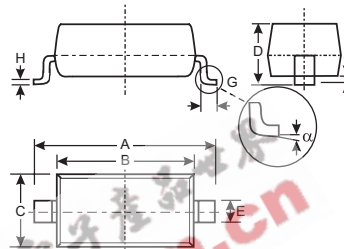


### Features

- 500mW Power Dissipation
- General Purpose, Medium Current
- Ideally Suited for Automated Assembly Processes
- **Lead Free/RoHS Compliant (Note 2)**
- **Qualified to AEC-Q101 Standards for High Reliability**

### Mechanical Data

- Case: SOD-123
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe)
- Polarity: Cathode Band
- Ordering Information: See Page 2
- Marking: See Below
- Weight: 0.01 grams (approximate)



SOD-123		
Dim	Min	Max
A	3.55	3.85
B	2.55	2.85
C	1.40	1.70
D	—	1.35
E	0.45	0.65
	0.55 Typical	
G	0.25	—
H	0.11 Typical	
J	—	0.10
$\alpha$	0°	8°
All Dimensions in mm		

### Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Value	Unit
Forward Voltage @ $I_F = 10\text{mA}$	$V_F$	0.9	V
Power Dissipation (Note 1)	$P_d$	500	mW
Thermal Resistance, Junction to Ambient Air (Note 1)	$R_{\theta JA}$	350	$^\circ\text{C/W}$
Operating and Storage Temperature Range	$T_j, T_{STG}$	-65 to +150	$^\circ\text{C}$

- Notes: 1. Device mounted on ceramic PCB; 7.6 mm x 9.4 mm x 0.87 mm with pad areas 25 mm<sup>2</sup>.  
2. No purposefully added lead.

### Marking Information



XX = Product Type Marking Code (See Page 2)  
YM = Date Code Marking  
Y = Year (ex: N = 2002)  
M = Month (ex: 9 = September)

#### Date Code Key

Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Code	J	K	L	M	N	P	R	S	T	U	V	W

Month	Jan	Feb	March	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

## Electrical Characteristics @ T<sub>A</sub> = 25°C unless otherwise specified

Type Number	Type Code	Zener Voltage Range (Note 4)			Test Current	Maximum Zener Impedance (Note 3)		Maximum Reverse Leakage Current (Note 4)	
		V <sub>Z</sub> @ I <sub>ZT</sub>				I <sub>ZT</sub>	Z <sub>ZT</sub> @ I <sub>ZT</sub>	Z <sub>ZK</sub> @ I <sub>ZK</sub> = 0.25mA	I <sub>R</sub>
		Nom (V)	Min (V)	Max (V)	mA				
MMSZ5221B	C1, <u>C</u> 1	2.4	2.28	2.52	20	30	1200	100	1.0
MMSZ5223B	C3, <u>C</u> 3	2.7	2.57	2.84	20	30	1300	75	1.0
MMSZ5225B	C5, <u>C</u> 5	3.0	2.85	3.15	20	30	1600	50	1.0
MMSZ5226B	G1, <u>G</u> 1	3.3	3.14	3.47	20	28	1600	25	1.0
MMSZ5227B	G2, <u>G</u> 2	3.6	3.42	3.78	20	24	1700	15	1.0
MMSZ5228B	G3, <u>G</u> 3	3.9	3.71	4.10	20	23	1900	10	1.0
MMSZ5229B	G4, <u>G</u> 4	4.3	4.09	4.52	20	22	2000	5.0	1.0
MMSZ5230B	G5, <u>G</u> 5	4.7	4.47	4.94	20	19	1900	5.0	2.0
MMSZ5231B	E1, <u>E</u> 1	5.1	4.85	5.36	20	17	1600	5.0	2.0
MMSZ5232B	E2, <u>E</u> 2	5.6	5.32	5.88	20	11	1600	5.0	3.0
MMSZ5233B	E3, <u>E</u> 3	6.0	5.70	6.30	20	7	1600	5.0	3.5
MMSZ5234B	E4, <u>E</u> 4	6.2	5.89	6.51	20	7	1000	5.0	4.0
MMSZ5235B	E5, <u>E</u> 5	6.8	6.46	7.14	20	5	750	3.0	5.0
MMSZ5236B	F1, <u>F</u> 1	7.5	7.13	7.88	20	6	500	3.0	6.0
MMSZ5237B	F2, <u>F</u> 2	8.2	7.79	8.61	20	8	500	3.0	6.5
MMSZ5238B	F3, <u>F</u> 3	8.7	8.27	9.14	20	8	600	3.0	6.5
MMSZ5239B	F4, <u>F</u> 4	9.1	8.65	9.56	20	10	600	3.0	7.0
MMSZ5240B	F5, <u>F</u> 5	10	9.50	10.50	20	17	600	3.0	8.0
MMSZ5241B	H1, <u>H</u> 1	11	10.45	11.55	20	22	600	2.0	8.4
MMSZ5242B	H2, <u>H</u> 2	12	11.40	12.60	20	30	600	1.0	9.1
MMSZ5243B	H3, <u>H</u> 3	13	12.35	13.65	9.5	13	600	0.5	9.9
MMSZ5245B	H5, <u>H</u> 5	15	14.25	15.75	8.5	16	600	0.1	11
MMSZ5246B	J1, <u>J</u> 1	16	15.20	16.80	7.8	17	600	0.1	12
MMSZ5248B	J3, <u>J</u> 3	18	17.10	18.90	7.0	21	600	0.1	14
MMSZ5250B	J5, <u>J</u> 5	20	19.00	21.00	6.2	25	600	0.1	15
MMSZ5251B	K1, <u>K</u> 1	22	20.90	23.10	5.6	29	600	0.1	17
MMSZ5252B	K2, <u>K</u> 2	24	22.80	25.20	5.2	33	600	0.1	18
MMSZ5254B	K4, <u>K</u> 4	27	25.65	28.35	5.0	41	600	0.1	21
MMSZ5255B	K5, <u>K</u> 5	28	26.60	29.40	4.5	44	600	0.1	21
MMSZ5256B	M1, <u>M</u> 1	30	28.50	31.50	4.2	49	600	0.1	23
MMSZ5257B	M2, <u>M</u> 2	33	31.35	34.65	3.8	58	700	0.1	25
MMSZ5258B	M3, <u>M</u> 3	36	34.20	37.80	3.4	70	700	0.1	27
MMSZ5259B	M4, <u>M</u> 4	39	37.05	40.95	3.2	80	800	0.1	30

