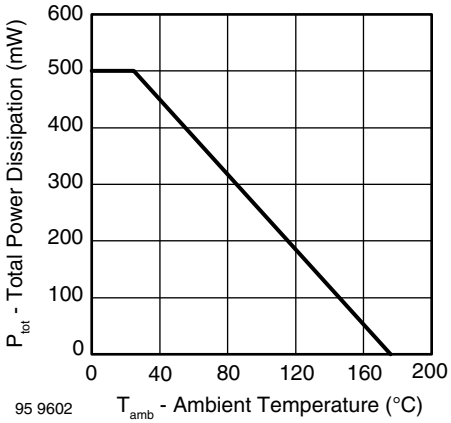


Figure 4. Total Power Dissipation vs. Ambient Temperature

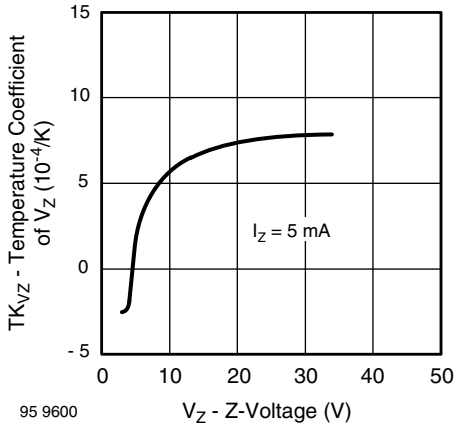


Figure 5. Temperature Coefficient of Vz vs. Z-Voltage

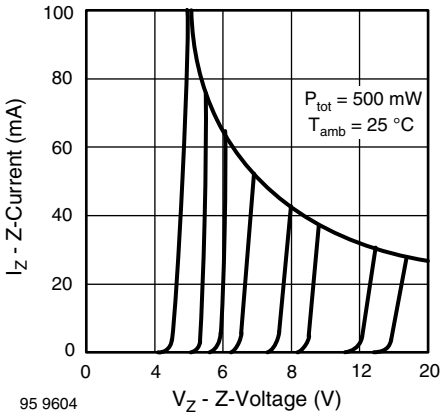


Figure 8. Z-Current vs. Z-Voltage

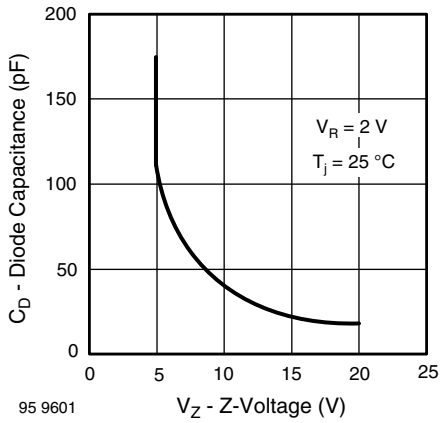


Figure 6. Diode Capacitance vs. Z-Voltage

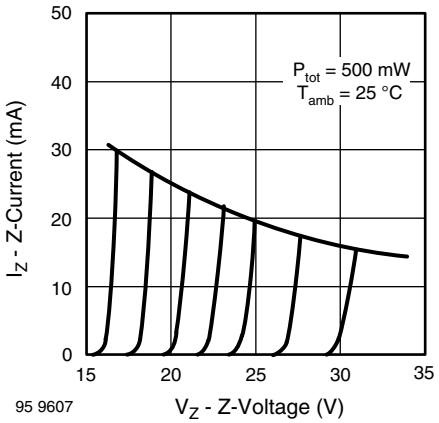


Figure 9. Z-Current vs. Z-Voltage

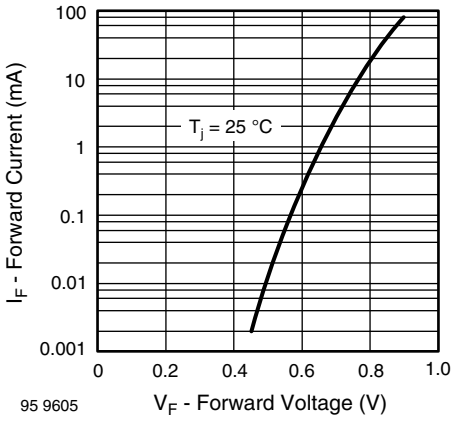


