

MM1Z5221BH~MM1Z5267BH

SILICON PLANAR ZENER DIODES

Lead free product

Halogen - free type

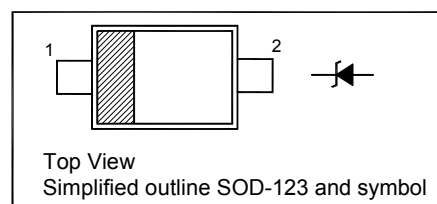
Silicon Planar Zener Diode in a small plastic
SMD SOD-123 package

Features

- Total power dissipation: Max. 500 mW
- Small plastic package suitable for surface mounted design
- Tolerance approximately $\pm 5\%$

PINNING

PIN	DESCRIPTION
1	Cathode
2	Anode



Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

Parameter	Symbol	Value	Unit
Total Power Dissipation	P_{tot}	500	mW
Operating Junction and Storage Temperature Range	T_j, T_s	- 55 to + 150	$^\circ\text{C}$

Characteristics at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Max.	Unit
Thermal Resistance Junction to Ambient Air	$R_{\theta JA}$	350	$^\circ\text{C/W}$
Forward Voltage at $I_F = 10\text{ mA}$	V_F	0.9	V

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Type	Marking Code	Zener Voltage Range ^{1), 2)}			Maximum Zener Impedance ³⁾			Maximum Reverse Current	
		V _{znom}	I _{ZT} for	V _{ZT}	r _{ZJT}	r _{ZJK}	at I _{ZK}	I _R at	V _R
		V	mA	V	Ω	Ω	mA	μA	V
MM1Z5221BH	A4	2.4	20	2.28...2.52	30	1200	0.25	100	1
MM1Z5223BH	B4	2.7	20	2.57...2.84	30	1300	0.25	75	1
MM1Z5225BH	C4	3.0	20	2.85...3.15	29	1600	0.25	50	1
MM1Z5226BH	D4	3.3	20	3.14...3.47	28	1600	0.25	25	1
MM1Z5227BH	E4	3.6	20	3.42...3.78	24	1700	0.25	15	1
MM1Z5228BH	F4	3.9	20	3.71...4.1	23	1900	0.25	10	1
MM1Z5229BH	H4	4.3	20	4.09...4.52	22	2000	0.25	5	1
MM1Z5230BH	J4	4.7	20	4.47...4.94	19	1900	0.25	5	2
MM1Z5231BH	K4	5.1	20	4.85...5.36	17	1600	0.25	5	2
MM1Z5232BH	M4	5.6	20	5.32...5.88	11	1600	0.25	5	3
MM1Z5234BH	N4	6.2	20	5.89...6.51	7	1000	0.25	5	4
MM1Z5235BH	P4	6.8	20	6.46...7.14	5	750	0.25	3	5
MM1Z5236BH	R4	7.5	20	7.13...7.88	6	500	0.25	3	6
MM1Z5237BH	X4	8.2	20	7.79...8.61	8	500	0.25	3	6.5
MM1Z5239BH	Y4	9.1	20	8.65...9.56	10	600	0.25	3	7
MM1Z5240BH	Z4	10	20	9.5...10.5	17	600	0.25	3	8
MM1Z5241BH	A5	11	20	10.45...11.55	22	600	0.25	2	8.4
MM1Z5242BH	B5	12	20	11.4...12.6	30	600	0.25	1	9.1
MM1Z5243BH	C5	13	9.5	12.35...13.65	13	600	0.25	0.5	9.9
MM1Z5245BH	D5	15	8.5	14.25...15.75	16	600	0.25	0.1	11
MM1Z5246BH	E5	16	7.8	15.2...16.8	17	600	0.25	0.1	12
MM1Z5248BH	F5	18	7	17.1...18.9	21	600	0.25	0.1	14
MM1Z5249BH	K9	19	6.6	18.05...19.95	23	600	0.25	0.1	14
MM1Z5250BH	H5	20	6.2	19...21	25	600	0.25	0.1	15
MM1Z5251BH	J5	22	5.6	20.9...23.1	29	600	0.25	0.1	17
MM1Z5252BH	K5	24	5.2	22.8...25.2	33	600	0.25	0.1	18
MM1Z5253BH	M9	25	5	23.75...26.25	35	600	0.25	0.1	19
MM1Z5254BH	M5	27	4.6	25.65...28.35	41	600	0.25	0.1	21
MM1Z5256BH	N5	30	4.2	28.5...31.5	49	600	0.25	0.1	23
MM1Z5257BH	P5	33	3.8	31.35...34.65	58	700	0.25	0.1	25
MM1Z5258BH	R5	36	3.4	34.2...37.8	70	700	0.25	0.1	27
MM1Z5259BH	X5	39	3.2	37.05...40.95	80	800	0.25	0.1	30
MM1Z5260BH	Y5	43	3	40.85...45.15	93	900	0.25	0.1	33
MM1Z5261BH	Z5	47	2.7	44.65...49.35	105	1000	0.25	0.1	36
MM1Z5262BH	A6	51	2.5	48.45...53.55	125	1100	0.25	0.1	39
MM1Z5263BH	B6	56	2.2	53.2...58.8	150	1300	0.25	0.1	43
MM1Z5265BH	C6	62	2	58.9...65.1	185	1400	0.25	0.1	47
MM1Z5266BH	D6	68	1.8	64.6...71.4	230	1600	0.25	0.1	52
MM1Z5267BH	E6	75	1.7	71.25...78.75	270	1700	0.25	0.1	56

¹⁾ V_Z is tested with pulses (20 ms)

²⁾ Nominal Zener voltage is measured with the device junction in thermal equilibrium at T_L = 30 °C ± 1 °C.

