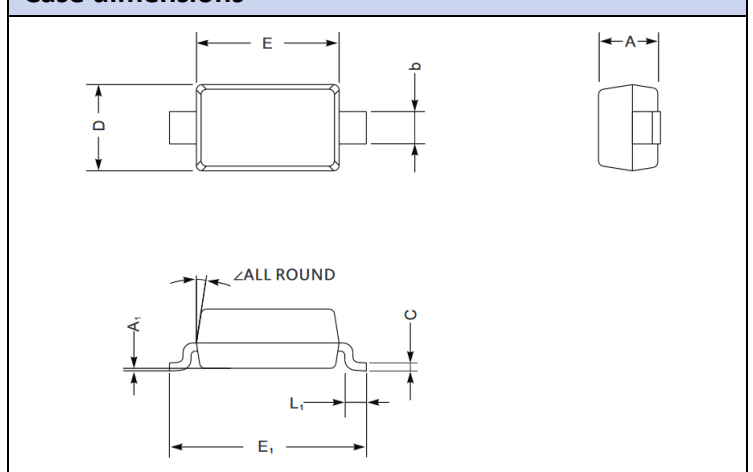


## Silicon SMD Voltage Regulator Zener Diodes

Primary characteristics		
Parameter	Value	Unit
V <sub>Z</sub> range nom.	2.4 to 39	V
Power rating	500	mW

### Features

- SOD-123 case for easy automatic insertion.
- Pb-free and RoHS compliant
- General purpose, medium current
- UL Flammability Classification Rating 94V-0
- Moisture sensitivity: level 1 per J-STD-020A
- Terminals: Solderable per MIL-STD-202, method 208
- Polarity: cathode band

Case dimensions									
									
SOD-123									
Unit	A	C	D	E	E <sub>1</sub>	L <sub>1</sub>	b	A <sub>1</sub>	Z
mm	1.35 MAX	0.11 TYP	1.55 ±0.15	2.7 ±0.15	3.7 ±0.15	0.25 MIN	0.55 TYP	0.1 MAX	8° MAX

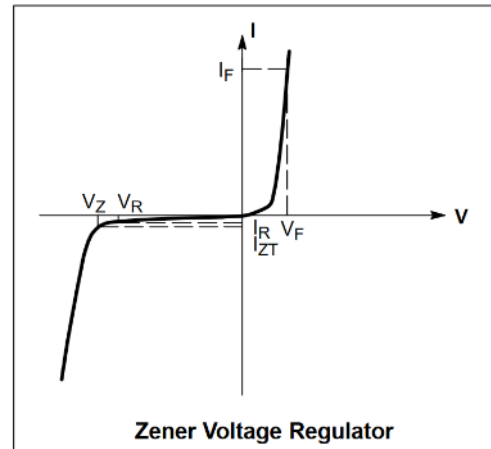
Part numbering system	
<b>BZT52C</b> ↓ Series code	<b>8V2</b> ↓ Reverse Zener Voltage (see: <a href="#">Characteristics table</a> )

Absolute maximum ratings (T <sub>a</sub> = 25°C)			
Parameter	Symbol	Value	Unit
Forward voltage @ I <sub>F</sub> =10mA <sup>2)</sup>	V <sub>F</sub>	0.9	V
Power dissipation <sup>1)</sup>	P <sub>D</sub>	500	mW
Operating and storage temperature range	T <sub>s</sub>	-65 ~ 150	°C
Thermal resistance junction to ambient air	R <sub>θJA</sub>	305	°C/W

<sup>1)</sup> Device mounted on ceramic PCB: 7.6mm x 9.4mm x 0.87mm with pad areas 25mm<sup>2</sup>

<sup>2)</sup> Short duration test pulse used to minimize self-heating effect

Parameters list	
Symbol	Parameter
$V_Z$	Reverse Zener Voltage @ $I_{ZT}$
$I_{ZT}$	Reverse Current
$I_R$	Reverse Leakage Current @ $V_R$
$V_R$	Reverse Voltage
$I_F$	Forward Current
$V_F$	Forward Voltage @ $I_F$



