

BZX84C2V4 THRU BZX84C75

SURFACE MOUNT ZENER DIODES

SOT-23 SURFACE MOUNT SILICON ZENER DIODES

Features

- Low Zener Impedance
- Power Dissipation of 300mW
- High Stability and High Reliability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260°C

Applications

Zener diode is generally used as reference voltage sources in regulated power supplies or as protective diode in overvoltage protection circuits.

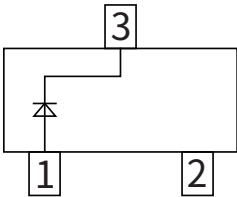
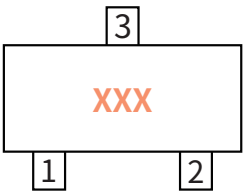
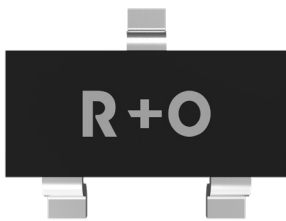
Mechanical Data

- Case: SOT-23
- Molding compound meets UL 94V-0 flammability rating, RoHS-compliant, halogen-free
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity: Cathode line denotes the cathode end

Function Diagram

Zener Diode
2.4 to 75 Volts
Power Dissipation
300 Milliwatts

SOT-23

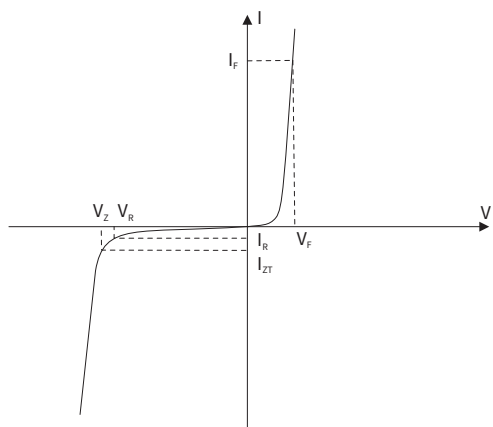


Maximum Ratings (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	VALUE
Power Dissipation	P_D	mW	300
Forward Voltage @ $I_F=10\text{mA}$	V_F	V	0.9
Storage Temperature	T_{stg}	°C	-55 ~ +150
Junction Temperature	T_J	°C	-55 ~ +150
Typical Thermal Resistance	$R_{\theta JA}$	°C /W	417

Electrical Parameter

SYMBOL	PARAMETER
V_Z	Reverse zener voltage @ I_{ZT}
I_{ZT}	Reverse current
Z_{ZT}	Maximum Zener Impedance @ I_{ZT}
I_{ZK}	Reverse Current
Z_{ZK}	Maximum Zener Impedance @ I_{ZK}
I_R	Reverse leakage current @ V_R
V_R	Reverse voltage
I_F	Forward current
V_F	Forward voltage @ I_F



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● Electrical Characteristics (Ta=25°C Unless otherwise noted)

