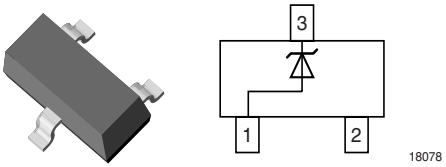
Small Signal Zener Diodes

Features

- Silicon Planar Power Zener Diodes.
- Standard Zener voltage tolerance is ± 5 % with a "B" suffix (e.g.: MMBZ5225B-V), suffix “C” is ± 2 % tolerance.
- High temperature soldering guaranteed: 260 °C/4X10 seconds at terminals.
- These diodes are also available in MiniMELF case with the type designation ZMM5225...ZMM5267, SOD-123 case with the type designation MMSZ5225-V... MMSZ5267-V.
- Lead (Pb)-free component
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



Mechanical Data

Case: SOT-23 Plastic case

Weight: approx. 8.8 mg

Packaging Codes/Options:

GS18 / 10 k per 13 " reel (8 mm tape), 10 k/box

GS08 / 3 k per 7 " reel (8 mm tape), 15 k/box

Absolute Maximum Ratings

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

Parameter	Test condition	Symbol	Value	Unit
Zener current (see Table "Characteristics")				
Power dissipation	T_A = 25 °C	P_{tot}	225[1)]	mW
		P_{tot}	300[2)]	mW

1) On FR - 5 board using recommended solder pad layout

2) On alumina substrate

Thermal Characteristics

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

Parameter	Test condition	Symbol	Value	Unit
Thermal resistance junction to ambient air		R_{thJA}	556[1)]	°C/W
Maximum junction temperature		T_j	150	°C
Storage temperature range		T_S	-65 to + 175	°C

1) On FR - 5 board using recommended solder pad layout

Electrical Characteristics

T_{amb} = 25 ° unless otherwise noted
Maximum V_F = 0.9 V at I_F = 10 mA

Partnumber	Marking Code	Nominal Zener Voltage	Test Current	Maximum Dynamic Impedance[1)]		Typical Temp. of Coefficient	Maximum Reverse Leakage Current	
		V_Z @ I_{ZT1}	I_{ZT1}	Z_{ZT} @ I_{ZT}	Z_{ZK} @ I_{ZK} = 0.25 mA	α_{VZ}	I_R	V_R
		V	mA	Ω	Ω	%/°C	µA	V
MMBZ5225-V	18E	3	20	30	1600	-0.075	50	1
MMBZ5226-V	8A	3.3	20	28	1600	-0.07	25	1
MMBZ5227-V	8B	3.6	20	24	1700	-0.065	15	1
MMBZ5228-V	8C	3.9	20	23	1900	-0.06	10	1
MMBZ5229-V	8D	4.3	20	22	2000	-0.055	5	1
MMBZ5230-V	8E	4.7	20	19	1900	±0.030	5	2
MMBZ5231-V	8F	5.1	20	17	1600	±0.030	5	2
MMBZ5232-V	8G	5.6	20	11	1600	0.038	5	3
MMBZ5233-V	8H	6	20	7	1600	0.038	5	3.5
MMBZ5234-V	8J	6.2	20	7	1000	0.045	5	4
MMBZ5235-V	8K	6.8	20	5	750	0.05	3	5
MMBZ5236-V	8L	7.5	20	6	500	0.058	3	6
MMBZ5237-V	8M	8.2	20	8	500	0.062	3	6.5
MMBZ5238-V	8N	8.7	20	8	600	0.065	3	6.5
MMBZ5239-V	8P	9.1	20	10	600	0.068	3	7
MMBZ5240-V	8Q	10	20	17	600	0.075	3	8
MMBZ5241-V	8R	11	20	22	600	0.076	2	8.4
MMBZ5242-V	8S	12	20	30	600	0.077	1	9.1
MMBZ5243-V	8T	13	9.5	13	600	0.079	0.5	9.9
MMBZ5244-V	8U	14	9	15	600	0.082	0.1	10
MMBZ5245-V	8V	15	8.5	16	600	0.082	0.1	11
MMBZ5246-V	8W	16	7.8	17	600	0.083	0.1	12
MMBZ5247-V	8X	17	7.4	19	600	0.084	0.1	13
MMBZ5248-V	8Y	18	7	21	600	0.085	0.1	14
MMBZ5249-V	8Z	19	6.6	23	600	0.086	0.1	14
MMBZ5250-V	81A	20	6.2	25	600	0.086	0.1	15
MMBZ5251-V	81B	22	5.6	29	600	0.087	0.1	17
MMBZ5252-V	81C	24	5.2	33	600	0.087	0.1	18
MMBZ5253-V	81D	25	5	35	600	0.089	0.1	19
MMBZ5254-V	81E	27	4.6	41	600	0.090	0.1	21
MMBZ5255-V	81F	28	4.5	44	600	0.091	0.1	21
MMBZ5256-V	81G	30	4.2	49	600	0.091	0.1	23
MMBZ5257-V	81H	33	3.8	58	700	0.092	0.1	25
MMBZ5258-V	81J	36	3.4	70	700	0.093	0.1	27
MMBZ5259-V	81K	39	3.2	80	800	0.094	0.1	30
MMBZ5260-V	18F	43	3	93	900	0.095	0.1	33
MMBZ5261-V	81M	47	2.7	105	1000	0.095	0.1	36
MMBZ5262-V	81N	51	2.5	125	1100	0.096	0.1	39
MMBZ5263-V	81P	56	2.2	150	1300	0.096	0.1	43
MMBZ5264-V	81Q	60	2.1	170	1400	0.097	0.1	46
MMBZ5265-V	81R	62	2	185	1400	0.097	0.1	47
MMBZ5266-V	81S	68	1.8	230	1600	0.097	0.1	52
MMBZ5267-V	81T	75	1.7	270	1700	0.098	0.1	56