³⁾ Z_{JT} and Z_{JK} 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 the AC frequency = 1 KHz.

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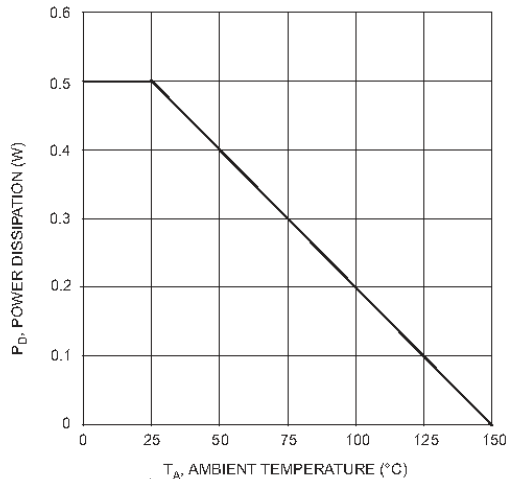


Fig. 1 Power Dissipation vs Ambient Temperature

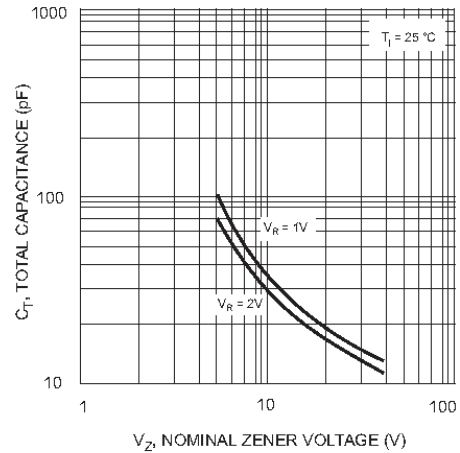


Fig. 2 Total Capacitance vs Nominal Zener Voltage

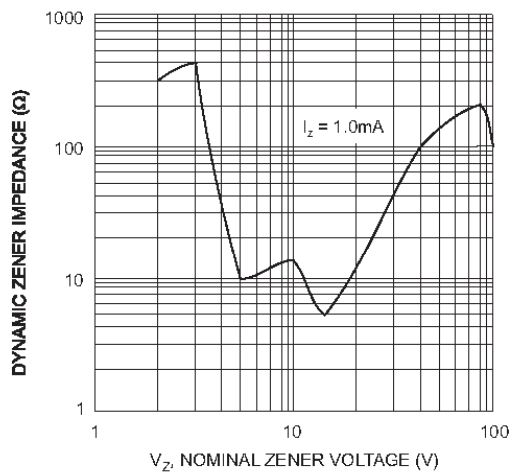


Fig. 3 Zener Voltage vs. Zener Impedance

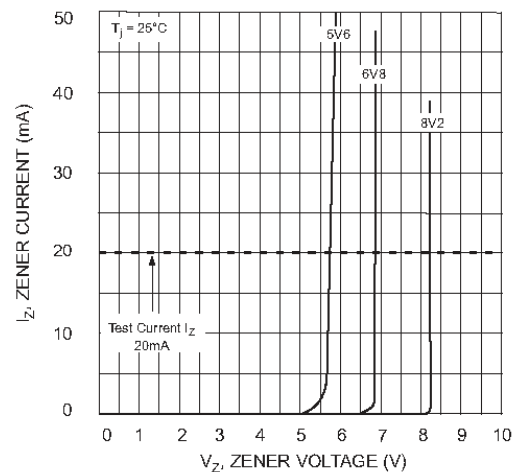


Fig. 4 Zener Breakdown Characteristics

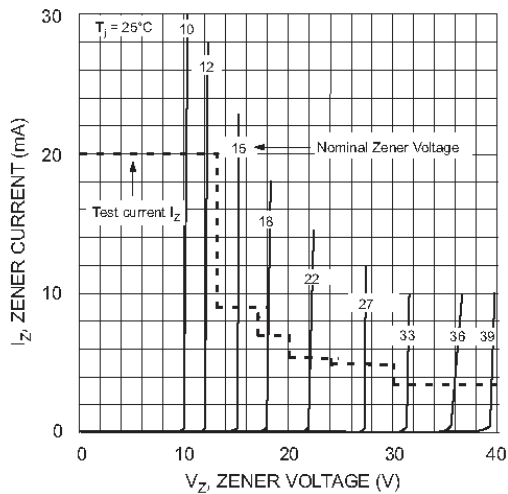


Fig. 5 Zener Breakdown Characteristics