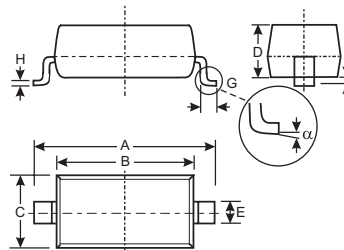


### Features

- Planar Die Construction
- 500mW Power Dissipation on Ceramic PCB
- 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
- 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°
<b>All Dimensions in mm</b>		

### Maximum Ratings @ T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Forward Voltage @ I <sub>F</sub> = 10mA	V <sub>F</sub>	0.9	V
Power Dissipation (Note 1)	P <sub>d</sub>	500	mW
Thermal Resistance, Junction to Ambient Air (Note 1)	R <sub>θJA</sub>	250	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +150	°C

Notes: 1. Device mounted on ceramic PCB; 7.6mm x 9.4mm x 0.87mm with pad areas 25mm<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 (Note 3)	Marking Codes	Zener Voltage Range (Note 4)				Maximum Zener Impedance (Note 3)			Maximum Reverse Current (Note 4)		Typical Temperature Coefficient @ I <sub>ZT</sub> mV/°C		Test Current I <sub>ZT</sub>
		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>	I <sub>ZK</sub>	I <sub>R</sub>	@ V <sub>R</sub>	Min	Max	
		Nom (V)	Min (V)	Max (V)	mA	Ω	mA	uA	V	mA			
BZT52C2V0	WY, <u>W</u> Y	2.0	1.91	2.09	5	100	600	1.0	150	1.0	-3.5	0	5
BZT52C2V4	WX, <u>W</u> X	2.4	2.2	2.6	5	100	600	1.0	50	1.0	-3.5	0	5
BZT52C2V7	W1, <u>W</u> 1	2.7	2.5	2.9	5	100	600	1.0	20	1.0	-3.5	0	5
BZT52C3V0	W2, <u>W</u> 2	3.0	2.8	3.2	5	95	600	1.0	10	1.0	-3.5	0	5
BZT52C3V3	W3, <u>W</u> 3	3.3	3.1	3.5	5	95	600	1.0	5.0	1.0	-3.5	0	5
BZT52C3V6	W4, <u>W</u> 4	3.6	3.4	3.8	5	90	600	1.0	5.0	1.0	-3.5	0	5
BZT52C3V9	W5, <u>W</u> 5	3.9	3.7	4.1	5	90	600	1.0	3.0	1.0	-3.5	0	5
BZT52C4V3	W6, <u>W</u> 6, UB	4.3	4.0	4.6	5	90	600	1.0	3.0	1.0	-3.5	0	5
BZT52C4V7	W7, <u>W</u> 7	4.7	4.4	5.0	5	80	500	1.0	3.0	2.0	-3.5	0.2	5
BZT52C5V1	W8, <u>W</u> 8	5.1	4.8	5.4	5	60	480	1.0	2.0	2.0	-2.7	1.2	5
BZT52C5V6	W9, <u>W</u> 9	5.6	5.2	6.0	5	40	400	1.0	1.0	2.0	-2	2.5	5
BZT52C6V2	WA, <u>W</u> A	6.2	5.8	6.6	5	10	150	1.0	3.0	4.0	0.4	3.7	5
BZT52C6V8	WB, <u>W</u> B	6.8	6.4	7.2	5	15	80	1.0	2.0	4.0	1.2	4.5	5
BZT52C7V5	WC, <u>W</u> C	7.5	7.0	7.9	5	15	80	1.0	1.0	5.0	2.5	5.3	5
BZT52C8V2	WD, <u>W</u> D	8.2	7.7	8.7	5	15	80	1.0	0.7	5.0	3.2	6.2	5
BZT52C9V1	WE, <u>W</u> E	9.1	8.5	9.6	5	15	100	1.0	0.5	6.0	3.8	7.0	5
BZT52C10	WF, <u>W</u> F	10	9.4	10.6	5	20	150	1.0	0.2	7.0	4.5	8.0	5
BZT52C11	WG, <u>W</u> G	11	10.4	11.6	5	20	150	1.0	0.1	8.0	5.4	9.0	5
BZT52C12	WH, <u>W</u> H	12	11.4	12.7	5	25	150	1.0	0.1	8.0	6.0	10.0	5
BZT52C13	WI, <u>W</u> I	13	12.4	14.1	5	30	170	1.0	0.1	8.0	7.0	11.0	5
BZT52C15	WJ, <u>W</u> J	15	13.8	15.6	5	30	200	1.0	0.1	10.5	9.2	13.0	5
BZT52C16	WK, <u>W</u> K	16	15.3	17.1	5	40	200	1.0	0.1	11.2	10.4	14.0	5
BZT52C18	WL, <u>W</u> L	18	16.8	19.1	5	45	225	1.0	0.1	12.6	12.4	16.0	5
BZT52C20	WM, <u>W</u> M	20	18.8	21.2	5	55	225	1.0	0.1	14.0	14.4	18.0	5
BZT52C22	WN, <u>W</u> N	22	20.8	23.3	5	55	250	1.0	0.1	15.4	16.4	20.0	5
BZT52C24	WO, <u>W</u> O	24	22.8	25.6	5	70	250	1.0	0.1	16.8	18.4	22.0	5
BZT52C27	WP, <u>W</u> P	27	25.1	28.9	2	80	300	0.5	0.1	18.9	21.4	25.3	2
BZT52C30	WQ, <u>W</u> Q	30	28.0	32.0	2	80	300	0.5	0.1	21.0	24.4	29.4	2
BZT52C33	WR, <u>W</u> R	33	31.0	35.0	2	80	325	0.5	0.1	23.1	27.4	33.4	2
BZT52C36	WS, <u>W</u> S	36	34.0	38.0	2	90	350	0.5	0.1	25.2	30.4	37.4	2
BZT52C39	WT, <u>W</u> T	39	37.0	41.0	2	130	350	0.5	0.1	27.3	33.4	41.2	2

