

## Surface Mount Silicon Zener Diodes

BZT52C2V4~BZT52C75

2.4 to 75 V

350mW

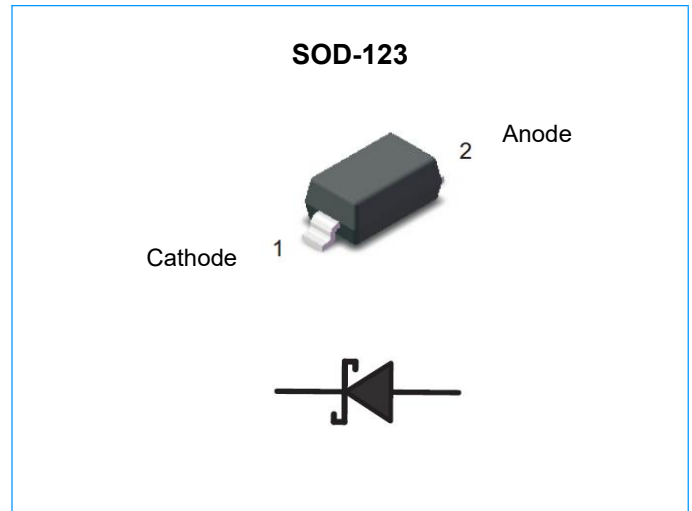
SOD-123

### Features

- ◆ Planar Die construction
- ◆ 410mW Power Dissipation
- ◆ Zener Voltages from 2.4~75V
- ◆ Ideally Suited for Automated Assembly Processes
- ◆ Lead free in compliance with EU RoHS 2.0
- ◆ Green molding compound as per IEC 61249 standard

### Mechanical Data

- ◆ Case: SOD-123, Molded Plastic
- ◆ Terminals: Solderable per MIL-STD-750, Method 2026
- ◆ Polarity: See Diagram Below
- ◆ Approx. Weight: 0.0004 ounces, 0.01 grams



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

Parameter	Symbol	Value	Units
Power Dissipation (Note 1)	$P_D$	350	mW
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	357	$^{\circ}\text{C}/\text{W}$
Junction Temperature	$T_J$	150	$^{\circ}\text{C}$
Storage Temperature	$T_{STG}$	-55 to +150	$^{\circ}\text{C}$

Note1: Device mounted on ceramic PCB: 7.6mm x 9.4mm x 0.87mm with pad areas 25mm<sup>2</sup>.

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### Electrical Characteristics

Part Number	Zener Voltage Range (Note 2)			Maximum Zener Impedance (Note 3)				Maximum Leakage Current (Note 2)	
	V <sub>Z</sub> @ I <sub>ZT</sub>			Z <sub>VT</sub> @ I <sub>ZT</sub>		Z <sub>ZK</sub> @ I <sub>ZK</sub>		I <sub>R</sub> @ V <sub>R</sub>	
	Nom.(V)	Min.(V)	Max.(V)	(Ω)	(mA)	(Ω)	(mA)	(μA)	(V)
BZT52C2V4	2.4	2.20	2.60	100	5.0	600	1.00	50	1.0
BZT52C2V7	2.7	2.50	2.90	100	5.0	600	1.00	20	1.0
BZT52C3V0	3.0	2.80	3.20	95	5.0	600	1.00	10	1.0
BZT52C3V3	3.3	3.10	3.50	95	5.0	600	1.00	5	1.0
BZT52C3V6	3.6	3.40	3.80	90	5.0	600	1.00	5	1.0
BZT52C3V9	3.9	3.70	4.10	90	5.0	600	1.00	3	1.0
BZT52C4V3	4.3	4.00	4.60	90	5.0	600	1.00	3	1.0
BZT52C4V7	4.7	4.40	5.00	80	5.0	500	1.00	3	2.0
BZT52C5V1	5.1	4.80	5.40	60	5.0	480	1.00	2	2.0
BZT52C5V6	5.6	5.20	6.00	40	5.0	400	1.00	1	2.0
BZT52C6V2	6.2	5.80	6.60	10	5.0	150	1.00	3	4.0
BZT52C6V8	6.8	6.40	7.20	15	5.0	80	1.00	2	4.0
BZT52C7V5	7.5	7.00	7.90	15	5.0	80	1.00	1	5.0
BZT52C8V2	8.2	7.70	8.70	15	5.0	80	1.00	0.7	5.0
BZT52C9V1	9.1	8.60	9.60	15	5.0	100	1.00	0.5	6.0
BZT52C10	10	9.40	10.60	20	5.0	150	1.00	0.2	7.0
BZT52C11	11	10.40	11.60	20	5.0	150	1.00	0.1	8.0
BZT52C12	12	11.40	12.70	25	5.0	150	1.00	0.1	8.0
BZT52C13	13	12.40	14.10	30	5.0	170	1.00	0.1	8.0
BZT52C15	15	13.80	15.60	30	5.0	200	1.00	0.1	10.5
BZT52C16	16	15.30	17.10	40	5.0	200	1.00	0.1	11.2
BZT52C18	18	16.80	19.10	45	5.0	225	1.00	0.1	12.6
BZT52C20	20	18.80	21.20	55	5.0	225	1.00	0.1	14.0
BZT52C22	22	20.80	23.30	55	5.0	250	1.00	0.1	15.4
BZT52C24	24	22.80	25.60	70	5.0	250	1.00	0.1	16.8
BZT52C27	27	25.10	28.90	80	2.0	300	0.50	0.1	18.9

