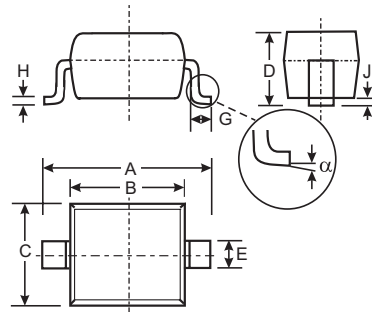


### Features

- Planar Die Construction
- Ultra-Small Surface Mount Package
- Ideally suited for Automated Assembly Processes
- **Lead Free/RoHS Compliant (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**

### Mechanical Data

- Case: SOD-323
- 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 Sheet 2
- Weight: 0.004 grams (approximate)



SOD-323		
Dim	Min	Max
A	2.30	2.70
B	1.60	1.80
C	1.20	1.40
D	1.05 Typical	
E	0.25	0.35
G	0.20	0.40
H	0.10	0.15
J	0.05 Typical	
$\alpha$	0°	8°
All Dimensions in mm		

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

Characteristic	Symbol	Value	Unit
Forward Voltage (Note 2) @ I <sub>F</sub> = 10mA	V <sub>F</sub>	0.9	V
Power Dissipation (Note 1)	P <sub>d</sub>	200	mW
Thermal Resistance, Junction to Ambient Air (Note 1)	R <sub>θJA</sub>	625	°C/W
Operating and Storage Temperature Range	T <sub>j</sub> , T <sub>STG</sub>	-65 to +150	°C

- Notes:
1. Part mounted on FR-4 PC board with recommended pad layout, as per <http://www.diodes.com/datasheets/ap02001.pdf>.
  2. Short duration test pulse used in minimize self-heating effect.
  3. No purposefully added lead.