- Notes:
1. Device mounted on ceramic PCB; 7.6mm x 9.4mm x 0.87mm with pad areas 25mm<sup>2</sup>.
  2. No purposefully added lead.
  3. f = 1kHz.
  4. Short duration pulse test 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 = BZT52C6V2-7-F.

- Notes:
5. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

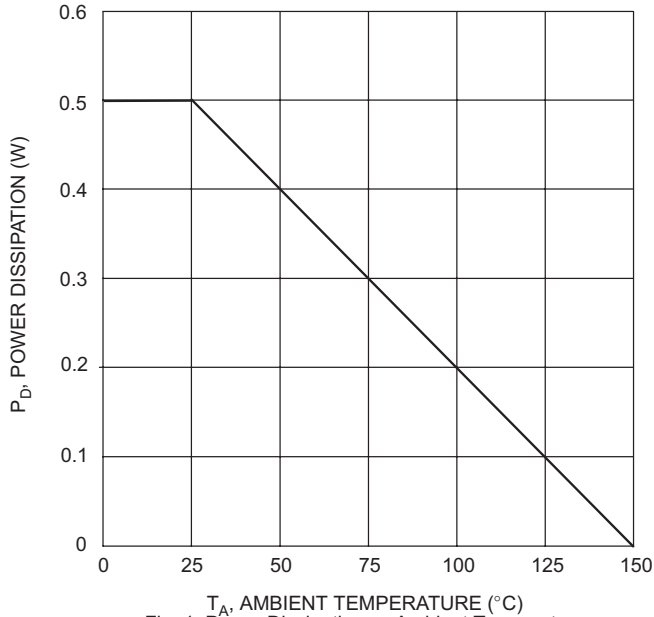


Fig. 1 Power Dissipation vs Ambient Temperature