Figure 7. Forward Current vs. Forward Voltage

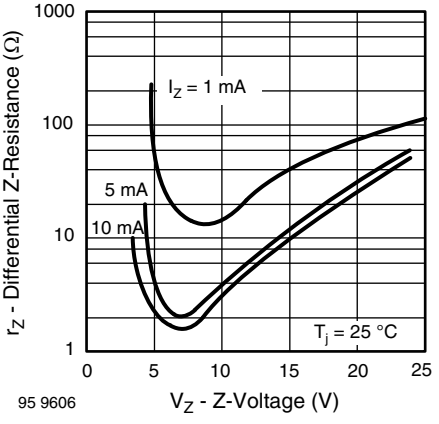


Figure 10. Differential Z-Resistance vs. Z-Voltage

For technical questions within your region, please contact one of the following:
DiodesAmericas@vishay.com, DiodesAsia@vishay.com, DiodesEurope@vishay.com

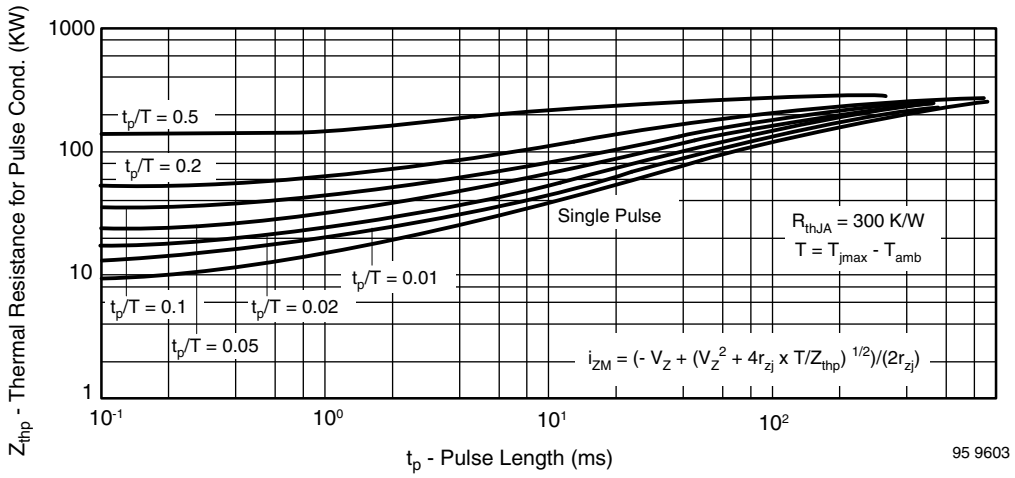
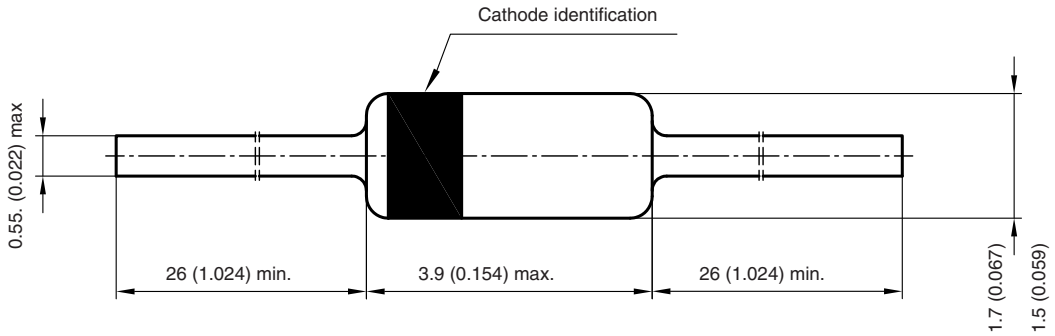


Figure 11. Thermal Response

Package Dimensions in millimeters (inches): **DO-35**



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