



# Zeners

## BZX84C 3V3 - BZX84C 33

Zeners (BZX84C 3V3 - BZX84C 33)

Tolerance: C = 5%

### Absolute Maximum Ratings\*

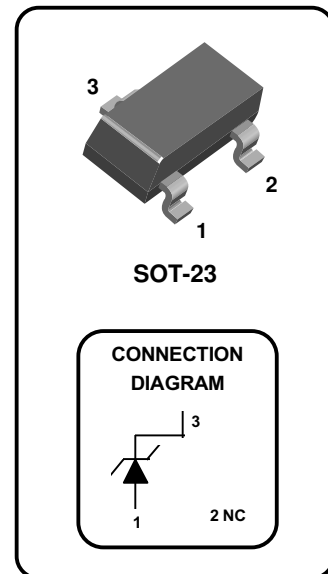
$T_A = 25^\circ\text{C}$  unless otherwise noted

Symbol	Parameter	Value	Units
$I_{FRM}$	Repetitive Peak Forward Current ( $I_{FRM}$ )	250	mA
$I_{ZRM}$	Repetitive Peak Working Current ( $I_{ZRM}$ )	250	mA
$P_D$	Power Dissipation	350	mW
$T_{STG}$	Storage Temperature Range	-55 to +150	$^\circ\text{C}$
$T_J$	Operating Junction Temperature	-55 to +150	$^\circ\text{C}$

\*These ratings are limiting values above which the serviceability of the diode may be impaired.

#### NOTES:

- 1) These ratings are based on a maximum junction temperature of 150 degrees C.
- 2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.



### Electrical Characteristics

$T_A = 25^\circ\text{C}$  unless otherwise noted

Device	Mark	$I_Z = 5.0 \text{ mA}$			$I_Z = 1.0 \text{ mA}$			$I_Z = 20 \text{ mA}$		
		$V_Z(\text{V})$		$Z_Z(\Omega)$	$V_Z(\text{V})$		$Z_Z(\Omega)$	$V_Z(\text{V})$		$Z_Z(\Omega)$
		MIN	MAX		MIN	MAX		MIN	MAX	
BZX84C 3V3	Z14	3.1	3.5	95	2.3	2.9	600	3.6	4.2	40
BZX84C 3V6	Z15	3.4	3.8	90	2.7	3.3	600	3.9	4.5	40
BZX84C 3V9	Z16	3.7	4.1	90	2.9	3.5	600	4.1	4.7	30
BZX84C 4V3	Z17	4.0	4.6	90	3.3	4.0	600	4.4	5.1	30
<b>BZX84C 4V7</b>	Z1	4.4	5.0	80	3.7	4.7	500	4.5	5.4	15
<b>BZX84C 5V1</b>	Z2	4.8	5.4	60	4.2	5.3	480	5.0	5.9	15
<b>BZX84C 5V6</b>	Z3	5.2	6.0	40	4.8	6.0	400	5.2	6.3	10
<b>BZX84C 6V2</b>	Z4	5.8	6.6	10	5.6	6.6	150	5.8	6.8	6
<b>BZX84C 6V8</b>	Z5	6.4	7.2	15	6.3	7.2	80	6.4	7.4	6
BZX84C 7V5	Z6	7.0	7.9	15	6.9	7.9	80	7.0	8.0	6
<b>BZX84C 8V2</b>	Z7	7.7	8.7	15	7.6	8.7	80	7.7	8.8	6
<b>BZX84C 9V1</b>	Z8	8.5	9.6	15	8.4	9.6	100	8.5	9.7	8
<b>BZX84C 10</b>	Z9	9.4	10.6	20	9.3	10.6	150	9.4	10.7	10
BZX84C 11	Y1	10.4	11.6	20	10.2	11.6	150	10.4	11.8	10
<b>BZX84C 12</b>	Y2	11.4	12.7	25	11.2	12.7	150	11.4	12.9	10
BZX84C 13	Y3	12.4	14.1	30	12.3	14.0	170	12.5	14.2	15
<b>BZX84C 15</b>	Y4	13.8	15.6	30	13.7	15.5	200	13.9	15.7	20
BZX84C 16	Y5	15.3	17.1	40	15.2	17	200	15.4	17.2	20
BZX84C 18	Y6	16.8	19.1	45	16.7	19	225	16.9	19.2	20
BZX84C 20	Y7	18.8	21.2	55	18.7	21.1	225	18.9	21.4	20
BZX84C 22	Y8	20.8	23.3	55	20.7	23.2	250	20.9	23.4	25
BZX84C 24	Y9	22.8	25.6	70	22.7	25.5	250	22.9	25.7	25