Type Number	Marking	Nominal Zener Voltage				Zener Impedance			Leakage Current		Typical Temperature coefficient @ I _{ZTC} (mV/°C)		Admissible Zener Current
		V _Z (V)			I _{ZT}	Z _{ZT} @I _{ZT}	Z _{ZK} @I _{ZK}	I _{ZK}	I _R @V _R				
		Min.	Nom.	Max.	(mA)	(Ω)		(mA)	I _R (μA)	V _R (V)	Min.	Max.	I _{ZM} (mA)
BZX84C 2V4	Z11	2.2	2.4	2.6	5	100	600	1.0	50.0	1.0	-3.5	0.0	5
BZX84C 2V7	Z12	2.5	2.7	2.9	5	100	600	1.0	20.0	1.0	-3.5	0.0	5
BZX84C 3V0	Z13	2.8	3.0	3.2	5	95	600	1.0	10.0	1.0	-3.5	0.0	5
BZX84C 3V3	Z14	3.1	3.3	3.5	5	95	600	1.0	5.0	1.0	-3.5	0.0	5
BZX84C 3V6	Z15	3.4	3.6	3.8	5	90	600	1.0	5.0	1.0	-3.5	0.0	5
BZX84C 3V9	Z16	3.7	3.9	4.1	5	90	600	1.0	3.0	1.0	-3.5	0.0	5
BZX84C 4V3	Z17	4.0	4.3	4.6	5	90	600	1.0	3.0	1.0	-3.5	0.0	5
BZX84C 4V7	Z1	4.4	4.7	5.0	5	80	500	1.0	3.0	2.0	-3.5	0.2	5
BZX84C 5V1	Z2	4.8	5.1	5.4	5	60	480	1.0	2.0	2.0	-2.7	1.2	5
BZX84C 5V6	Z3	5.2	5.6	6.0	5	40	400	1.0	1.0	2.0	-2.0	2.5	5
BZX84C 6V2	Z4	5.8	6.2	6.6	5	10	150	1.0	3.0	4.0	0.4	3.7	5
BZX84C 6V8	Z5	6.4	6.8	7.2	5	15	80	1.0	2.0	4.0	1.2	4.5	5
BZX84C 7V5	Z6	7.0	7.5	7.9	5	15	80	1.0	1.0	5.0	2.5	5.3	5
BZX84C 8V2	Z7	7.7	8.2	8.7	5	15	80	1.0	0.7	5.0	3.2	6.2	5
BZX84C 9V1	Z8	8.5	9.1	9.6	5	15	100	1.0	0.5	6.0	3.8	7.0	5
BZX84C 10	Z9	9.4	10	10.6	5	20	150	1.0	0.2	7.0	4.5	8.0	5
BZX84C 11	Y1 •	10.4	11	11.6	5	20	150	1.0	0.1	8.0	5.4	9.0	5
BZX84C 12	Y2 •	11.4	12	12.7	5	25	150	1.0	0.1	8.0	6.0	10	5
BZX84C 13	Y3	12.4	13	14.1	5	30	170	1.0	0.1	8.0	7.0	11	5
BZX84C 15	Y4	13.8	15	15.6	5	30	200	1.0	0.1	10.5	9.2	13	5
BZX84C 16	Y5	15.3	16	17.1	5	40	200	1.0	0.1	11.2	10.4	14	5
BZX84C 18	Y6 •	16.8	18	19.1	5	45	225	1.0	0.1	12.6	12.4	16	5
BZX84C 20	Y7	18.8	20	21.2	5	55	225	1.0	0.1	14	14.4	18	5
BZX84C 22	Y8	20.8	22	23.3	5	55	250	1.0	0.1	15.4	16.4	20	5
BZX84C 24	Y9	22.8	24	25.6	5	70	250	1.0	0.1	16.8	18.4	22	5
BZX84C 27	Y10	25.1	27	28.9	2	80	300	0.5	0.1	18.9	21.4	25.3	2
BZX84C 30	Y11 •	28	30	32	2	80	300	0.5	0.1	21	24.4	29.4	2
BZX84C 33	Y12	31	33	35	2	80	325	0.5	0.1	23.1	27.1	33.4	2
BZX84C 36	Y13	34	36	38	2	90	350	0.5	0.1	25.2	30.4	37.4	2
BZX84C 39	Y14	37	39	41	2	130	350	0.5	0.1	27.3	33.4	41.2	2
BZX84C 43	Y15	40	43	46	2	100	700	1.0	0.1	32	10	12	2
BZX84C 47	Y16	44	47	50	2	100	750	1.0	0.1	35	10	12	2
BZX84C 51	Y17	48	51	54	2	125	750	1.0	0.1	38	10	12	2
BZX84C 56	Y18	52	56	60	2	135	700	1.0	0.1	39	10	12	2
BZX84C 62	Y19	58	62	66	2	200	1000	1.0	0.2	47	10	12	2
BZX84C 68	Y20	64	68	72	2	250	1000	1.0	0.2	52	10	12	2
BZX84C 75	Y21 •	70	75	79	2	300	1000	1.0	0.2	57	10	12	2

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● Ratings And Characteristics Curves ($T_a=25^\circ\text{C}$ Unless otherwise specified)