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Part Number	Zener Voltage Range (Note 2)			Maximum Zener Impedance (Note 3)				Maximum Leakage Current (Note 2)	
	V <sub>Z</sub> @ I <sub>ZT</sub>			Z <sub>ZT</sub> @ I <sub>ZT</sub>		Z <sub>ZK</sub> @ I <sub>ZK</sub>		I <sub>R</sub> @ V <sub>R</sub>	
	Nom.(V)	Min.(V)	Max.(V)	(Ω)	(mA)	(Ω)	(mA)	(μA)	(V)
BZT52C30	30	28.00	32.00	80	2.0	300	0.50	0.1	21.0
BZT52C33	33	31.00	35.00	80	2.0	325	0.50	0.1	23.1
BZT52C36	36	34.00	38.00	90	2.0	350	0.50	0.1	25.2
BZT52C39	39	37.00	41.00	130	2.0	350	0.50	0.1	27.3
BZT52C43	43	40.00	46.00	100	5.0	700	1.00	0.1	32.0
BZT52C47	47	44.00	50.00	100	2.0	750	1.00	0.1	35.0
BZT52C51	51	48.00	54.00	100	2.0	750	1.00	0.1	38.0
BZT52C56	56	53.20	58.80	200	2.0	400	0.50	0.1	39.2
BZT52C62	62	58.90	65.10	215	2.0	423	0.50	0.1	43.4
BZT52C68	68	64.60	71.40	240	2.0	447	0.50	0.1	47.6
BZT52C75	75	71.25	78.75	255	2.0	470	0.50	0.1	52.5

