

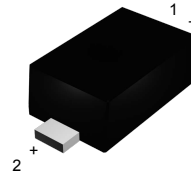
# **BZX584C2V4 thru BZX584C43**

Surface Mount Zener Diodes

Vz Range: 2.4V to 43V Power Dissipation: 500mW

## **Features**

- Planar die construction
- 500mW power dissipation



**SOD-523**



**Schematic Diagram**

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

<b>Parameter</b>	<b>Symbol</b>	<b>Value</b>	<b>Unit</b>
Forward Voltage @ $I_F=10\text{mA}$	$V_F$	0.9	V
Power Dissipation <sup>1</sup>	$P_D$	500	mW
Thermal Resistance from Junction to Ambient <sup>1</sup>	$R_{\theta JA}$	250	$^\circ\text{C}/\text{W}$
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-55 to +150	$^\circ\text{C}$

Notes:

1. FR-4 printed circuit board, single-sided copper, mounting pad  $1\text{cm}^2$ .

# BZX584C2V4 thru BZX584C43

Surface Mount Zener Diodes

V<sub>Z</sub> Range: 2.4V to 43V Power Dissipation: 500mW

## Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise noted)

Type Number	Marking Code	Zener Voltage Range <sup>2</sup>				Maximum Zener Impedance <sup>3</sup>			Maximum Reverse Current		Typical Temperature Coefficient @ I <sub>ZT</sub> 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>R</sub>	V <sub>R</sub>	Min	Max
		Nom (V)	Min (V)	Max (V)	(mA)	(Ω)		(mA)	(μA)	(V)		
BZX584C2V4	Z11	2.4	2.2	2.6	5	100	600	1.0	50	1.0	-3.5	0
BZX584C2V7	Z12	2.7	2.5	2.9	5	100	600	1.0	20	1.0	-3.5	0
BZX584C3V0	Z13	3.0	2.8	3.2	5	95	600	1.0	10	1.0	-3.5	0
BZX584C3V3	Z14	3.3	3.1	3.5	5	95	600	1.0	5	1.0	-3.5	0
BZX584C3V6	Z15	3.6	3.4	3.8	5	90	600	1.0	5	1.0	-3.5	0
BZX584C3V9	Z16	3.9	3.7	4.1	5	90	600	1.0	3	1.0	-3.5	0
BZX584C4V3	Z17	4.3	4.0	4.6	5	90	600	1.0	3	1.0	-3.5	0
BZX584C4V7	Z1	4.7	4.4	5.0	5	80	500	1.0	3	2.0	-3.5	0.2
BZX584C5V1	Z2	5.1	4.8	5.4	5	60	480	1.0	2	2.0	-2.7	1.2
BZX584C5V6	Z3	5.6	5.2	6.0	5	40	400	1.0	1	2.0	-2.0	2.5
BZX584C6V2	Z4	6.2	5.8	6.6	5	10	150	1.0	3	4.0	0.4	3.7
BZX584C6V8	Z5	6.8	6.4	7.2	5	15	80	1.0	2	4.0	1.2	4.5
BZX584C7V5	Z6	7.5	7.0	7.9	5	15	80	1.0	1	5.0	2.5	5.3
BZX584C8V2	Z7	8.2	7.7	8.7	5	15	80	1.0	0.7	5.0	3.2	6.2
BZX584C9V1	Z8	9.1	8.5	9.6	5	15	100	1.0	0.5	6.0	3.8	7.0
BZX584C10	Z9	10	9.4	10.6	5	20	150	1.0	0.2	7.0	4.5	8.0
BZX584C11	Y1	11	10.4	11.6	5	20	150	1.0	0.1	8.0	5.4	9.0
BZX584C12	Y2	12	11.4	12.7	5	25	150	1.0	0.1	8.0	6.0	10.0
BZX584C13	Y3	13	12.4	14.1	5	30	170	1.0	0.1	8.0	7.0	11.0
BZX584C15	Y4	15	13.8	15.6	5	30	200	1.0	0.1	10.5	9.2	13.0
BZX584C16	Y5	16	15.3	17.1	5	40	200	1.0	0.1	11.2	10.4	14.0
BZX584C18	Y6	18	16.8	19.1	5	45	225	1.0	0.1	12.6	12.4	16.0
BZX584C20	Y7	20	18.8	21.2	5	55	225	1.0	0.1	14.0	14.4	18.0
BZX584C22	Y8	22	20.8	23.3	5	55	250	1.0	0.1	15.4	16.4	20.0
BZX584C24	Y9	24	22.8	25.6	5	70	250	1.0	0.1	16.8	18.4	22.0
BZX584C27	Y10	27	25.1	28.9	2	80	300	0.5	0.1	18.9	21.4	25.3
BZX584C30	Y11	30	28.0	32.0	2	80	300	0.5	0.1	21.0	24.4	29.4
BZX584C33	Y12	33	31.0	35.0	2	80	325	0.5	0.1	23.1	27.4	33.4
BZX584C36	Y13	36	34.0	38.0	2	90	350	0.5	0.1	25.2	30.4	37.4
BZX584C39	Y14	39	37.0	41.0	2	130	350	0.5	0.1	27.3	33.4	41.2
BZX584C43	Y15	43	40.0	46.0	2	100	700	1.0	0.1	32.0	10.0	12.0

