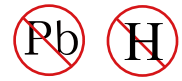




YEA SHIN TECHNOLOGY CO., LTD

BZX84Cxx Series

## 300mW Zener Voltage Regulator Diodes

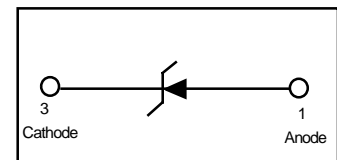
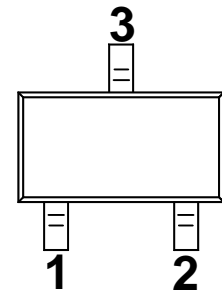


### Feature

Zener Voltage from 2.4V to 75V

Ultra-Small Surface Mount Package Power Dissipation

SOT-23



### THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR-5 Board(Note 1) $T_A = 25^{\circ}\text{C}$	$P_D$	225	mW
Derate above $25^{\circ}\text{C}$		1.8	mW/ $^{\circ}\text{C}$
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	556	$^{\circ}\text{C/W}$
Total Device Dissipation Alumina Substrate (Note 2), $T_A = 25^{\circ}\text{C}$	$P_D$	300	mW
Derate above $25^{\circ}\text{C}$		2.4	mW/ $^{\circ}\text{C}$
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	417	$^{\circ}\text{C/W}$
Junction and Storage Temperature	$T_J, T_{stg}$	-55to+150	$^{\circ}\text{C}$

Note 1. FR-5 = 1.0 x 0.75 x 0.62 in.

Note 2. Alumina = 0.4 x 0.3 x 0.024 in. 99.5% alumina.

# DEVICE CHARACTERISTICS

## BZX84Cxx Series

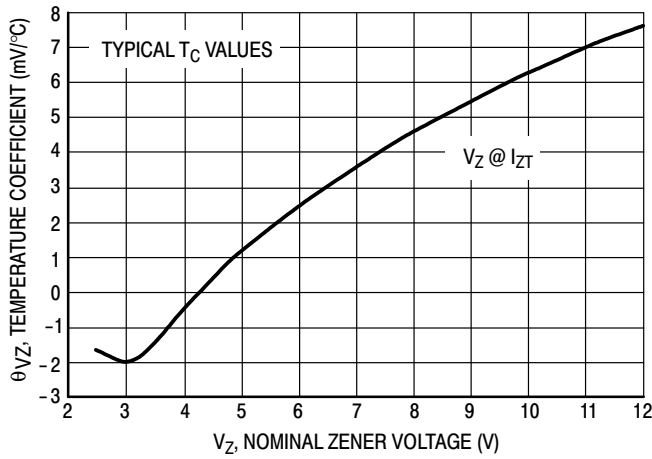
### ELECTRICAL CHARACTERISTICS

(Pinout: 1-Anode, 2-NC, 3-Cathode) ( $V_F = 0.9V$  Max @  $I_F = 10$  mA for all types)

