

550mW, 2.4V - 75V Surface Mount Zener Diode

FEATURES

- AEC-Q101 qualified
- Zener voltage range selection: 2.4V to 75V
- V_Z tolerance selection of $\pm 2\%$
- Ideally suited for automated assembly processes
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free

KEY PARAMETERS

PARAMETER	VALUE	UNIT
P_D	550	mW
V_Z	2.4 - 75	V
$T_{J\text{ MAX}}$	150	°C
V_F at $I_F=10\text{mA}$	0.9	V
Configuration	Single die	

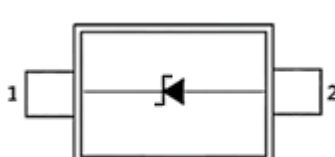
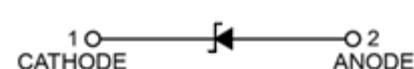
APPLICATIONS

- General regulation functions

MECHANICAL DATA

- Case: SOD-323F
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: Indicated by cathode band
- Weight: 4.60mg (approximately)



PACKAGE: SOD-323F	PIN CONFIGURATION	CIRCUIT DIAGRAM
		

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	VALUE	UNIT
Power dissipation ⁽¹⁾	P_D	550	mW
Forward voltage @ $I_F=10\text{mA}$	V_F	0.9	V
Junction temperature	T_J	-55 to +150	°C
Storage temperature	T_{STG}	-55 to +150	°C

Note:

1. Device mounted on an FR4 Printed-Circuit Board (PCB), single-sided copper, tin-plated, 1cm² pad

THERMAL PERFORMANCE

PARAMETER	SYMBOL	TYP	UNIT
Junction-to-ambient thermal resistance ⁽¹⁾	$R_{\theta JA}$	227	°C/W

Thermal Performance Note:

1. Device mounted on an FR4 Printed-Circuit Board (PCB), single-sided copper, tin-plated, 1cm² pad

ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

PART NUMBER	DEVICE MARKING	ZENER VOLTAGE			TEST CURRENT	REGULAR IMPEDANCE		TEST CURRENT	LEAKAGE CURRENT	
		$V_Z @ I_{ZT}$			I_{ZT}	Z_{ZT} @ I_{ZT}	Z_{ZK} @ I_{ZK}	I_{ZK}	$I_R @ V_R$	
		V			mA	Ω	Ω	mA	μA	V
		Min	Nom	Max		Max	Max		Max	
BZX84JB2V4H	<u>SL</u>	2.35	2.4	2.45	5	100	600	1.0	50	1.0
BZX84JB2V7H	<u>SM</u>	2.65	2.7	2.75	5	100	600	1.0	20	1.0
BZX84JB3V0H	<u>ST</u>	2.94	3.0	3.06	5	95	600	1.0	10	1.0
BZX84JB3V3H	<u>SU</u>	3.23	3.3	3.37	5	95	600	1.0	5	1.0
BZX84JB3V6H	<u>SV</u>	3.53	3.6	3.67	5	90	600	1.0	5	1.0
BZX84JB3V9H	<u>SW</u>	3.82	3.9	3.98	5	90	600	1.0	3	1.0
BZX84JB4V3H	<u>SZ</u>	4.21	4.3	4.39	5	90	600	1.0	3	1.0
BZX84JB4V7H	<u>TA</u>	4.61	4.7	4.79	5	80	500	1.0	3	2.0
BZX84JB5V1H	<u>TD</u>	5.00	5.1	5.20	5	60	480	1.0	2	2.0
BZX84JB5V6H	<u>TE</u>	5.49	5.6	5.71	5	40	400	1.0	1	2.0
BZX84JB6V2H	<u>TH</u>	6.08	6.2	6.32	5	10	150	1.0	3	4.0
BZX84JB6V8H	<u>TK</u>	6.66	6.8	6.94	5	15	80	1.0	2	4.0
BZX84JB7V5H	<u>TM</u>	7.35	7.5	7.65	5	15	80	1.0	1	5.0
BZX84JB8V2H	<u>TN</u>	8.04	8.2	8.36	5	15	80	1.0	0.7	5.0
BZX84JB9V1H	<u>TP</u>	8.92	9.1	9.28	5	15	100	1.0	0.5	6.0
BZX84JB10H	<u>S8</u>	9.80	10	10.20	5	10	150	1.0	0.2	7.0
BZX84JB11H	<u>S9</u>	10.78	11	11.22	5	20	150	1.0	0.1	8.0
BZX84JB12H	<u>SA</u>	11.76	12	12.24	5	25	150	1.0	0.1	8.0
BZX84JB13H	<u>SB</u>	12.74	13	13.26	5	30	170	1.0	0.1	8.0
BZX84JB15H	<u>SC</u>	14.70	15	15.30	5	30	200	1.0	0.1	10.5
BZX84JB16H	<u>SD</u>	15.68	16	16.32	5	40	200	1.0	0.1	11.2
BZX84JB18H	<u>SE</u>	17.64	18	18.36	5	45	225	1.0	0.1	12.6
BZX84JB20H	<u>SF</u>	19.60	20	20.40	5	55	225	1.0	0.1	14.0
BZX84JB22H	<u>SG</u>	21.56	22	22.44	5	55	250	1.0	0.1	15.4
BZX84JB24H	<u>SH</u>	23.52	24	24.48	5	70	250	1.0	0.1	16.8
BZX84JB27H	<u>SK</u>	26.46	27	27.54	2	80	300	0.5	0.1	18.9
BZX84JB30H	<u>SN</u>	29.40	30	30.60	2	80	300	0.5	0.1	21.0
BZX84JB33H	<u>SP</u>	32.34	33	33.66	2	80	325	0.5	0.1	23.1
BZX84JB36H	<u>SR</u>	35.28	36	36.72	2	90	350	0.5	0.1	25.2
BZX84JB39H	<u>SS</u>	38.22	39	39.78	2	130	350	0.5	0.1	27.3
BZX84JB43H	<u>SX</u>	42.14	43	43.86	2	130	350	0.5	0.1	29.4
BZX84JB47H	<u>SY</u>	45.83	47	48.17	2	170	1000	0.25	0.1	36
BZX84JB51H	<u>TB</u>	49.73	51	52.27	2	180	1300	0.25	0.1	39
BZX84JB56H	<u>TC</u>	54.60	56	57.40	2	200	1400	0.25	0.1	43
BZX84JB62H	<u>TF</u>	60.45	62	63.55	2	225	1400	0.25	0.1	47
BZX84JB68H	<u>TG</u>	66.30	68	69.70	2	240	1600	0.25	0.1	52
BZX84JB75H	<u>TL</u>	73.13	75	76.87	2	265	1700	0.25	0.1	56

ORDERING INFORMATION

ORDERING CODE⁽¹⁾	PACKAGE	PACKING
BZX84JBxxxH RRG	SOD-323F	3,000 / 7" Tape & Reel

Notes:

1. "xxx" defines voltage from 2.4V(BZX84JB2V4H) to 75V(BZX84JB75H)