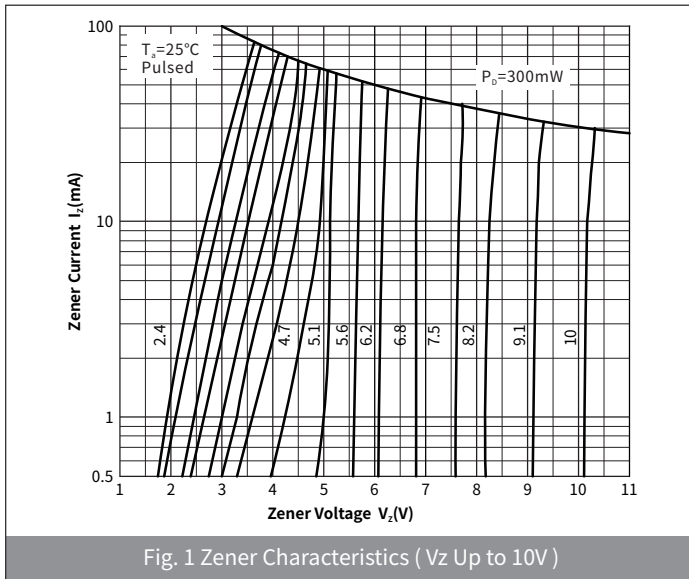


Fig. 1 Zener Characteristics (V_z Up to 10V)

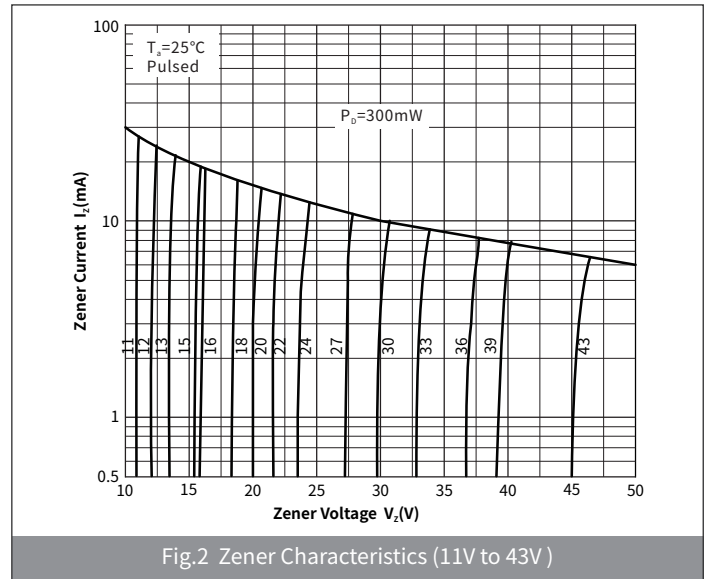


Fig.2 Zener Characteristics (11V to 43V)