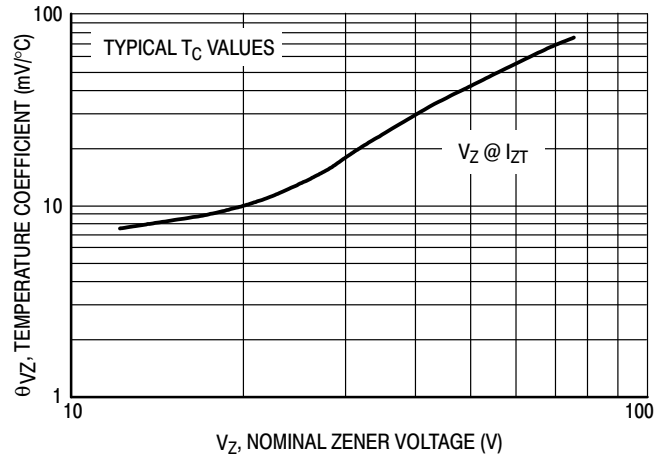
Part Number	Nominal Zener Voltage			Max. Zener Impedance				Reverse Leakage Current		Marking
	Min.	Nom.	Max.	@ IZT(mA)	ZZT( $\Omega$ )	ZZK( $\Omega$ )	@ IZK(mA)	IR( $\mu$ A)	@ VR(V)	
BZX84C2V4	2.2	2.4	2.6	5	100	600	1	50	1	Z11
BZX84C2V7	2.5	2.7	2.9	5	100	600	1	20	1	Z12
BZX84C3V0	2.8	3	3.2	5	95	600	1	10	1	Z13
BZX84C3V3	3.1	3.3	3.5	5	95	600	1	5	1	Z14
BZX84C3V6	3.4	3.6	3.8	5	90	600	1	5	1	Z15
BZX84C3V9	3.7	3.9	4.1	5	90	600	1	3	1	Z16
BZX84C4V3	4	4.3	4.6	5	90	600	1	3	1	W9
BZX84C4V7	4.4	4.7	5	5	80	500	1	3	2	Z1
BZX84C5V1	4.8	5.1	5.4	5	60	480	1	2	2	Z2
BZX84C5V6	5.2	5.6	6	5	40	400	1	1	2	Z3
BZX84C6V2	5.8	6.2	6.6	5	10	150	1	3	4	Z4
BZX84C6V8	6.4	6.8	7.2	5	15	80	1	2	4	Z5
BZX84C7V5	7	7.5	7.9	5	15	80	1	1	5	Z6
BZX84C8V2	7.7	8.2	8.7	5	15	80	1	0.7	5	Z7
BZX84C9V1	8.5	9.1	9.6	5	15	100	1	0.5	6	Z8
BZX84C10	9.4	10	10.6	5	20	150	1	0.2	7	Z9
BZX84C11	10.4	11	11.6	5	20	150	1	0.1	8	Y1
BZX84C12	11.4	12	12.7	5	25	150	1	0.1	8	Y2
BZX84C13	12.4	13	14.1	5	30	170	1	0.1	8	Y3
BZX84C15	13.8	15	15.6	5	30	200	1	0.05	10.5	Y4
BZX84C16	15.3	16	17.1	5	40	200	1	0.05	11.2	Y5
BZX84C18	16.8	18	19.1	5	45	225	1	0.05	12.6	Y6
BZX84C20	18.8	20	21.2	5	55	225	1	0.05	14	Y7
BZX84C22	20.8	22	23.3	5	55	250	1	0.05	15.4	Y8
BZX84C24	22.8	24	25.6	5	70	250	1	0.05	16.8	Y9
BZX84C27	25.1	27	28.9	2	80	300	0.5	0.05	18.9	Y10
BZX84C30	28	30	32	2	80	300	0.5	0.05	21	Y11
BZX84C33	31	33	35	2	80	325	0.5	0.05	23.1	Y12
BZX84C36	34	36	38	2	90	350	0.5	0.05	25.2	Y13
BZX84C39	37	39	41	2	130	350	0.5	0.05	27.3	Y14
BZX84C43	40	43	46	2	150	375	0.5	0.05	30.1	Y15
BZX84C47	44	47	50	2	170	375	0.5	0.05	32.9	Y16
BZX84C51	48	51	54	2	180	400	0.5	0.05	35.7	Y17
BZX84C56	52	56	60	2	200	425	0.5	0.05	39.2	Y18
BZX84C62	58	62	66	2	215	450	0.5	0.05	43.4	Y19
BZX84C68	64	68	72	2	240	475	0.5	0.05	47.6	Y20
BZX84C75	70	75	79	2	255	500	0.5	0.05	52.5	Y21