CHARACTERISTICS CURVES

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

Fig.1 Power Dissipation Curve

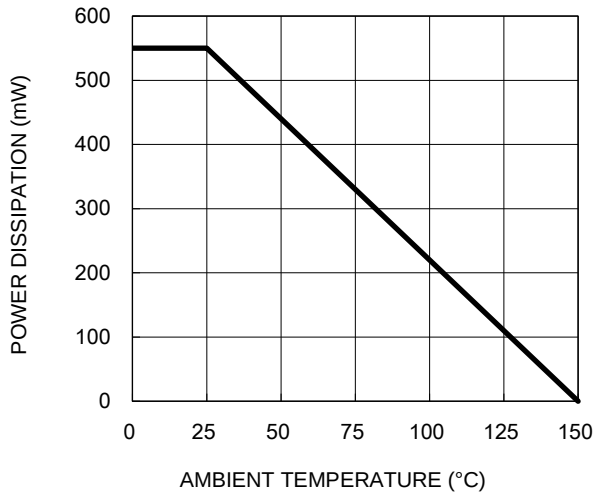


Fig.2 Zener Breakdown Characteristics

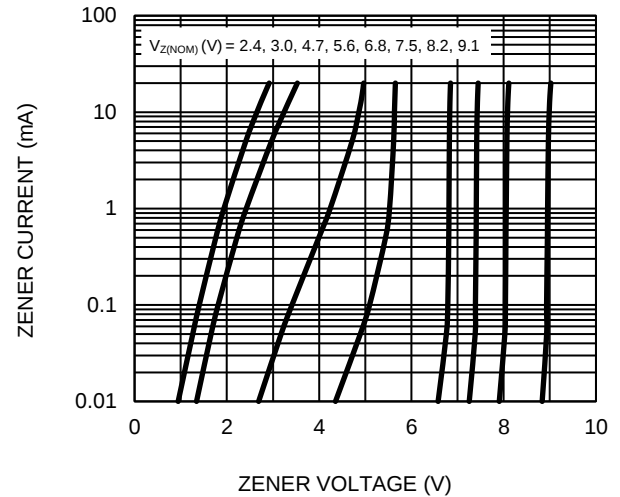


Fig.3 Zener Breakdown Characteristics

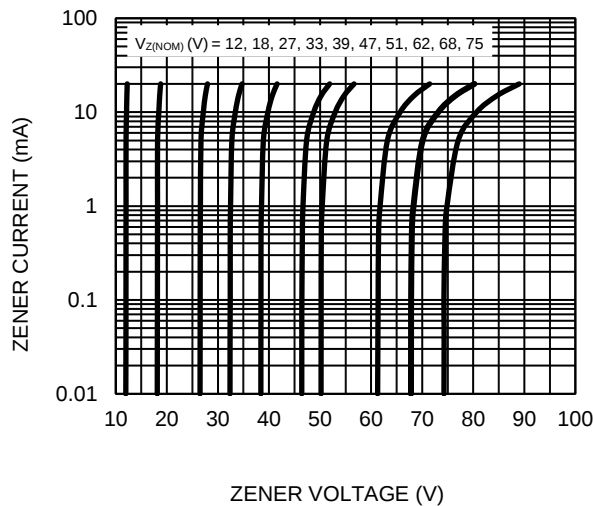


Fig.4 Typical Junction Capacitance

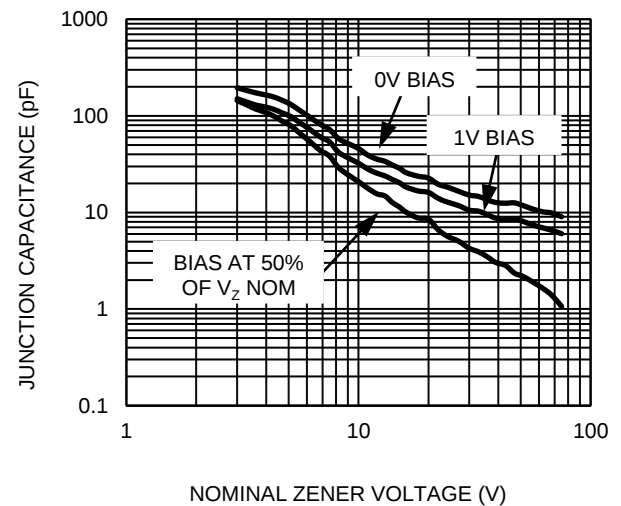
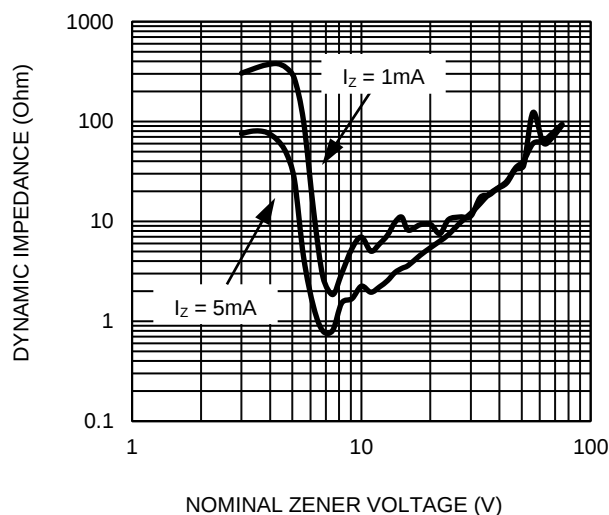
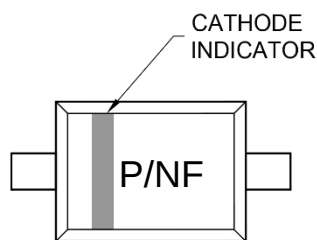