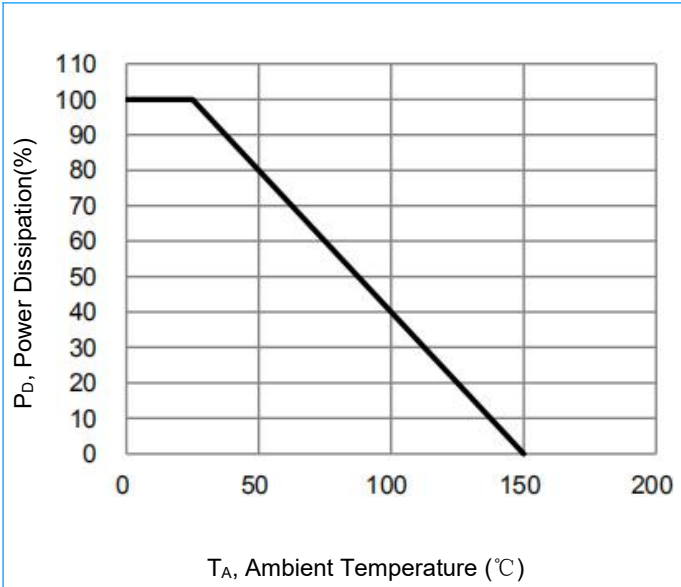
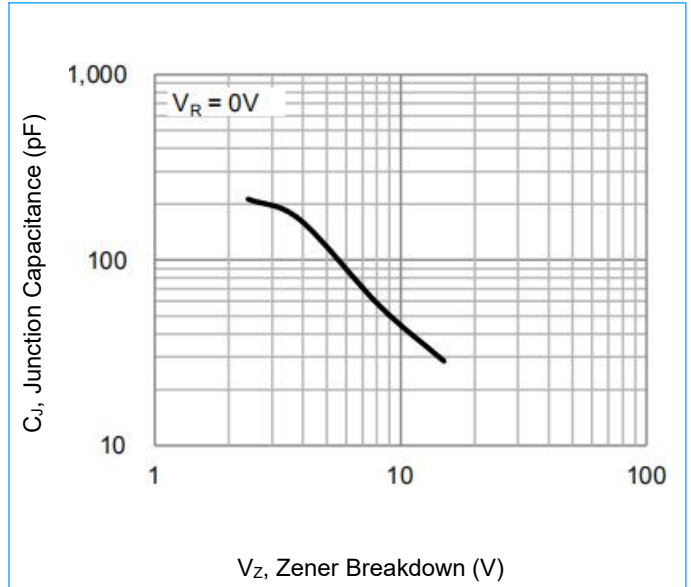
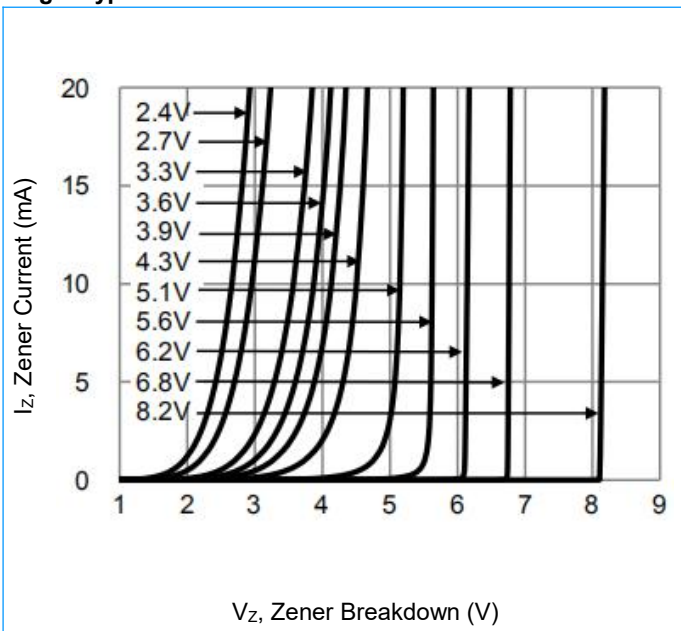
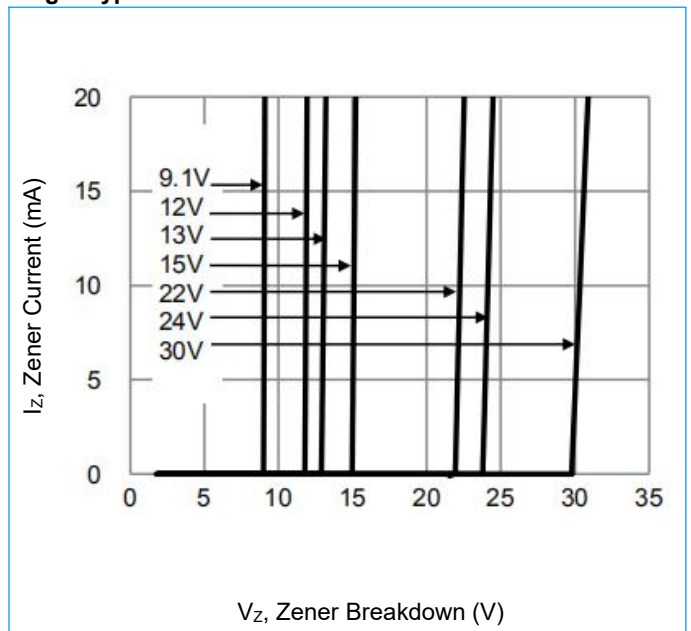
Note 2: Short duration test pulse used to minimize self-heating effect.

Note 3: f=1kHz.