# DEVICE CHARACTERISTICS

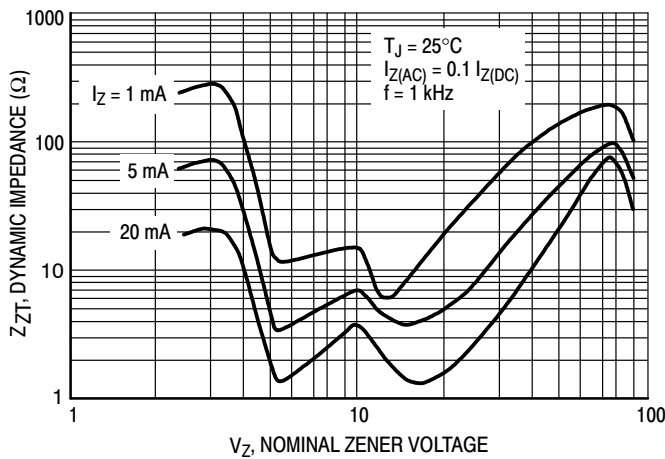
## BZX84Cxx Series



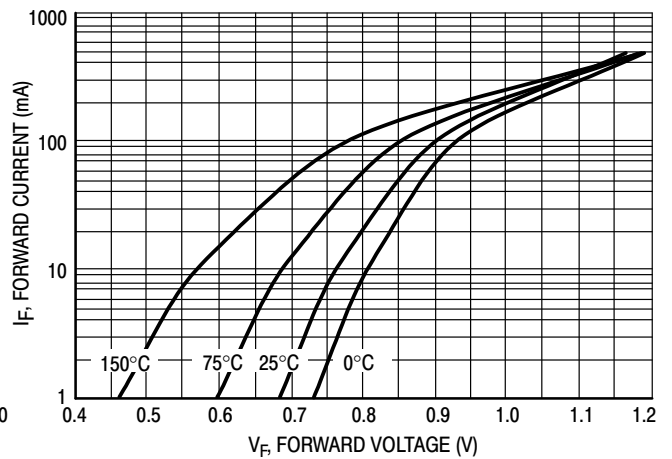
**Figure 1. Temperature Coefficients**  
(Temperature Range -55°C to +150°C)



**Figure 2. Temperature Coefficients**  
(Temperature Range -55°C to +150°C)



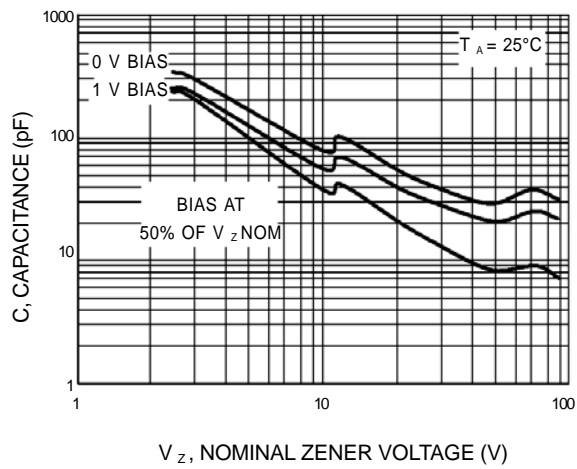
**Figure 3. Effect of Zener Voltage on Zener Impedance**