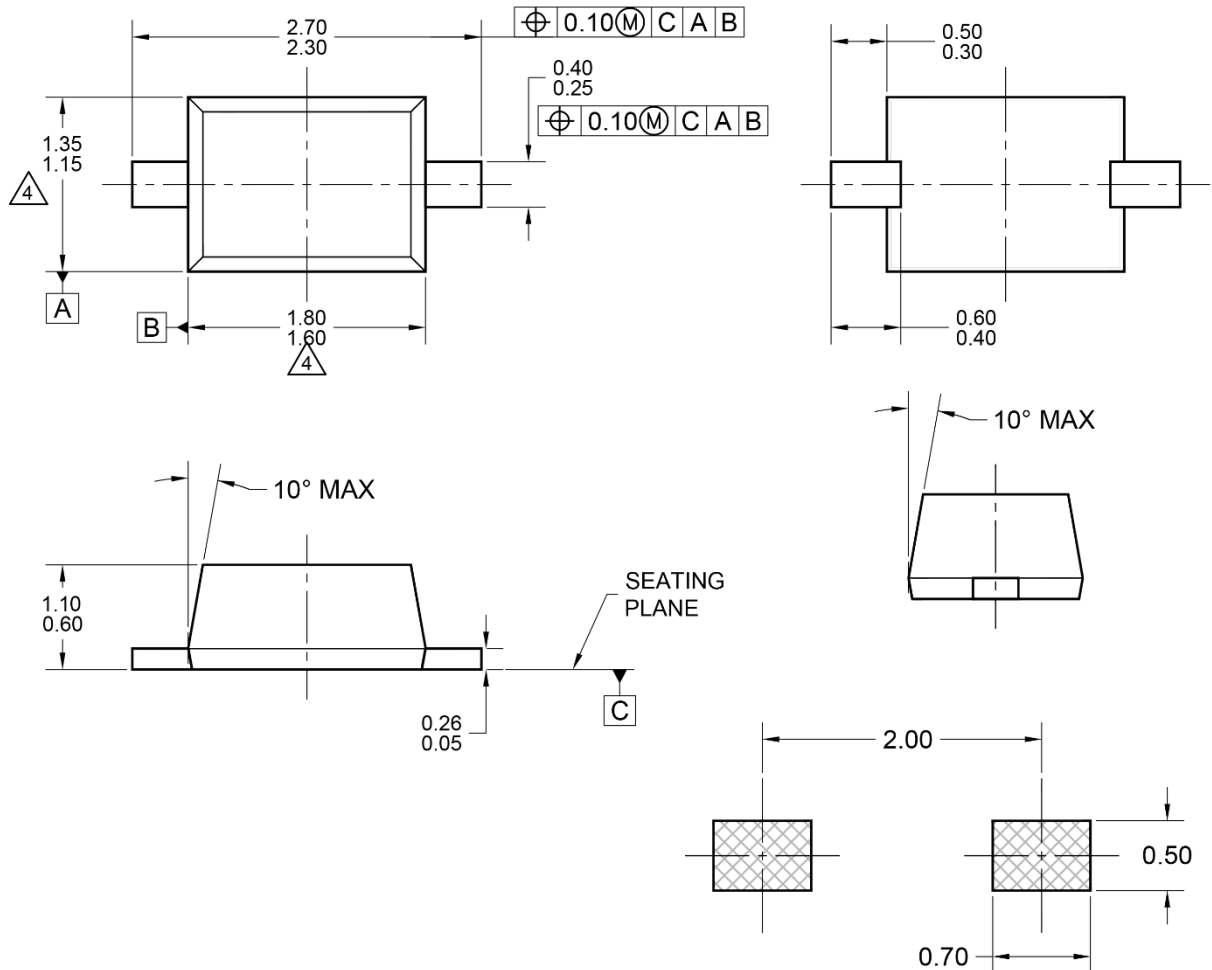


Fig.5 Effect of Zener Voltage on Impedance



PACKAGE OUTLINE DIMENSION

SOD-323F



MARKING DIAGRAM

P/N = Device marking
F = Factory code

SUGGESTED PAD LAYOUT

NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994.
3. PACKAGE OUTLINE REFERENCE: EIAJ ED-7500A-1, SC-90.

4. MOLDED PLASTIC BODY LATERAL DIMENSIONS DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.

5. DWG NO. REF: HQ2SD07-SOD323F-018 REV B.

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