

## Maximum Ratings (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load.

For capacitance load, derate current by 20%.

Characteristic	Symbol	Value	Unit
Forward Voltage @ I <sub>F</sub> = 10mA	V <sub>F</sub>	0.9	V

### **Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 7) @TL = +75°C	P <sub>D</sub>	500	mW
Power Dissipation (Note 8) @Ta = +25°C	P <sub>D</sub>	370	mW
Thermal Resistance, Junction to Ambient Air (Note 8)	$R_{\theta JA}$	338	°C/W
Thermal Resistance, Junction to Lead (Note 9)	$R_{ heta JL}$	150	°C/W
Operating and Storage Temperature Range	$T_{J_i}T_{STG}$	-65 to +150	°C

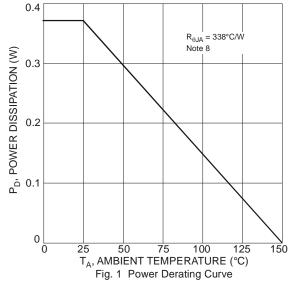
### Electrical Characteristics (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Type Number	Marking Codes	<u> </u>				Maximum Zener Impedance f = 1kHz			Maximum Reverse Current (Note 10)		Temperature Coefficient @ IzTC mV/°C		Test Current I <sub>ZTC</sub>
		Vz @ I <sub>ZT</sub> I <sub>ZT</sub>		Z <sub>ZT</sub> @ I <sub>ZT</sub>	Z <sub>ZK</sub> @ I <sub>ZK</sub>	Izk	IR	@ <b>V</b> <sub>R</sub>					
		Nom (V)	Min (V)	Max (V)	mA	9	_	mA	uA	V	Min	Max	mA
BZT52C2V0	WY	2.0	1.91	2.09	5	100	600	1.0	150	1.0	-3.5	0	5
BZT52C2V4	WX	2.4	2.2	2.6	5	100	600	1.0	50	1.0	-3.5	0	5
BZT52C2V7	W1	2.7	2.5	2.9	5	100	600	1.0	20	1.0	-3.5	0	5
BZT52C3V0	W2	3.0	2.8	3.2	5	95	600	1.0	10	1.0	-3.5	0	5
BZT52C3V3	W3	3.3	3.1	3.5	5	95	600	1.0	5.0	1.0	-3.5	0	5
BZT52C3V6	W4	3.6	3.4	3.8	5	90	600	1.0	5.0	1.0	-3.5	0	5
BZT52C3V9	W5	3.9	3.7	4.1	5	90	600	1.0	3.0	1.0	-3.5	0	5
BZT52C4V3	W6	4.3	4.0	4.6	5	90	600	1.0	3.0	1.0	-3.5	0	5
BZT52C4V7	W7	4.7	4.4	5.0	5	80	500	1.0	3.0	2.0	-3.5	0.2	5
BZT52C5V1	W8	5.1	4.8	5.4	5	60	480	1.0	2.0	2.0	-2.7	1.2	5
BZT52C5V6	W9	5.6	5.2	6.0	5	40	400	1.0	1.0	2.0	-2	2.5	5
BZT52C6V2	WA	6.2	5.8	6.6	5	10	150	1.0	3.0	4.0	0.4	3.7	5
BZT52C6V8	WB	6.8	6.4	7.2	5	15	80	1.0	2.0	4.0	1.2	4.5	5
BZT52C7V5	WC	7.5	7.0	7.9	5	15	80	1.0	1.0	5.0	2.5	5.3	5
BZT52C8V2	WD	8.2	7.7	8.7	5	15	80	1.0	0.7	5.0	3.2	6.2	5
BZT52C9V1	WE	9.1	8.5	9.6	5	15	100	1.0	0.5	6.0	3.8	7.0	5
BZT52C10	WF	10	9.4	10.6	5	20	150	1.0	0.2	7.0	4.5	8.0	5
BZT52C11	WG	11	10.4	11.6	5	20	150	1.0	0.1	8.0	5.4	9.0	5
BZT52C12	WH	12	11.4	12.7	5	25	150	1.0	0.1	8.0	6.0	10.0	5
BZT52C13	WI	13	12.4	14.1	5	30	170	1.0	0.1	8.0	7.0	11.0	5
BZT52C15	WJ	15	13.8	15.6	5	30	200	1.0	0.1	10.5	9.2	13.0	5
BZT52C16	WK	16	15.3	17.1	5	40	200	1.0	0.1	11.2	10.4	14.0	5
BZT52C18	WL	18	16.8	19.1	5	45	225	1.0	0.1	12.6	12.4	16.0	5
BZT52C20	WM	20	18.8	21.2	5	55	225	1.0	0.1	14.0	14.4	18.0	5
BZT52C22	WN	22	20.8	23.3	5	55	250	1.0	0.1	15.4	16.4	-	5
BZT52C24	WO	24	22.8	25.6	5	70	250	1.0	0.1	16.8	18.4	-	5
BZT52C27	WP	27	25.1	28.9	2	80	300	0.5	0.1	18.9	21.4	-	2
BZT52C30	WQ	30	28.0	32.0	2	80	300	0.5	0.1	21.0	24.4	-	2
BZT52C33	WR	33	31.0	35.0	2	80	325	0.5	0.1	23.1	27.4	-	2
BZT52C36	WS	36	34.0	38.0	2	90	350	0.5	0.1	25.2	30.4	-	2
BZT52C39	WT	39	37.0	41.0	2	130	350	0.5	0.1	27.3	33.4	-	2
BZT52C43	WU	43	40.0	46.0	5	100	700	1.0	0.1	32.0	37.6	-	5
BZT52C47	WV	47	44.0	50.0	5	100	750	1.0	0.1	35.0	42.0	-	5
BZT52C51	WW	51	48.0	54.0	5	100	750	1.0	0.1	38.0	46.6	-	5