## Zeners (BZX84C 3V3 - BZX84C 33)

(continued)

### Electrical Characteristics (continued) TA = 25°C unless otherwise noted

Device	Mark	I <sub>Z</sub> = 2.0 mA			I <sub>Z</sub> = 100 μA			I <sub>Z</sub> = 10 mA		
		V <sub>Z</sub> (V)		Z <sub>Z</sub> (Ω)	V <sub>Z</sub> (V)		Z <sub>Z</sub> (Ω)	V <sub>Z</sub> (V)		Z <sub>Z</sub> (Ω)
		MIN	MAX		MIN	MAX		MIN	MAX	
BZX84C 27	Y10	25.1	28.9	80	25	28.9	300	25.2	29.3	45
<b>BZX84C 30</b>	Y11	28	32	80	27.8	32	300	28.1	32.4	50
BZX84C 33	Y12	31	35	80	30.8	35	325	31.1	35.4	55

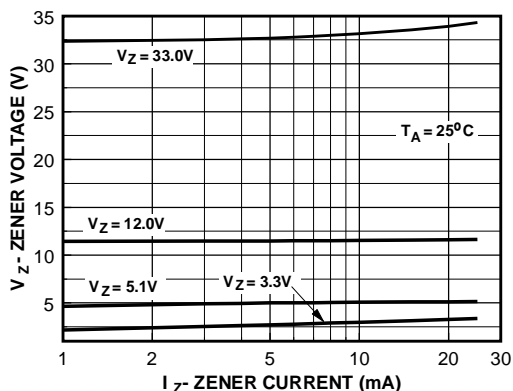
V<sub>F</sub> Forward Voltage = 0.9 V Maximum @ I<sub>F</sub> = 10 mA for all BZX 84 series

Device	V <sub>R</sub> (V)	I <sub>R</sub> (μA)	CAP* (pF)	D <sub>VZ</sub> / D <sub>t</sub> @ 5.0 mA(mV/k)	
				MIN	MAX
BZX84C 3V3	1.0	5.0	450	- 3.5	0.0
BZX84C 3V6	1.0	5.0	450	- 3.5	0.0
BZX84C 3V9	1.0	5.0	450	- 3.5	0.0
BZX84C 4V3	1.0	5.0	450	- 3.5	0.0
BZX84C 4V7	2.0	3	260	- 3.5	+ 0.2
BZX84C 5V1	2.0	2	225	- 2.7	+ 1.2
BZX84C 5V6	2.0	1	200	- 2.0	+ 2.5
BZX84C 6V2	4.0	3	185	+ 0.4	+ 3.7
BZX84C 6V8	4.0	2	155	+ 1.2	+ 4.5
BZX84C 7V5	5.0	1	140	+ 2.5	+ 5.3
BZX84C 8V2	5.0	0.7	135	+ 3.2	+ 6.2
BZX84C 9V1	6.0	0.5	130	+ 3.8	+ 7.0
BZX84C 10	7.0	0.2	130	+ 4.5	+ 8.0
BZX84C 11	8.0	0.1	130	+ 5.4	+ 9.0
BZX84C 12	8.0	0.1	130	+ 6.0	+ 10
BZX84C 13	8.0	0.1	120	+ 7.0	+ 11
BZX84C 15	10.5	0.05	110	+ 9.2	+ 13
BZX84C 16	11.2	0.05	105	+ 10.4	+ 14
BZX84C 18	12.6	0.05	100	+ 12.4	+ 16
BZX84C 20	14	0.05	85	+ 14.4	+ 18
BZX84C 22	15.4	0.05	85	+ 16.4	+ 20
BZX84C 24	16.8	0.05	80	+ 18.4	+ 22
BZX84C 27	18.9	0.05	70	+ 21.4	+ 25.3
BZX84C 30	21	0.05	70	+ 24.4	+ 29.4
BZX84C 33	23.1	0.05	70	+ 27.4	+ 33.4