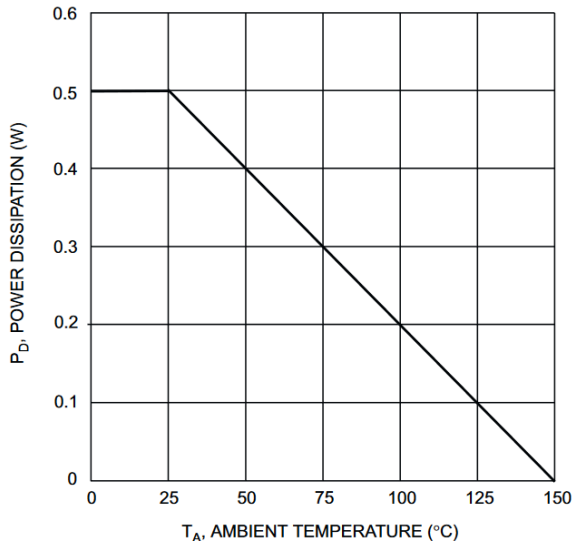
Characteristics table ( $T_a = 25^\circ\text{C}$ )												
Type	Marking Code	Zener Voltage <sup>2)</sup>			Dynamic Resistance <sup>3)</sup>				Reverse Current <sup>2)</sup>		Typical temperature coefficient @ $I_{ZTC}$	Test current
		$V_Z$ nom. V	$I_{ZT}$ mA	$V_{ZT}$ V	$r_{ZJT}$ @ $I_{ZT}$		$r_{ZJK}$ @ $I_{ZK}$		$I_R$ @ $V_R$			
					$\Omega$	mA	$\Omega$	mA	$\mu\text{A}$	V	mV/ $^\circ\text{C}$	$I_{ZTC}$ mA
BZT52C2V4	WX	2.4	5.0	2.2 ~ 2.6	<100	5.0	<600	1.0	<50	1.0	-3.5 ~ 0	5
BZT52C2V7	W1	2.7	5.0	2.5 ~ 2.9	<100	5.0	<600	1.0	<20	1.0	-3.5 ~ 0	5
BZT52C3V0	W2	3.0	5.0	2.8 ~ 3.2	<95	5.0	<600	1.0	<10	1.0	-3.5 ~ 0	5
BZT52C3V3	W3	3.3	5.0	3.1 ~ 3.5	<95	5.0	<600	1.0	<5	1.0	-3.5 ~ 0	5
BZT52C3V6	W4	3.6	5.0	3.4 ~ 3.8	<90	5.0	<600	1.0	<5	1.0	-3.5 ~ 0	5
BZT52C3V9	W5	3.9	5.0	3.7 ~ 4.1	<90	5.0	<600	1.0	<3	1.0	-3.5 ~ 0	5
BZT52C4V3	W6	4.3	5.0	4.0 ~ 4.6	<90	5.0	<600	1.0	<3	1.0	-3.5 ~ 0	5
BZT52C4V7	W7	4.7	5.0	4.4 ~ 5.0	<80	5.0	<500	1.0	<3	2.0	-3.5 ~ 0.2	5
BZT52C5V1	W8	5.1	5.0	4.8 ~ 5.4	<60	5.0	<480	1.0	<2	2.0	-2.7 ~ 1.2	5
BZT52C5V6	W9	5.6	5.0	5.2 ~ 6.0	<40	5.0	<400	1.0	<1	2.0	-2 ~ 2.5	5
BZT52C6V2	WA	6.2	5.0	5.8 ~ 6.6	<10	5.0	<150	1.0	<3	4.0	0.4 ~ 3.7	5
BZT52C6V8	WB	6.8	5.0	6.4 ~ 7.2	<15	5.0	<80	1.0	<2	4.0	1.2 ~ 4.5	5
BZT52C7V5	WC	7.5	5.0	7.0 ~ 7.9	<15	5.0	<80	1.0	<1	5.0	2.5 ~ 5.3	5
BZT52C8V2	WD	8.2	5.0	7.7 ~ 8.7	<15	5.0	<80	1.0	<0.7	5.0	3.2 ~ 6.2	5
BZT52C9V1	WE	9.1	5.0	8.5 ~ 9.6	<15	5.0	<100	1.0	<0.5	6.0	3.8 ~ 7.0	5
BZT52C10	WF	10	5.0	9.4 ~ 10.6	<20	5.0	<150	1.0	<0.2	7.0	4.5 ~ 8.0	5
BZT52C11	WG	11	5.0	10.4 ~ 11.6	<20	5.0	<150	1.0	<0.1	8.0	5.4 ~ 9.0	5
BZT52C12	WH	12	5.0	11.4 ~ 12.7	<25	5.0	<150	1.0	<0.1	8.0	6.0 ~ 10.0	5
BZT52C13	WI	13	5.0	12.4 ~ 14.1	<30	5.0	<170	1.0	<0.1	8.0	7.0 ~ 11.0	5
BZT52C15	WJ	15	5.0	13.8 ~ 15.6	<30	5.0	<200	1.0	<0.1	10.5	9.2 ~ 13	5
BZT52C16	WK	16	5.0	15.3 ~ 17.1	<40	5.0	<200	1.0	<0.1	11.2	10.4 ~ 14	5
BZT52C18	WL	18	5.0	16.8 ~ 19.1	<45	5.0	<225	1.0	<0.1	12.6	12.4 ~ 16	5
BZT52C20	WM	20	5.0	18.8 ~ 21.2	<55	5.0	<225	1.0	<0.1	14.0	14.4 ~ 18.0	5
BZT52C22	WN	22	5.0	20.8 ~ 23.3	<55	5.0	<250	1.0	<0.1	15.4	16.4 ~ 20.0	5
BZT52C24	WO	24	5.0	22.8 ~ 25.6	<70	5.0	<250	1.0	<0.1	16.8	18.4 ~ 22.0	5
BZT52C27	WP	27	2.0	25.1 ~ 28.9	<80	2.0	<300	0.5	<0.1	18.9	21.4 ~ 25.3	2
BZT52C30	WQ	30	2.0	28.0 ~ 32.0	<80	2.0	<300	0.5	<0.1	21.0	24.4 ~ 29.4	2
BZT52C33	WR	33	2.0	31.0 ~ 35.0	<80	2.0	<325	0.5	<0.1	23.1	27.4 ~ 33.4	2
BZT52C36	WS	36	2.0	34.0 ~ 38.0	<90	2.0	<350	0.5	<0.1	25.2	30.4 ~ 37.4	2
BZT52C39	WT	39	2.0	37.0 ~ 41.0	<130	2.0	<350	0.5	<0.1	27.3	33.4 ~ 41.2	2