[1)]The Zener Impedance is derived from the 1 kHZ AC voltage which results when an AC current having an RMS value equal to 10 % of the Zener current (I_{ZT} or I_{ZK}) is superimposed on I_{ZT} or I_{ZK}. Zener Impedance is measured at two points to insure a sharp knee on the breakdown curve and to eliminate unstable units.

[3)] Measured at thermal equilibrium.

Typical Characteristics (Tamb = 25 °C unless otherwise specified)

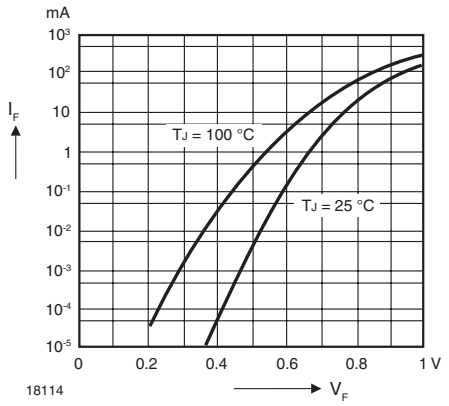


Figure 1. Forward characteristics

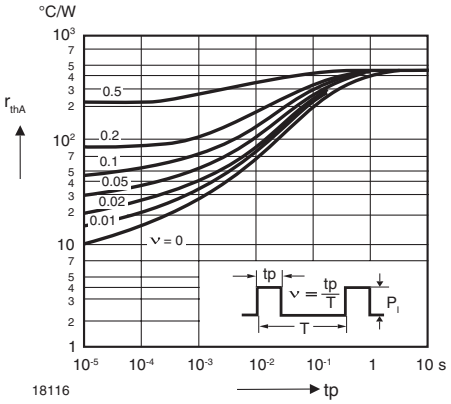


Figure 4. Pulse Thermal Resistance vs. Pulse Duration

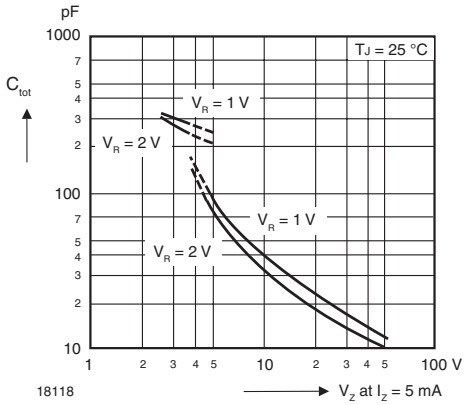


Figure 2. Capacitance vs. Zener Voltage

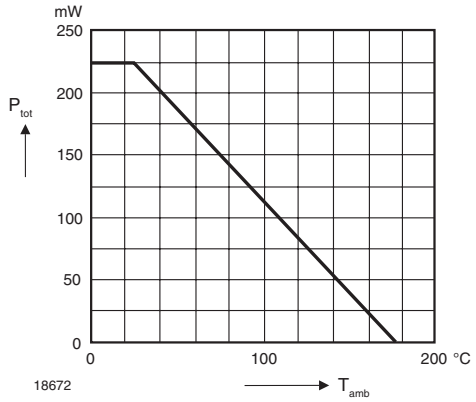
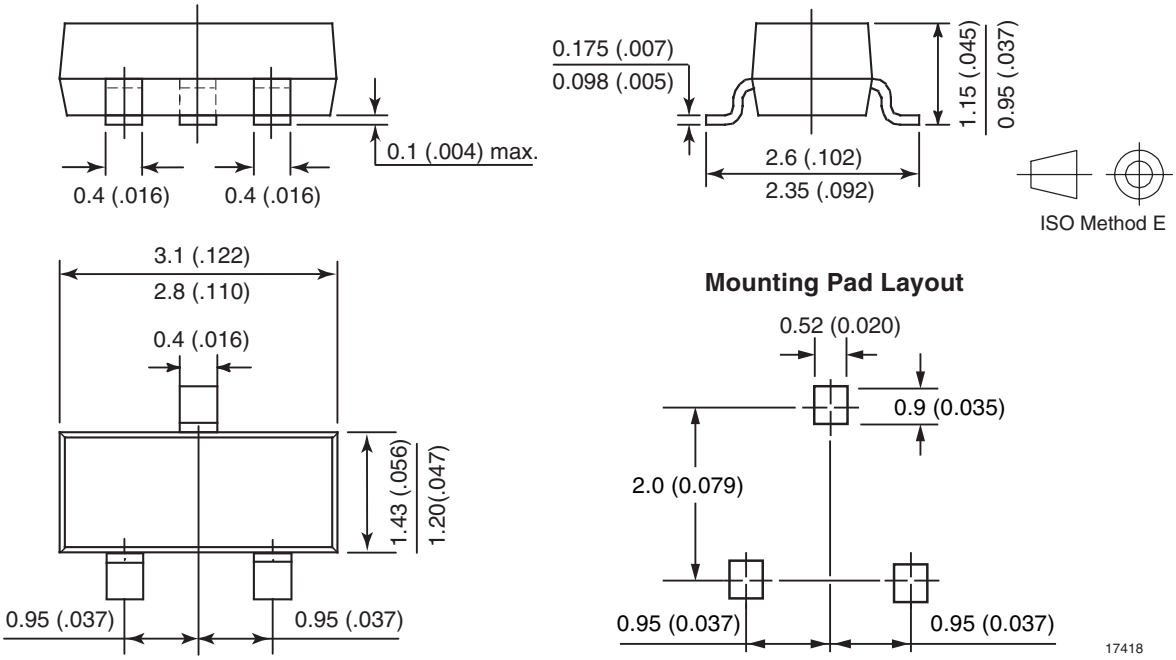


Figure 3. Admissible Power Dissipation vs. Ambient Temperature

Package Dimensions in mm (Inches)



Ozone Depleting Substances Policy Statement

It is the policy of Vishay Semiconductor GmbH to

1. Meet all present and future national and international statutory requirements.
2. Regularly and continuously improve the performance of our products, processes, distribution and operating systems with respect to their impact on the health and safety of our employees and the public, as well as their impact on the environment.

It is particular concern to control or eliminate releases of those substances into the atmosphere which are known as ozone depleting substances (ODSs).

The Montreal Protocol (1987) and its London Amendments (1990) intend to severely restrict the use of ODSs and forbid their use within the next ten years. Various national and international initiatives are pressing for an earlier ban on these substances.

Vishay Semiconductor GmbH has been able to use its policy of continuous improvements to eliminate the use of ODSs listed in the following documents.

1. Annex A, B and list of transitional substances of the Montreal Protocol and the London Amendments respectively
2. Class I and II ozone depleting substances in the Clean Air Act Amendments of 1990 by the Environmental Protection Agency (EPA) in the USA
3. Council Decision 88/540/EEC and 91/690/EEC Annex A, B and C (transitional substances) respectively.

Vishay Semiconductor GmbH can certify that our semiconductors are not manufactured with ozone depleting substances and do not contain such substances.

Vishay Semiconductor GmbH, P.O.B. 3535, D-74025 Heilbronn, Germany

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