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

Type Number	Marking Code	Zener Voltage Range (Note 2)				Maximum Zener Impedance (Note 4)			Maximum Reverse Current (Note 2)		Temperature Coefficient of Zener Voltage @ I <sub>ZT</sub> = 5mA mV/°C	
		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		
BZT52C2V0S	WY, <u>WY</u>	2.0	1.91	2.09	5	100	600	1.0	150	1.0	-3.5	0
BZT52C2V4S	WX, <u>WX</u>	2.4	2.20	2.60	5	100	600	1.0	50	1.0	-3.5	0
BZT52C2V7S	W1, <u>W1</u>	2.7	2.5	2.9	5	100	600	1.0	20	1.0	-3.5	0
BZT52C3V0S	W2, <u>W2</u>	3.0	2.8	3.2	5	95	600	1.0	10	1.0	-3.5	0
BZT52C3V3S	W3, <u>W3</u>	3.3	3.1	3.5	5	95	600	1.0	5	1.0	-3.5	0
BZT52C3V6S	W4, <u>W4</u>	3.6	3.4	3.8	5	90	600	1.0	5	1.0	-3.5	0
BZT52C3V9S	W5, <u>W5</u>	3.9	3.7	4.1	5	90	600	1.0	3	1.0	-3.5	0
BZT52C4V3S	W6, <u>W6</u>	4.3	4.0	4.6	5	90	600	1.0	3	1.0	-3.5	0
BZT52C4V7S	W7, <u>W7</u>	4.7	4.4	5.0	5	80	500	1.0	3	2.0	-3.5	0.2
BZT52C5V1S	W8, <u>W8</u>	5.1	4.8	5.4	5	60	480	1.0	2	2.0	-2.7	1.2
BZT52C5V6S	W9, <u>W9</u>	5.6	5.2	6.0	5	40	400	1.0	1	2.0	-2.0	2.5
BZT52C6V2S	WA, <u>WA</u>	6.2	5.8	6.6	5	10	150	1.0	3	4.0	0.4	3.7
BZT52C6V8S	WB, <u>WB</u>	6.8	6.4	7.2	5	15	80	1.0	2	4.0	1.2	4.5
BZT52C7V5S	WC, <u>WC</u> , <u>BF</u>	7.5	7.0	7.9	5	15	80	1.0	1	5.0	2.5	5.3
BZT52C8V2S	WD, <u>WD</u>	8.2	7.7	8.7	5	15	80	1.0	0.7	5.0	3.2	6.2
BZT52C9V1S	WE, <u>WE</u>	9.1	8.5	9.6	5	15	100	1.0	0.5	6.0	3.8	7.0
BZT52C10S	WF, <u>WF</u>	10	9.4	10.6	5	20	150	1.0	0.2	7.0	4.5	8.0
BZT52C11S	WG, <u>WG</u>	11	10.4	11.6	5	20	150	1.0	0.1	8.0	5.4	9.0
BZT52C12S	WH, <u>WH</u>	12	11.4	12.7	5	25	150	1.0	0.1	8.0	6.0	10.0
BZT52C13S	WI, <u>WI</u>	13	12.4	14.1	5	30	170	1.0	0.1	8.0	7.0	11.0
BZT52C15S	WJ, <u>WJ</u>	15	13.8	15.6	5	30	200	1.0	0.1	10.5	9.2	13.0
BZT52C16S	WK, <u>WK</u>	16	15.3	17.1	5	40	200	1.0	0.1	11.2	10.4	14.0
BZT52C18S	WL, <u>WL</u>	18	16.8	19.1	5	45	225	1.0	0.1	12.6	12.4	16.0
BZT52C20S	WM, <u>WM</u>	20	18.8	21.2	5	55	225	1.0	0.1	14.0	14.4	18.0
BZT52C22S	WN, <u>WN</u>	22	20.8	23.3	5	55	250	1.0	0.1	15.4	16.4	20.0
BZT52C24S	WO, <u>WO</u>	24	22.8	25.6	5	70	250	1.0	0.1	16.8	18.4	22.0
BZT52C27S	WP, <u>WP</u>	27	25.1	28.9	2	80	300	0.5	0.1	18.9	21.4	25.3
BZT52C30S	WQ, <u>WQ</u>	30	28.0	32.0	2	80	300	0.5	0.1	21.0	24.4	29.4
BZT52C33S	WR, <u>WR</u>	33	31.0	35.0	2	80	325	0.5	0.1	23.1	27.4	33.4
BZT52C36S	WS, <u>WS</u>	36	34.0	38.0	2	90	350	0.5	0.1	25.2	30.4	37.4
BZT52C39S	WT, <u>WT</u>	39	37.0	41.0	2	130	350	0.5	0.1	27.3	33.4	41.2

- Notes: 2. Short duration test pulse used to minimize self-heating effect.  
3. No purposefully added lead.  
4. f = 1kHz.

## Ordering Information (Note 5)

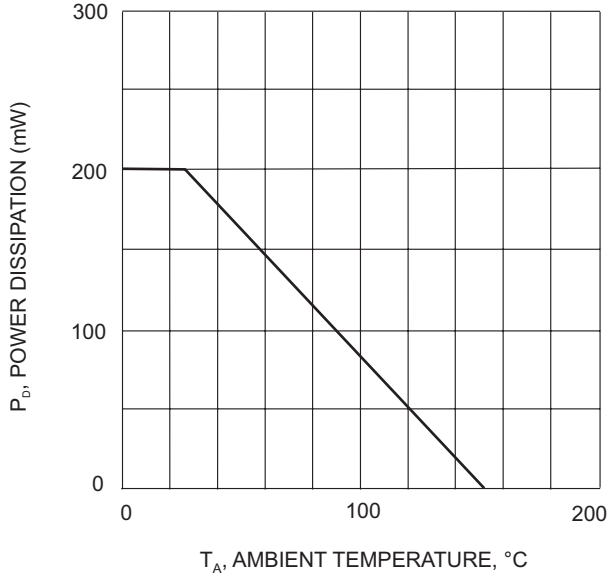
Device	Packaging	Shipping
(Type Number)-7-F	SOD-323	3000/Tape & Reel

- Notes: 5. \*Add "-7-F" to the appropriate type number in Table 1 above example: 6.2V Zener = BZT52C6V2S-7-F.  
6. For Packaging Details, go to our website at: <http://www.diodes.com/datasheets/ap02007.pdf>.

