

Small Signal Product

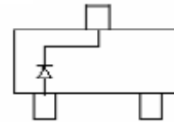
**Features**

- ◇ Planar die construction
- ◇ 300 mW power dissipation
- ◇ Zener voltages from : 2.4V - 39V
- ◇ Ideally suited for automated assembly processes

**Mechanical Data**

- ◇ Case : SOT-23, molding plastic
- ◇ Case material - UL flammability rating 94V-0
- ◇ Moisture sensitivity : Level 1 per J-STD-020
- ◇ Terminals : Solderable per MIL-STD-202, method 208
- ◇ Polarity : See diagram
- ◇ Lead free plating
- ◇ Marking : Marking code
- ◇ Weight : 0.008 grams (approximately)

**SOT-23**



**Maximum Ratings and Electrical Characteristics**

Rating at 25 °C ambient temperature unless otherwise specified.

**Maximum Ratings**

Parameter	Symbol	Value	Unit
Power Dissipation (Note 1)	$P_D$	300	mW
Forward Voltage @ $I_F = 10 \text{ mA}$	$V_F$	0.9	V
Thermal Resistance (Junction to Ambient) (Note 1)	$R_{\theta JA}$	417	K/W
Operating and Storage Temperature Range	$T_J, T_{STG}$	-65 to +150	°C

Notes: 1. Valid provided that device terminals are kept at ambient temperature .

2. Tested with pulses period = 5 ms, pulse width = 300  $\mu$ s

3. f = 1KHz

## Small Signal Product

### Electrical Characteristics ( $T_A = 25^\circ\text{C}$ unless otherwise noted )

Type Number (Note 1)	Marking code	Zener Voltage Range (Note 2)				Maximum Zener Impedance (Note 3)			Maximum Reverse Current		Typical Temperature Coefficient @ $I_{ZT}$ (mV/°C)	
		$V_Z @ I_{ZT}$			$I_{ZT}$ mA	$Z_{ZT} @ I_{ZT}$ Ohms	$Z_{ZK} @ I_{ZK}$		$I_R$ $\mu\text{A}$	$V_R$ V	Min	Max
		Nom	Min	Max			Ohms	mA				
BZX84C2V4	Z11	2.4	2.2	2.6	5.0	100	600	1.0	50	1.0	-3.5	0
BZX84C2V7	Z12	2.7	2.5	2.9	5.0	100	600	1.0	20	1.0	-3.5	0
BZX84C3V0	Z13	3.0	2.8	3.2	5.0	95	600	1.0	10	1.0	-3.5	0
BZX84C3V3	Z14	3.3	3.1	3.5	5.0	95	600	1.0	5.0	1.0	-3.5	0
BZX84C3V6	Z15	3.6	3.4	3.8	5.0	90	600	1.0	5.0	1.0	-3.5	0
BZX84C3V9	Z16	3.9	3.7	4.1	5.0	90	600	1.0	3.0	1.0	-3.5	0
BZX84C4V3	Z17	4.3	4.0	4.6	5.0	90	600	1.0	3.0	1.0	-3.5	0.0
BZX84C4V7	Z1	4.7	4.4	5.0	5.0	80	500	1.0	3.0	2.0	-3.5	0.2
BZX84C5V1	Z2	5.1	4.8	5.4	5.0	60	480	1.0	2.0	2.0	-2.7	1.2
BZX84C5V6	Z3	5.6	5.2	6.0	5.0	40	400	1.0	1.0	2.0	-2.0	2.5
BZX84C6V2	Z4	6.2	5.8	6.6	5.0	10	150	1.0	3.0	4.0	0.4	3.7
BZX84C6V8	Z5	6.8	6.4	7.2	5.0	15	80	1.0	2.0	4.0	1.2	4.5
BZX84C7V5	Z6	7.5	7.0	7.9	5.0	15	80	1.0	1.0	5.0	2.5	5.3
BZX84C8V2	Z7	8.2	7.7	8.7	5.0	15	80	1.0	0.7	5.0	3.2	6.1
BZX84C9V1	Z8	9.1	8.5	9.6	5.0	15	100	1.0	0.5	6.0	3.8	7.0
BZX84C10	Z9	10	9.4	10.6	5.0	20	150	1.0	0.2	7.0	4.5	8.0
BZX84C11	Y1	11	10.4	11.6	5.0	20	150	1.0	0.1	8.0	5.4	9.0
BZX84C12	Y2	12	11.4	12.7	5.0	25	150	1.0	0.1	8.0	6	10.0
BZX84C13	Y3	13	12.4	14.1	5.0	30	170	1.0	0.1	8.0	7	11.0
BZX84C15	Y4	15	13.8	15.6	5.0	30	200	1.0	0.1	10.5	9.2	13.0
BZX84C16	Y5	16	15.3	17.1	5.0	40	200	1.0	0.1	11.2	10.4	14.0
BZX84C18	Y6	18	16.8	19.1	5.0	45	225	1.0	0.1	12.6	12.4	16.0
BZX84C20	Y7	20	18.8	21.2	5.0	55	225	1.0	0.1	14.0	14.4	18.0
BZX84C22	Y8	22	20.8	23.3	5.0	55	250	1.0	0.1	15.4	16.4	20.0
BZX84C24	Y9	24	22.8	25.6	5.0	70	250	1.0	0.1	16.8	18.4	22.0
BZX84C27	Y10	27	25.1	28.9	2.0	80	300	0.5	0.1	18.9	21.4	25.3
BZX84C30	Y11	30	28	32	2.0	80	300	0.5	0.1	21.0	24.4	29.4
BZX84C33	Y12	33	31	35	2.0	80	325	0.5	0.1	23.1	27.4	33.4
BZX84C36	Y13	36	34	38	2.0	90	350	0.5	0.1	25.2	30.4	37.4
BZX84C39	Y14	39	37	41	2.0	130	350	0.5	0.1	27.3	33.4	41.2