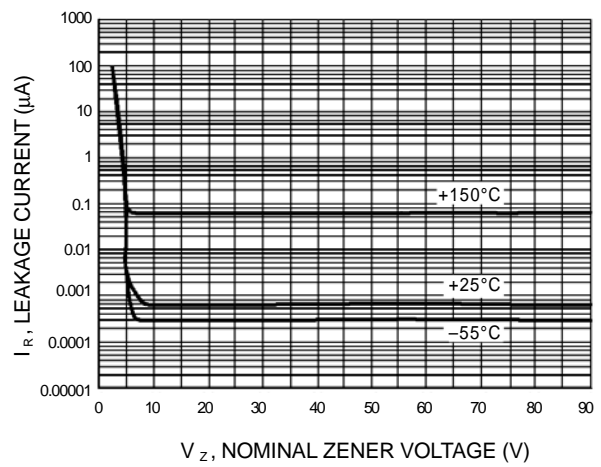
**Figure 4. Typical Forward Voltage**

# DEVICE CHARACTERISTICS

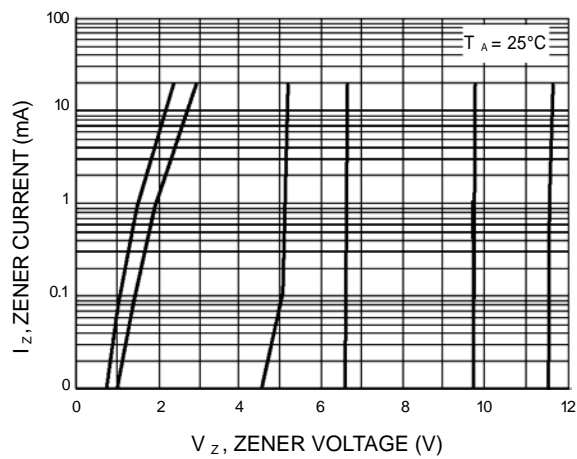
## BZX84Cxx Series



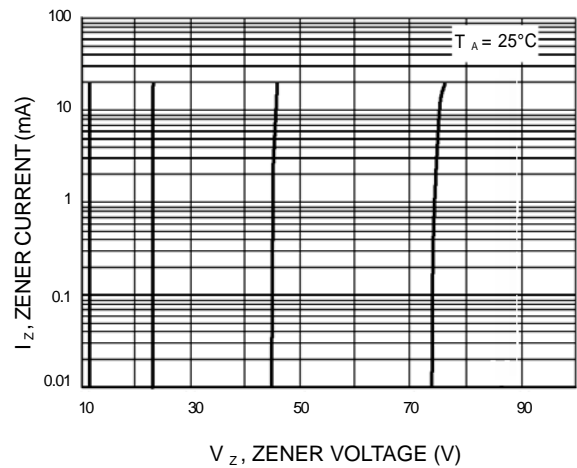
**Figure 5. Typical Capacitance**



**Figure 6. Typical Leakage Current**



**Figure 7. Zener Voltage versus Zener Current  
( $V_Z$  Up to 12 V)**



**Figure 8. Zener Voltage versus Zener Current  
(12 V to 75 V)**

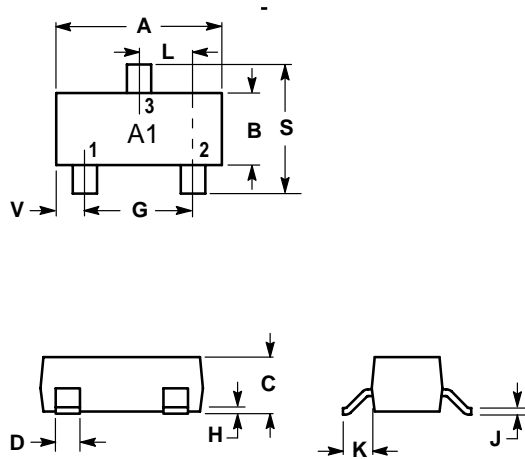
# PACKAGE OUTLINE & DIMENSIONS

## BZX84Cxx Series

### SOT-23

#### NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M,1982
2. CONTROLLING DIMENSION: INCH.



DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.1102	0.1197	2.80	3.04
B	0.0472	0.0551	1.20	1.40
C	0.0350	0.0440	0.89	1.11
D	0.0150	0.0200	0.37	0.50
G	0.0701	0.0807	1.78	2.04
H	0.0005	0.0040	0.013	0.100
J	0.0034	0.0070	0.085	0.177
K	0.0140	0.0285	0.35	0.69
L	0.0350	0.0401	0.89	1.02
S	0.0830	0.1039	2.10	2.64
V	0.0177	0.0236	0.45	0.60