- Notes: 3. f = 1KHz.  
4. Short duration test pulse used to minimize self-heating effect.

## Ordering Information (Note 5)

Device	Packaging	Shipping
(Type Number)-7-F*	SOD-123	3000/Tape & Reel

\* Add "-7-F" to the appropriate type number in Table 1 above example: 6.2V Zener = MMSZ5234B-7-F.  
Notes: 5. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

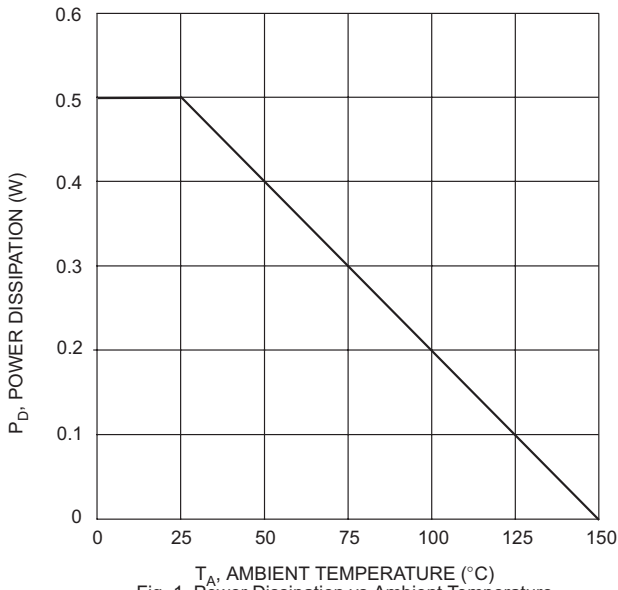