## Marking Information



XX = Product Type Marking Code  
(See Table Above)



$T_A$ , AMBIENT TEMPERATURE, °C  
Fig. 1. Power Derating Curve

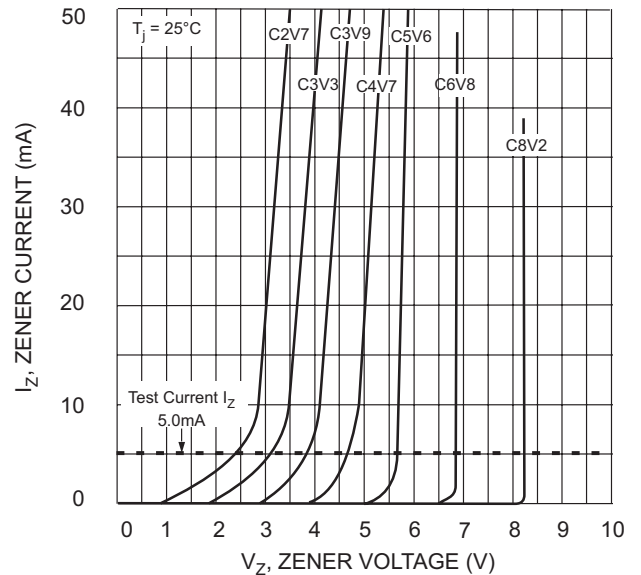


Fig. 2. Zener Breakdown Characteristics

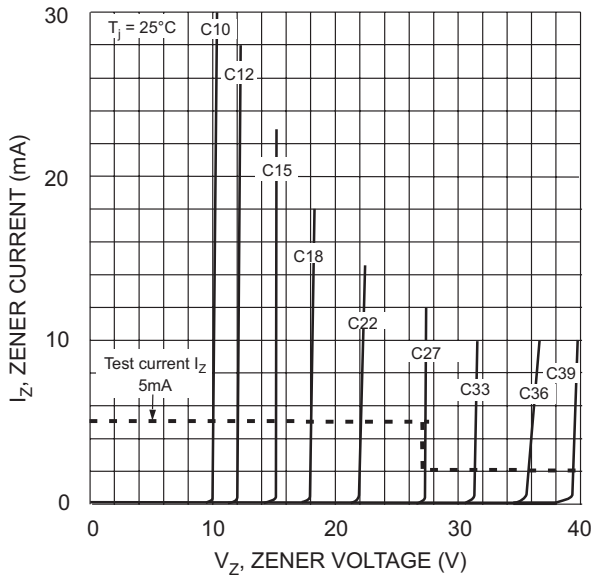


Fig. 3. Zener Breakdown Characteristics

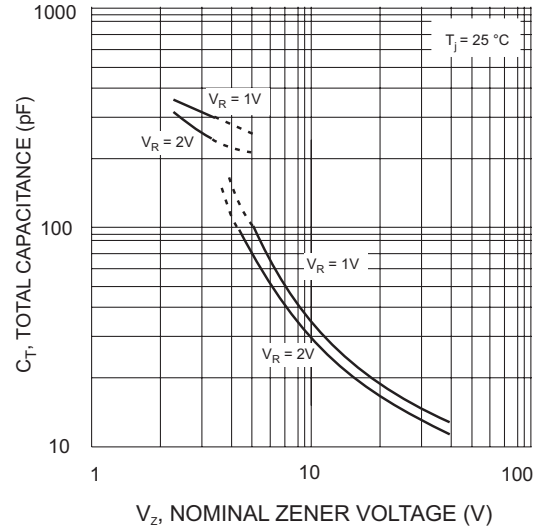


Fig. 4. Total Capacitance vs Nominal Zener Voltage

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