<sup>1)</sup> Device mounted on ceramic PCB: 7.6mm x 9.4mm x 0.87mm with pad areas 25mm<sup>2</sup>

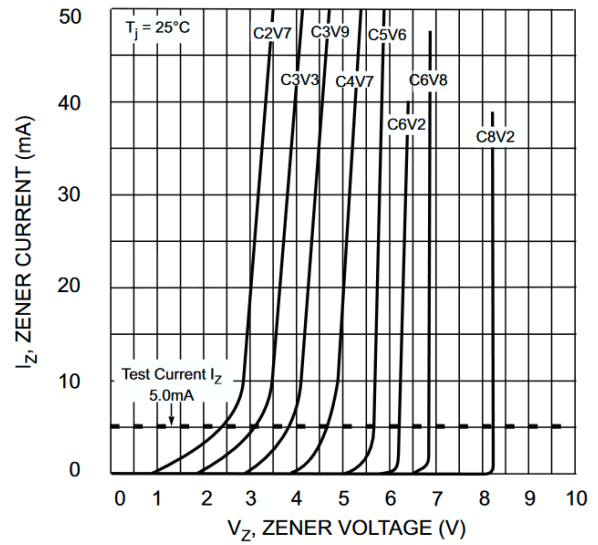
<sup>2)</sup> Short duration test pulse used to minimize self-heating effect