Notes:

- 7.  $R_{\theta JL} = 132$ °C/W
- 8. Device mounted on FR-4 PCB with 1 inch copper pad layout.
- 9. Thermal Resistance measurement obtained via infrared scan method.
- 10. Short duration pulse test used to minimize self-heating effect.





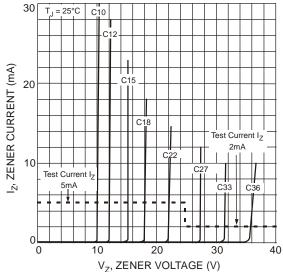


Fig. 3 Typical Zener Breakdown Characteristics

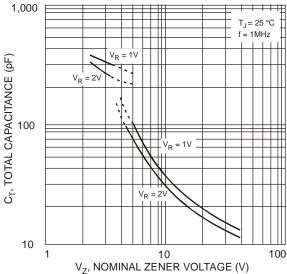


Fig. 5 Typical Total Capacitance vs. Nominal Zener Voltage

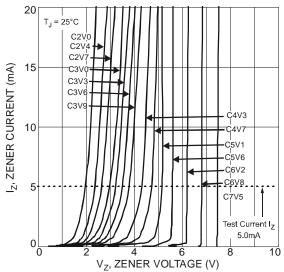


Fig. 2 Typical Zener Breakdown Characteristics

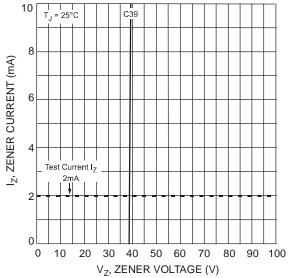


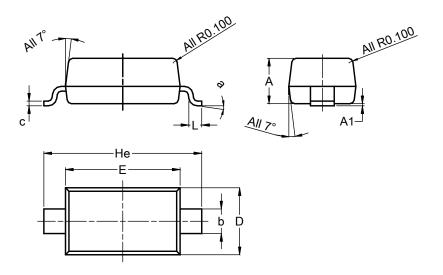
Fig. 4 Typical Zener Breakdown Characteristics



## **Package Outline Dimensions**

Please see http://www.diodes.com/package-outlines.html for the latest version.

#### SOD123

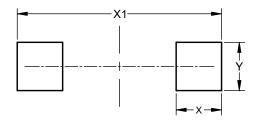


SOD123					
Dim	Min	Max	Тур		
Α	1.00	1.35	1.05		
<b>A</b> 1	0.00	0.10	0.05		
b	0.52	0.62	0.57		
С	0.10	0.15	0.11		
D	1.40	1.70	1.55		
Е	2.55	2.85	2.65		
He	3.55	3.85	3.65		
L	0.25	0.40	0.30		
а	00	8º			
All Dimensions in mm					

# **Suggested Pad Layout**

Please see http://www.diodes.com/package-outlines.html for the latest version.

### SOD123



Dimensions	Value (in mm)
Х	0.900
X1	4.050
Υ	0.950



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