Notes: 1. Valid provided that device terminals are kept at ambient temperature .

2. Tested with pulses period = 5 ms, pulse width = 300  $\mu\text{s}$

3.  $f = 1\text{KHz}$

## Small Signal Product

### RATINGS AND CHARACTERISTICS CURVES (BZX84C2V4 - BZX84C39)

Fig. 1 Power Derating Curve

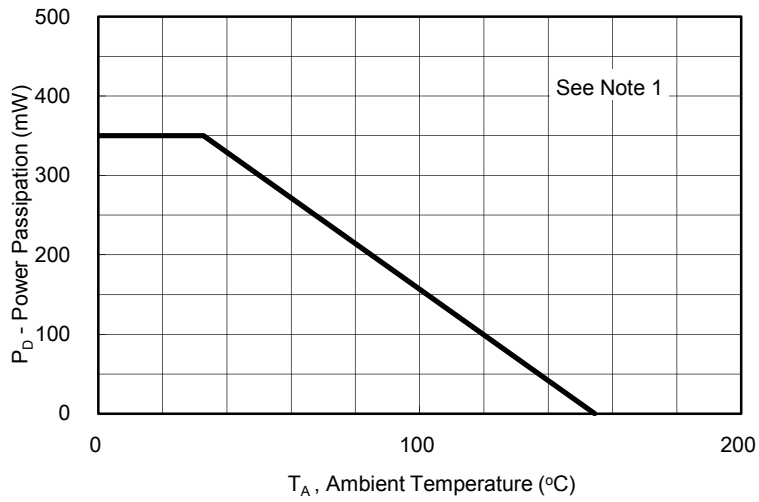


Fig. 2 Zener Breakdown Characteristics

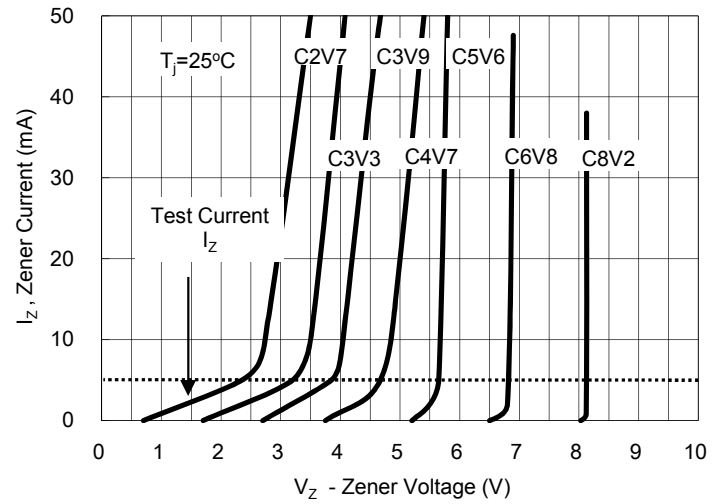


Fig. 3 Zener Breakdown Characteristics

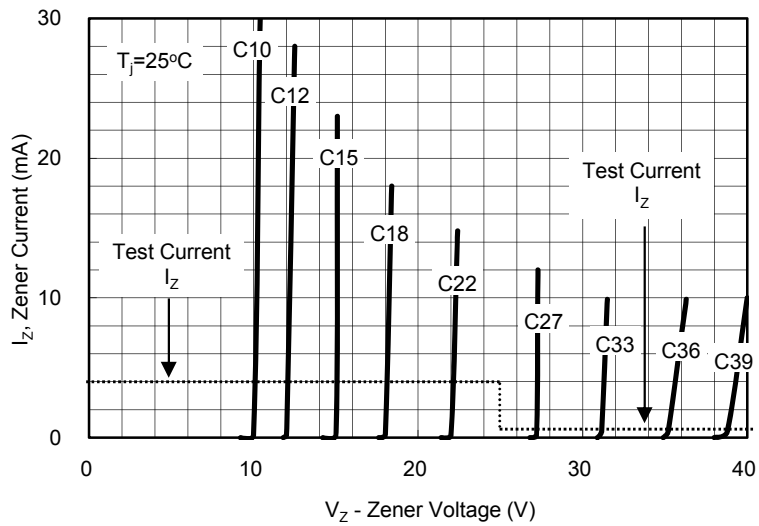
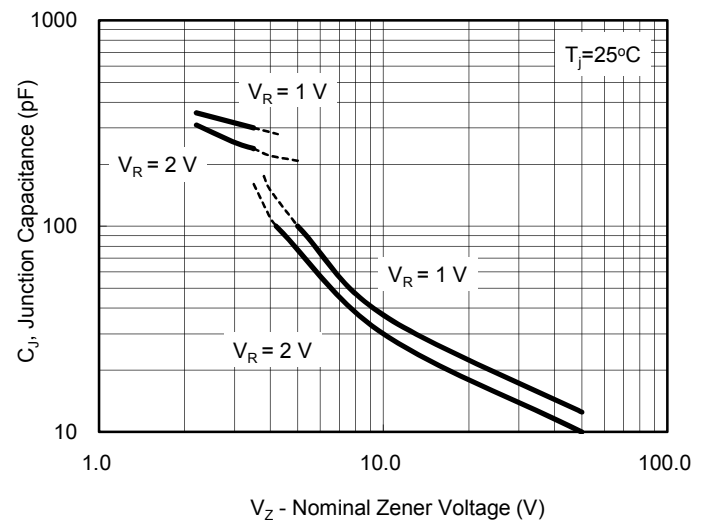


Fig. 4 Junction Capacitance VS. Nomial Zener Voltage



Small Signal Product

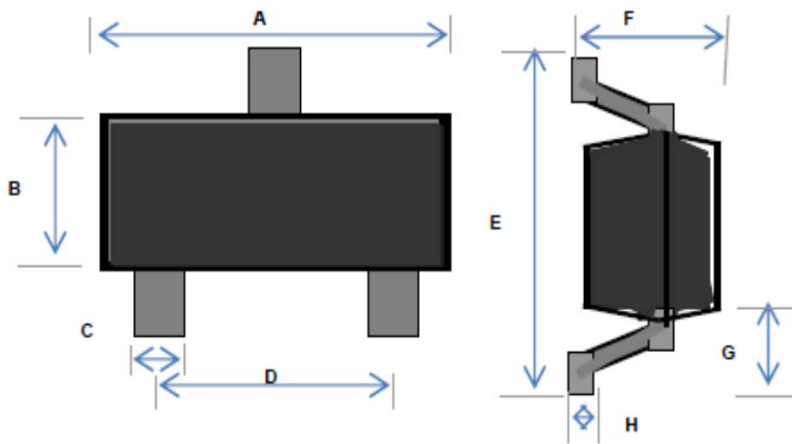
**Ordering information (Detail, example)**

Part No.	Package	Packing	Packing code	Packing code (Green)	Manufacture code