Fig. 1 Power Dissipation vs Ambient Temperature

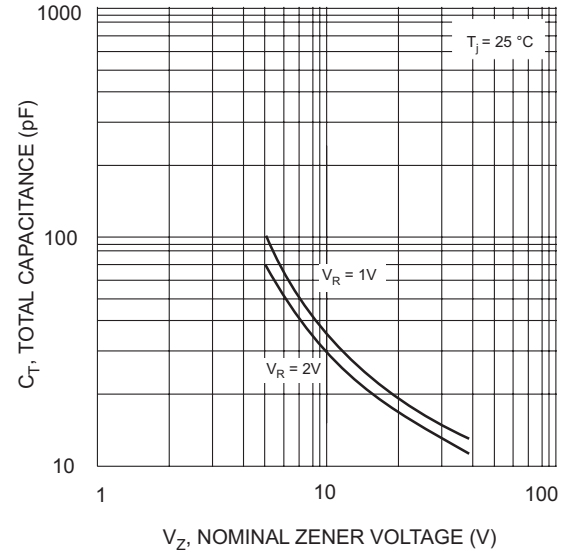


Fig. 2 Total Capacitance vs Nominal Zener Voltage

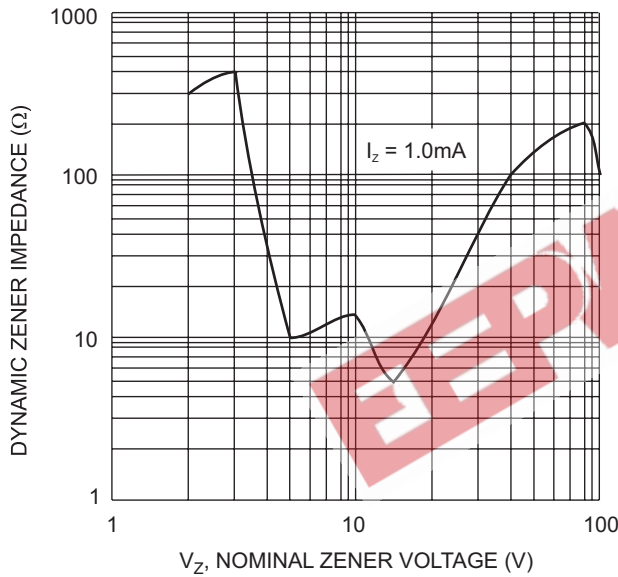


Fig. 3 Zener Voltage vs. Zener Impedance

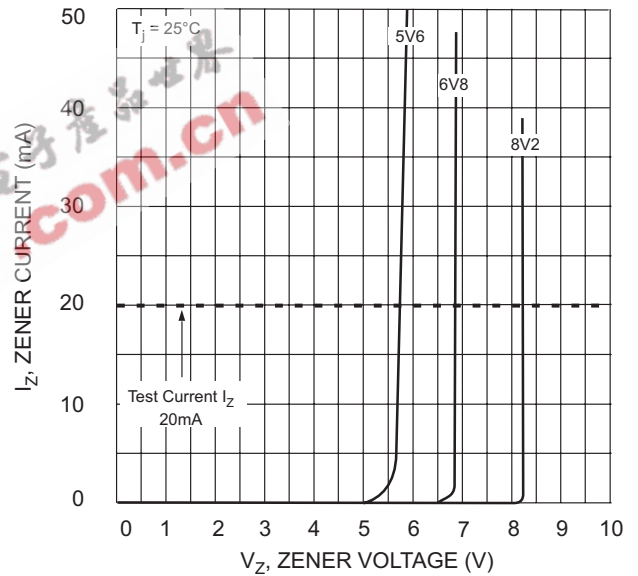


Fig. 4 Zener Breakdown Characteristics

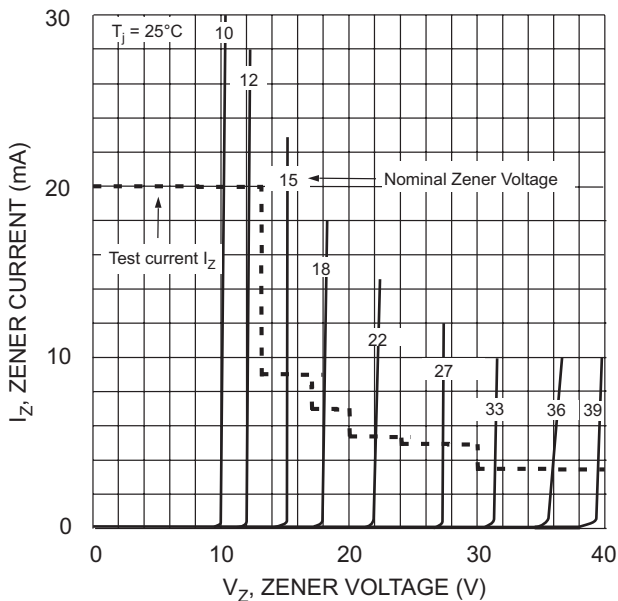


Fig. 5 Zener Breakdown Characteristics

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