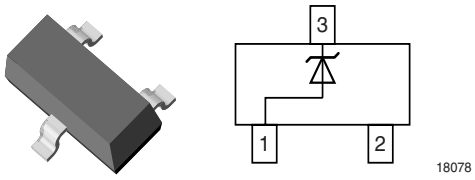
Small Signal Zener Diodes

Features

- Silicon Planar Power Zener Diodes.
- Standard Zener voltage tolerance is ± 5 % tolerance with a "B" suffix and ± 2 % with suffix "C".
- High temperature soldering guaranteed: 250 °C/10 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... MMSZ5267.



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

2) Valid provided case is kept at ambient temperature.

3) Measured at thermal equilibrium.

Typical Characteristics (T_{amb} = 25 °C unless otherwise specified)

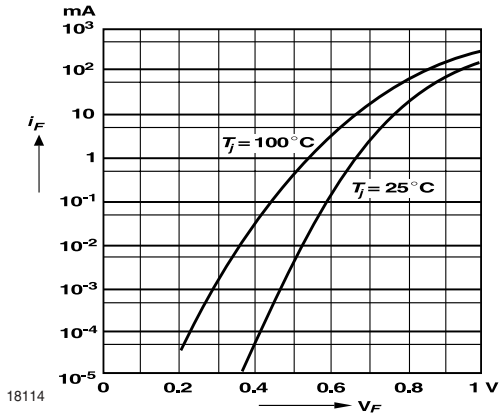


Figure 1. Forward characteristics

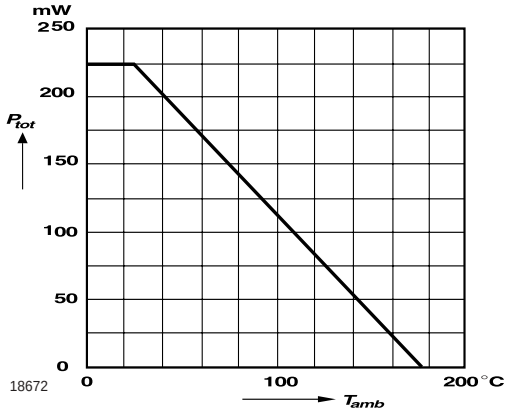


Figure 3. Admissible Power Dissipation vs. Ambient Temperature

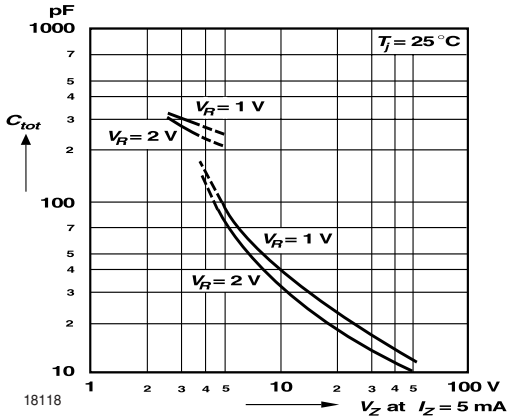


Figure 2. Capacitance vs. Zener Voltage

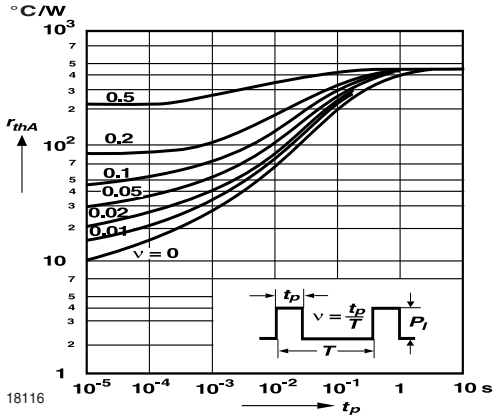
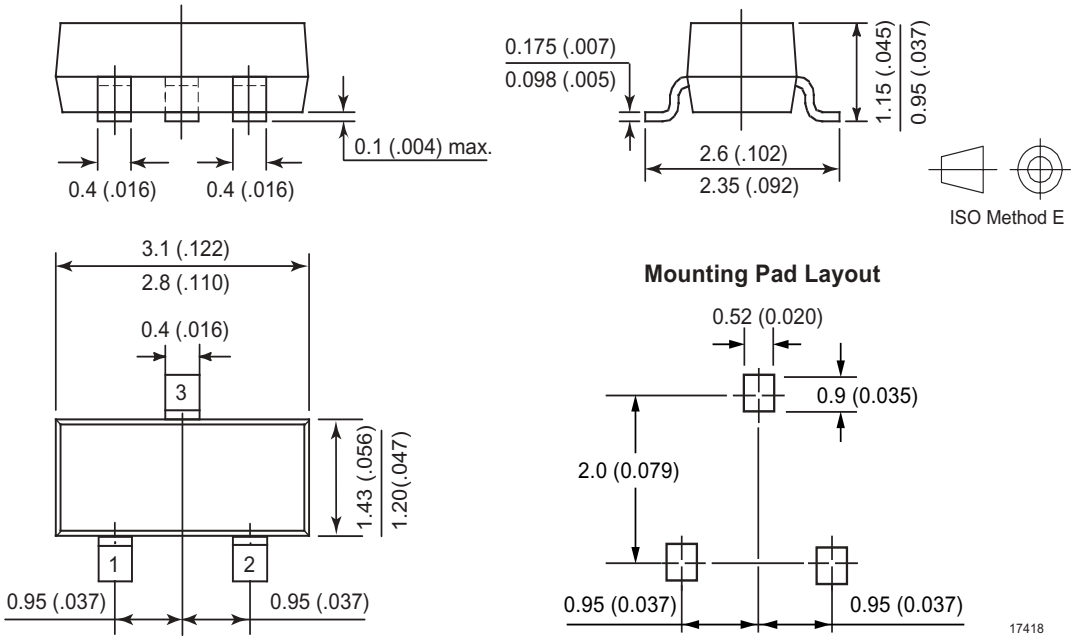


Figure 4. Pulse Thermal Resistance vs. Pulse Duration

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 operatingsystems 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.

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