BZX84Cxx	SOT-23	10K / 13" Reel	R5	R5G	(Note 2)
		3K / 7" Reel	RU	RUG	
		3K / 7" Reel	RF	RFG	
BZX84C2V4	SOT-23	10K / 13" Reel	R5	R5G	

Note 1 : "xx" is Device Code from "2V4" thru "39".

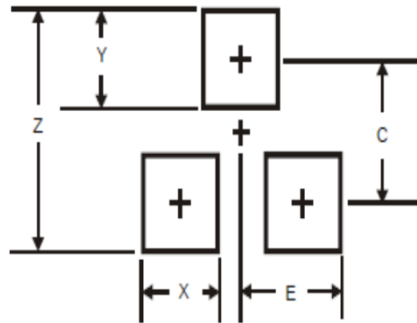
Note 2 : Manufacture special control, if empty means no special control requirement.

**Dimensions**



DIM.	Unit(mm)		Unit(inch)	
	Min	Max	Min	Max
A	2.70	3.10	0.106	0.122
B	1.10	1.50	0.043	0.059
C	0.30	0.51	0.012	0.020
D	1.78	2.04	0.070	0.080
E	2.20	2.60	0.087	0.102
F	0.90	1.30	0.035	0.051
G	0.550 REF		0.022 REF	
H	0.1 REF		0.004 REF	

**Suggested PAD Layout**



DIM.	Unit(mm)	Unit(inch)
	Typ.	Typ.
Z	2.9	0.114
X	0.8	0.031
Y	0.9	0.035
C	2.0	0.079
E	1.35	0.053