Notes:

2. Tested with pulses, period=5ms, pulse width=300μs.

3. F=1KHz.

# BZX584C2V4 thru BZX584C43

Surface Mount Zener Diodes  
 Vz Range: 2.4V to 43V Power Dissipation: 500mW

## Typical Electrical Characteristic Curves

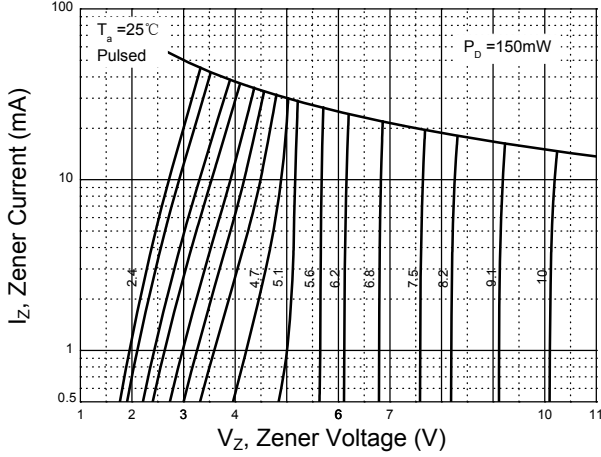


Figure 1. Zener Characteristics ( $V_z$  Up to 10V)

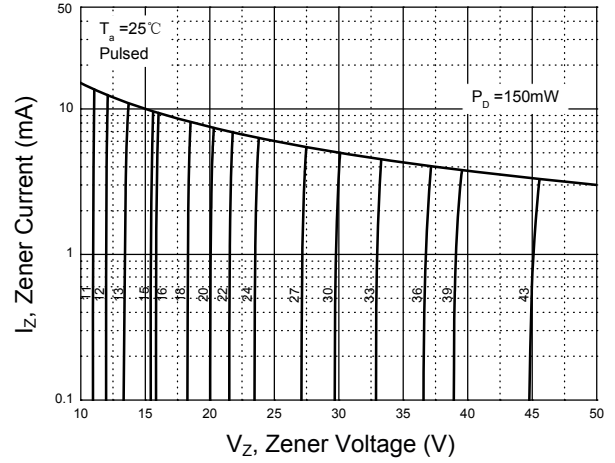


Figure 2. Zener Characteristics (11V to 43V)