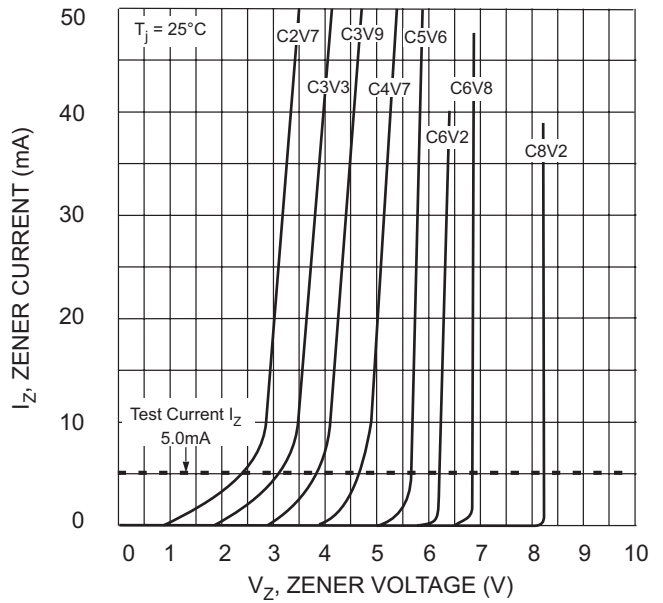


Fig. 2 Zener Breakdown Characteristics

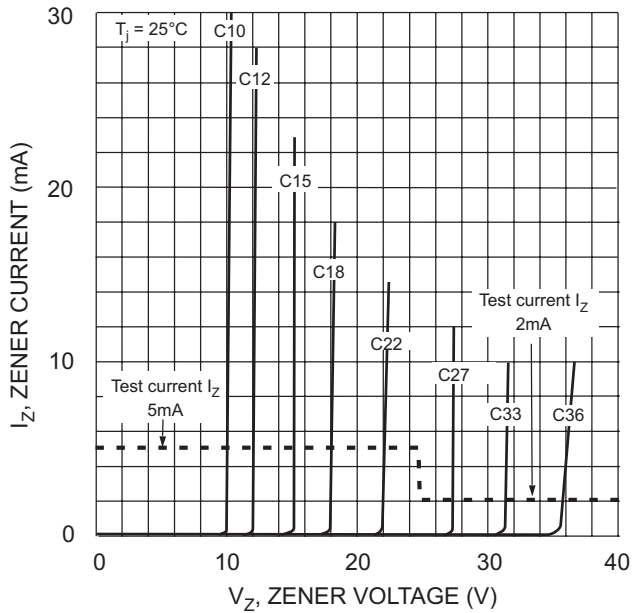


Fig. 3 Zener Breakdown Characteristics

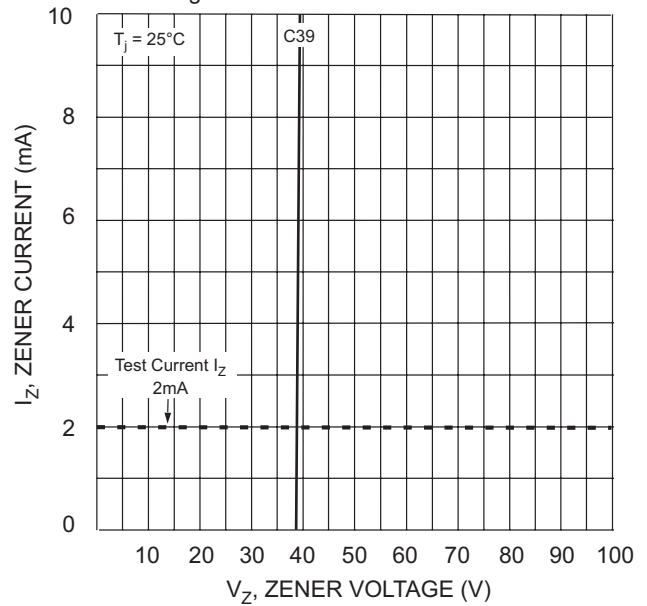


Fig. 4 Zener Breakdown Characteristics

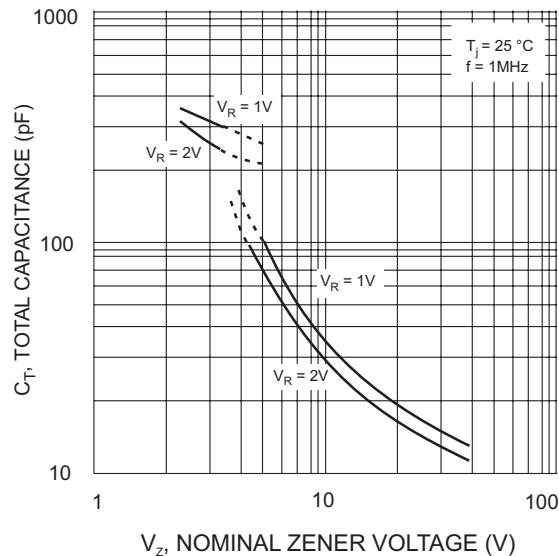


Fig. 5 Total Capacitance vs Nominal Zener Voltage

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