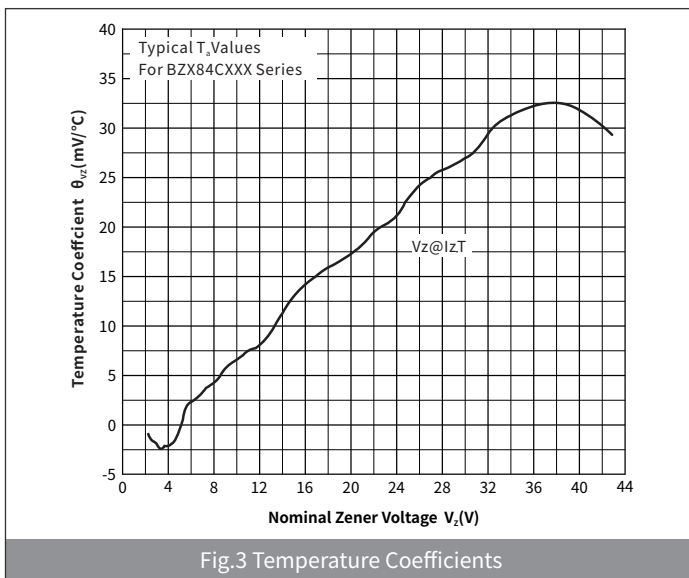


Fig.3 Temperature Coefficients

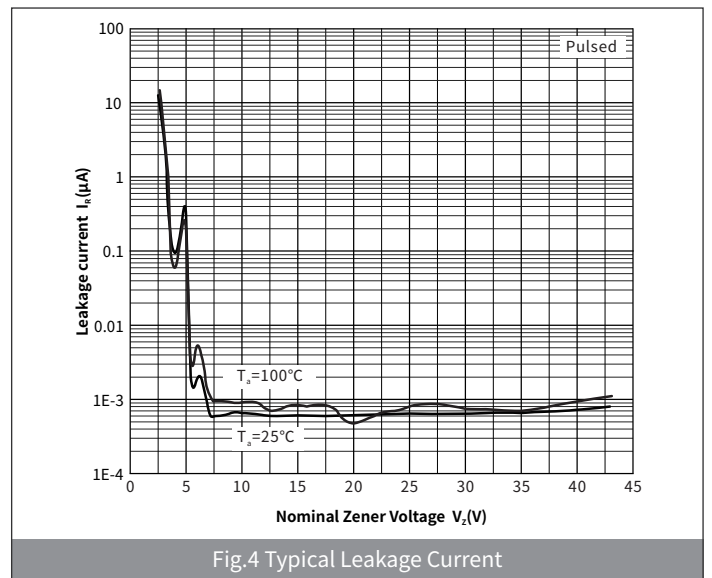


Fig.4 Typical Leakage Current

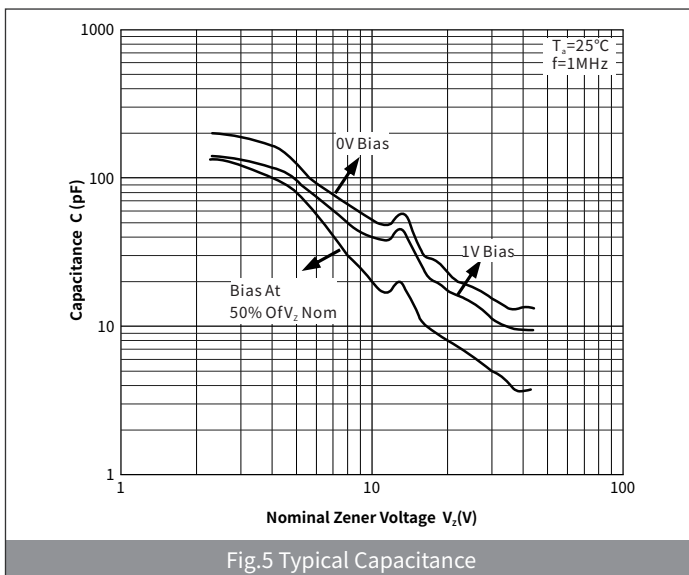


Fig.5 Typical Capacitance

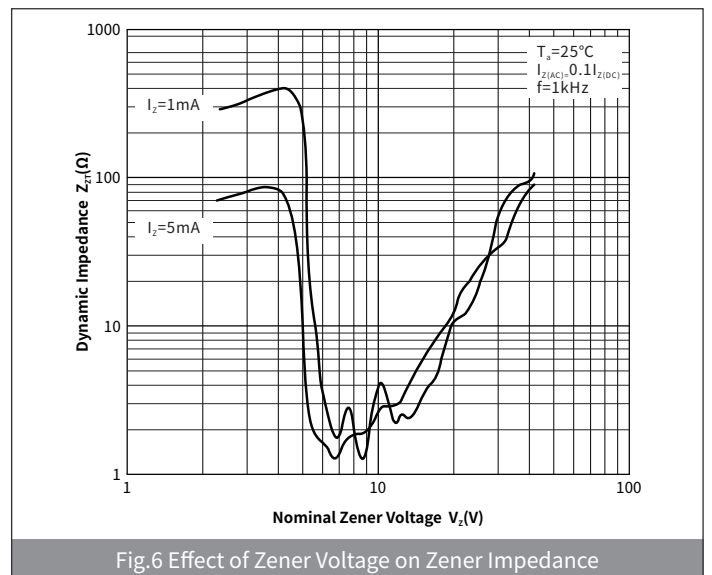


Fig.6 Effect of Zener Voltage on Zener Impedance

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Ordering Information

PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SOT-23	R1	0.008	3000	45000	180000	7"

Package Outline Dimensions (SOT-23)

Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.90	1.15	0.035	0.045
A1	-	0.10	-	0.004
A2	0.90	1.05	0.035	0.041
b	0.30	0.50	0.012	0.020
c	0.10	0.20	0.004	0.008
D	2.80	3.00	0.110	0.118
E	1.20	1.40	0.047	0.055
E1	2.25	2.55	0.089	0.100
e	0.950TYP		0.037TYP	
e1	1.80	2.00	0.071	0.079
L	0.550REF		0.022REF	
L1	0.30	0.50	0.012	0.020
θ	-	8°	-	8°

Suggested Pad Layout

Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
J	0.75	0.85	0.030	0.033
K	0.85	0.95	0.033	0.037
M	1.95	2.05	0.077	0.081
N	1.85	1.95	0.073	0.077