<sup>3)</sup> f = 1kHz

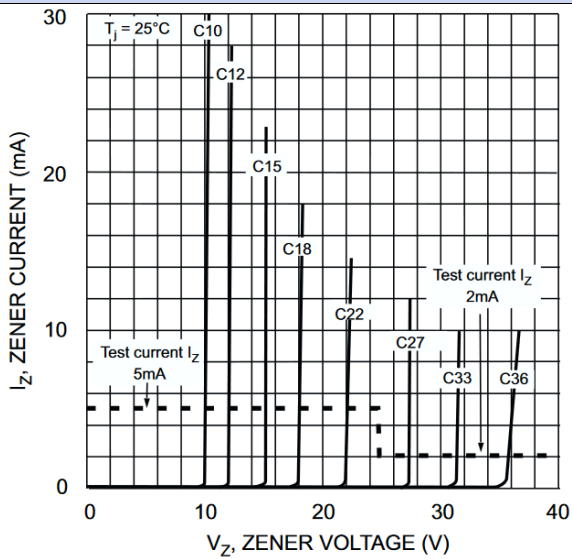
### Power dissipation vs ambient temperature



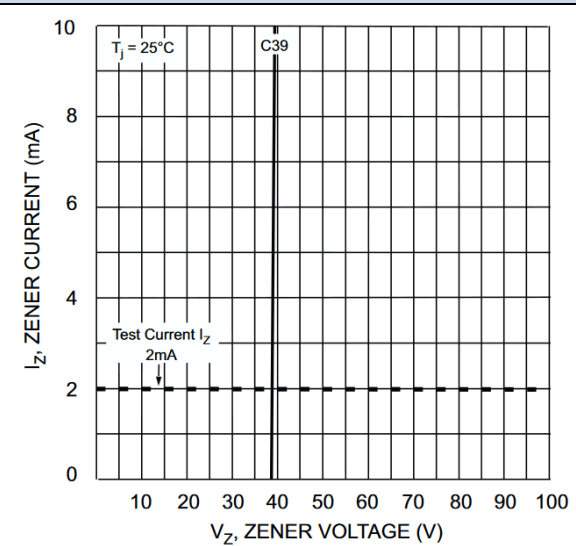
### Zener breakdown characteristics



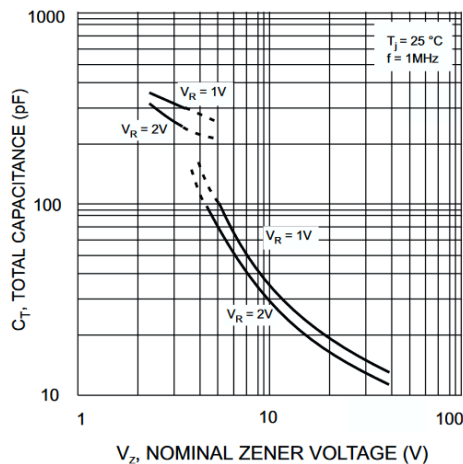
### Zener breakdown characteristics

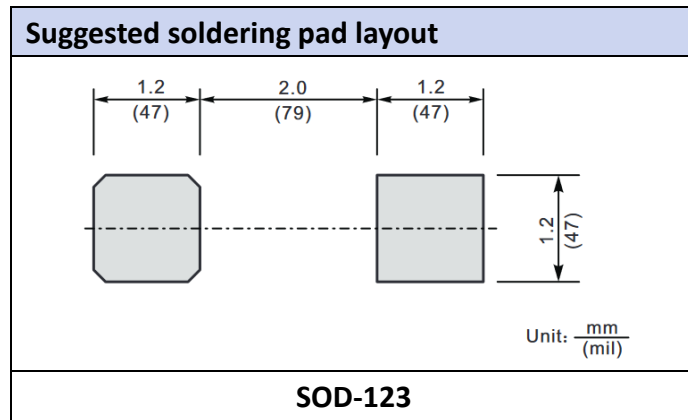


### Zener breakdown characteristics



### Total capacitance vs nominal Zener voltage





Ordering information			
Part Number	Package	Shipping Quantity	Dimensions
BZT52C2V4 ~ BZT52C39	SOD-123	3000 pcs / reel	---

## Disclaimer

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