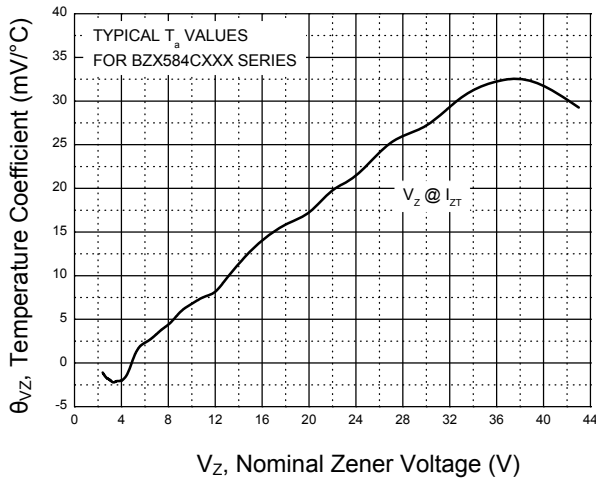


Figure 3. Temperature Coefficients

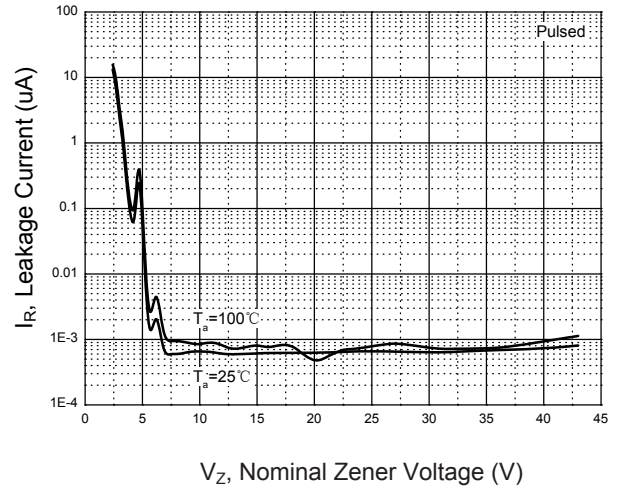


Figure 4. Typical Leakage Current

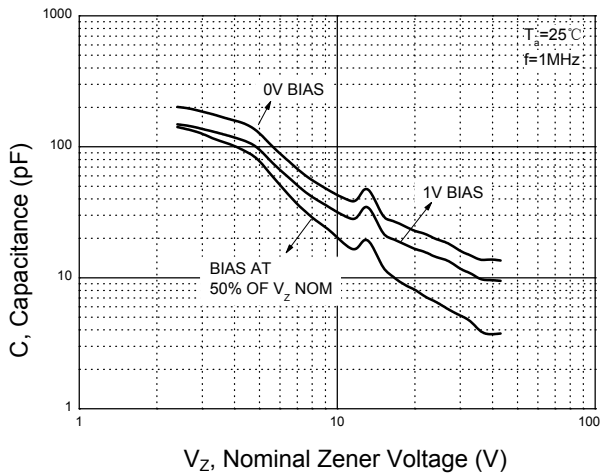


Figure 5. Typical Capacitance

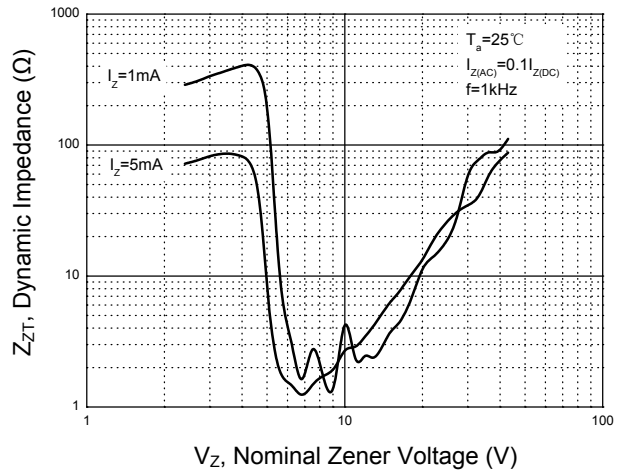


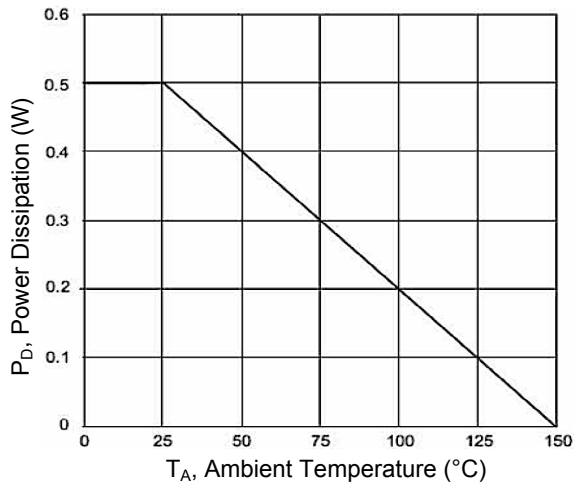
Figure 6. Effect of Zener Voltage on Zener Impedance

# **BZX584C2V4 thru BZX584C43**

Surface Mount Zener Diodes

Vz Range: 2.4V to 43V Power Dissipation: 500mW

## **Typical Electrical Characteristic Curves**



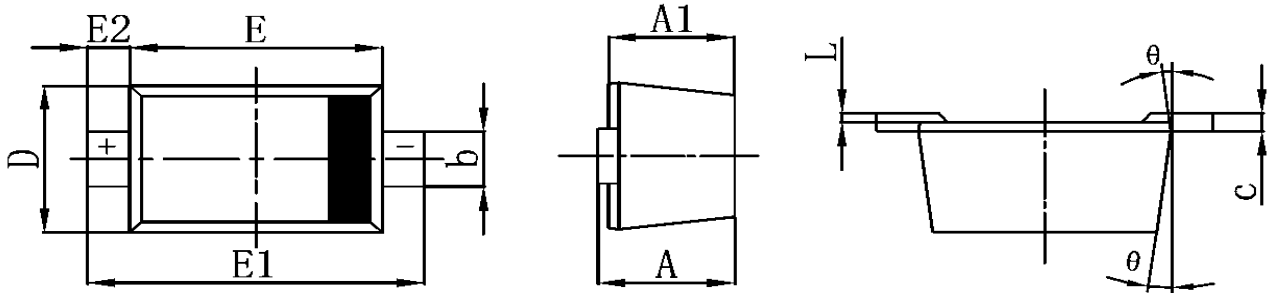
**Figure 7. Power Dissipation vs. Ambient Temperature**

# BZX584C2V4 thru BZX584C43

Surface Mount Zener Diodes

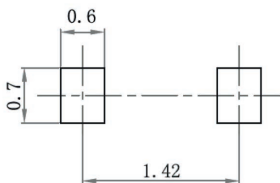
Vz Range: 2.4V to 43V Power Dissipation: 500mW

## Package Outline Dimensions (SOD-523)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.510	0.770	0.020	0.031
A1	0.500	0.700	0.020	0.028
b	0.250	0.350	0.010	0.014
c	0.080	0.150	0.003	0.006
D	0.750	0.850	0.030	0.033
E	1.100	1.300	0.043	0.051
E1	1.500	1.700	0.059	0.067
E2	0.200 REF		0.008 REF	
L	0.010	0.070	0.001	0.003
$\theta$	7° REF		7° REF	

## Recommended Pad Layout



**Note:**

1. Controlling dimension: in millimeters
2. General tolerance:  $\pm 0.05\text{mm}$
3. The pad layout is for reference purposes only

## Order Information

Device	Package	Packaging	SPQ
BZX584Cxxx	SOD-523	Tape & Reel	3,000 Pcs / Reel