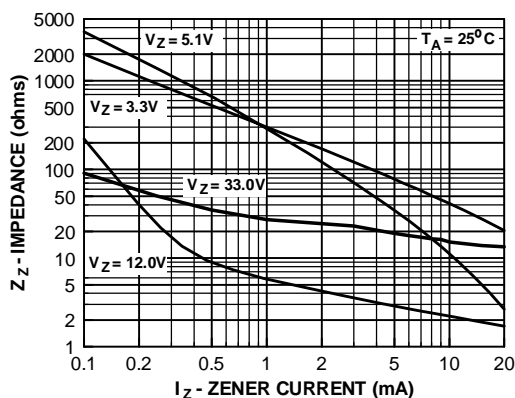
\*Capacitance @ V<sub>R</sub> = 0.0 volts; Frequency = 1.0 megahertz.

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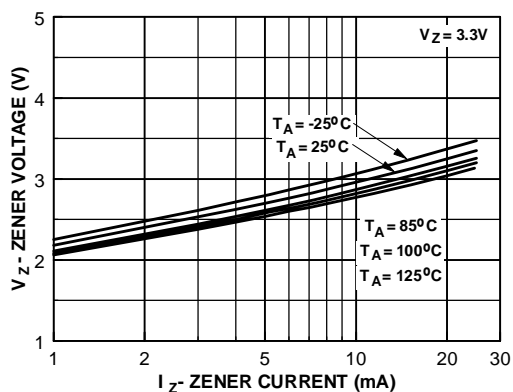
Typical Characteristics



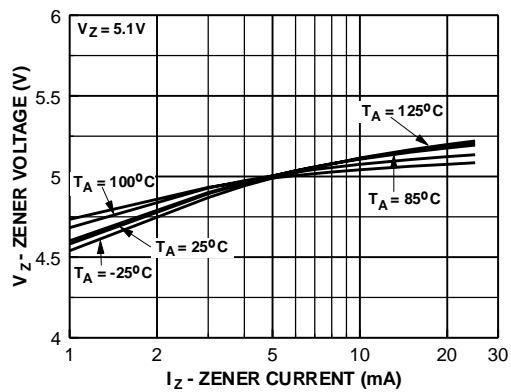
Zener Current vs. Zener Voltage



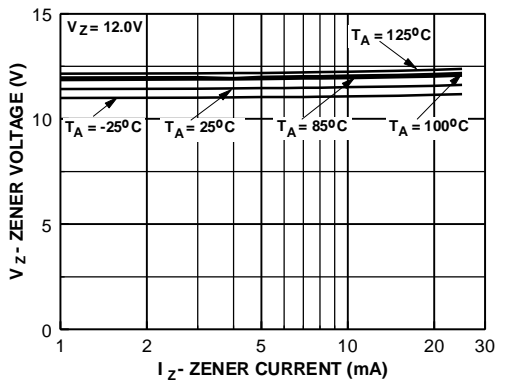
Zener Current vs. Zener Impedance



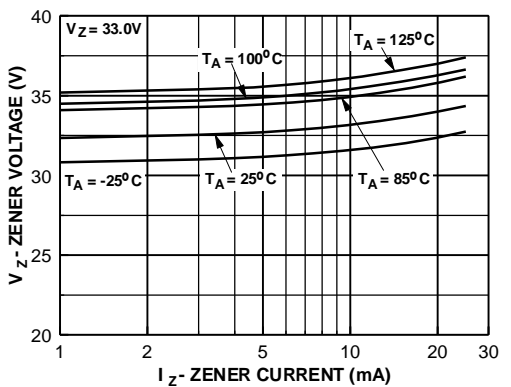
3.3 Zener Voltage vs. Temperature



5.1 Zener Voltage vs. Temperature



12 Zener Voltage vs. Zener Temperature



33 Zener Voltage vs. Zener Temperature

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