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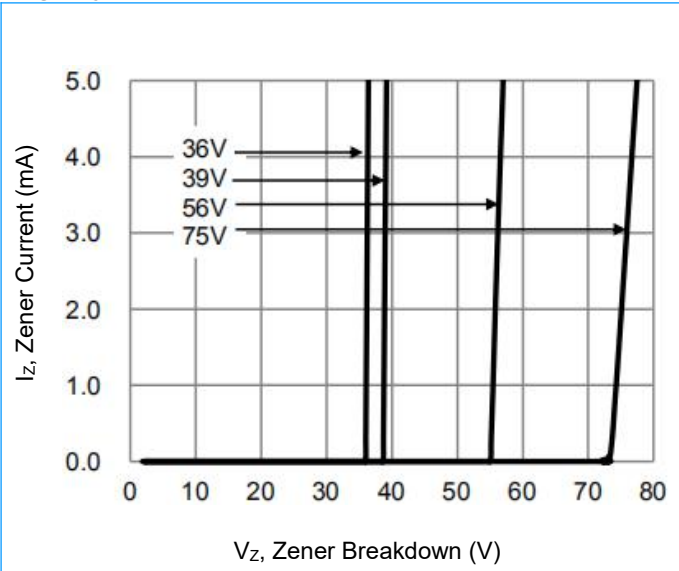
## Rating and Characteristic Curves

**Fig1. Power Derating Curve**

**Fig2. Typical Junction Capacitance**

**Fig3. Typical Zener Breakdown**

**Fig4. Typical Zener Breakdown**


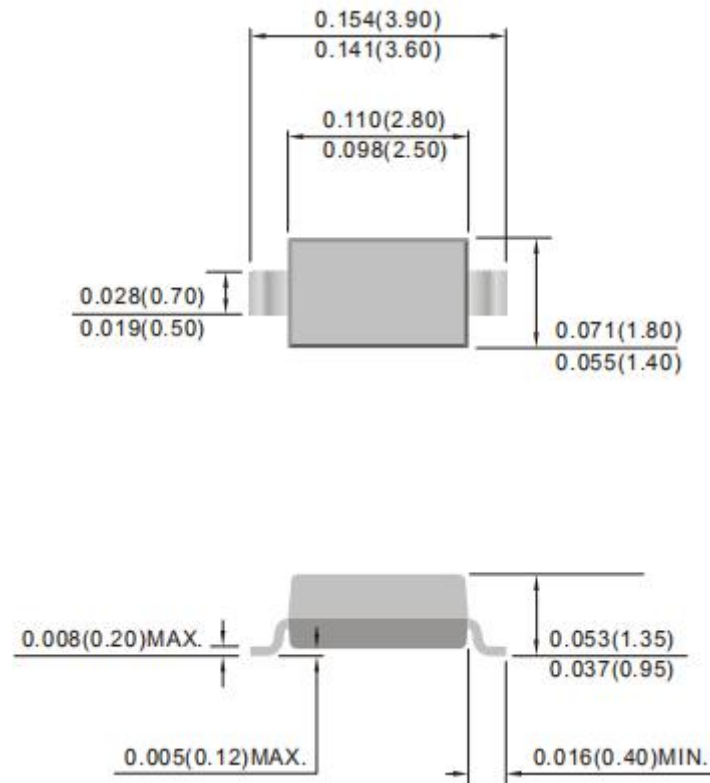
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### Rating and Characteristic Curves (Continue)

**Fig5. Typical Zener Breakdown**


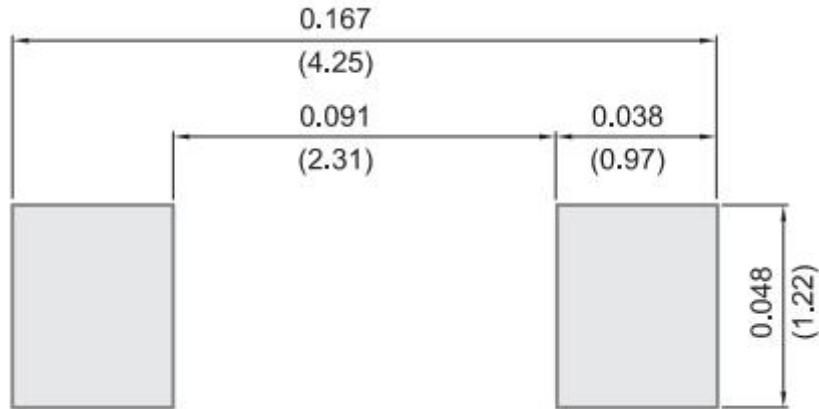
### SOD-123 Package Outline (Dimensions in inches and (millimeters))



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### SOD-123 Mounting Pad Layout (Dimensions in inches and (millimeters))



### Packaging Information

Part Number	Component Package	Quantity	Packaging Option
<b>BZT52C2V4~BZT52C75</b>	SOD-123	10000 PCS	per 13" plastic Reel
		3000 PCS	per 7" plastic Reel