0.4W SURFACE MOUNT PRECISION ZENER DIODE

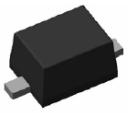
Features

- 400mW Power Dissipation on FR-4 PCB
- Very Tight Tolerance on V_Z
- Ideally Suited for Automated Assembly Processes
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

Mechanical Data

- Case: SOD323F
- Case Material: Molded Plastic, "Green" Molding Compound; UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections: Cathode Band
- Terminals: Finish - Matte Tin Annealed over Copper Alloy leadframe. Solderable per MIL-STD-202, Method 208 e3
- Weight: 0.01 grams (Approximate)

SOD323F



Top View

Ordering Information (Note 4)

Part Number	Case	Packaging
(Type Number)-7*	SOD323F	3,000/Tape & Reel

* Example: The part number for the 3.6 Volt device would be D3Z3V6BF-7.

Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
2. See http://www.diodes.com/quality/lead_free.html for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
4. For packaging details, go to our website at http://www.diodes.com/products/packages.html.

Marking Information

XX = Product Type Marking Code
(See Electrical Characteristics Table)
YM = Date Code Marking
Y = Year (ex: X = 2010)
M = Month (ex: 9 = September)

Date Code Key

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Code	X	Y	Z	A	B	C	D	E	F	G	H

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

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Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Characteristic		Symbol	Value	Unit
Forward Voltage	@ I_F = 10mA	V_F	0.9	V

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P_D	400	mW
Thermal Resistance, Junction to Ambient Air (Note 5)	$R_{\theta JA}$	312.5	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +150	°C

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Type Number	Marking Code	Zener Voltage Range (Note 6)			Maximum Zener Impedance f = 1kHz			Maximum Reverse Current (Note 7)		Typical Temperature Coefficient	Typical Total Capacitance
		V_Z @ I_{ZT}		I_{ZT}	Z_{ZT} @ I_{ZT}	Z_{ZK} @ I_{ZK}	I_{ZK}	I_R	@ V_R	@ I_{ZT} = 5mA	@ V_R = 0V, f = 1MHz
		Min (V)	Max (V)	mA	Ω		mA	µA	V	mV/°C	pF
D3Z2V4BF	L0	2.43	2.63	5	100	1000	0.5	50	1	-1.6	215
D3Z2V7BF	L1	2.69	2.91	5	100	1000	0.5	20	1	-1.7	205
D3Z3V0BF	L2	2.85	3.07	5	95	1000	0.5	10	1	-1.7	195
D3Z3V3BF	L3	3.32	3.53	5	95	1000	0.5	5	1	-1.9	145
D3Z3V6BF	L4	3.60	3.85	5	90	500	1.0	5	1	-2.4	185
D3Z3V9BF	L5	3.89	4.16	5	90	500	1.0	3	1	-2.5	175
D3Z4V3BF	L6	4.17	4.48	5	90	600	1.0	3	1	-2.5	165
D3Z4V7BF	L7	4.55	4.75	5	90	600	1.0	2	1	-1.1	150
D3Z5V1BF	GM, L8	4.96	5.20	5	60	250	0.5	2	1.5	0.3	145
D3Z5V6BF	L9	5.48	5.73	5	50	100	0.5	1	2.5	1.7	20
D3Z6V2BF	LA	6.06	6.33	5	50	80	0.5	0.5	3	2.5	95
D3Z6V8BF	LB	6.65	6.93	5	40	60	0.5	0.5	3.5	3.4	82
D3Z7V5BF	LC	7.28	7.60	5	10	60	0.5	0.5	4	4.0	70
D3Z8V2BF	LD	8.02	8.36	5	10	60	0.5	0.5	5	4.6	57
D3Z9V1BF	LE	8.85	9.23	5	10	60	0.5	0.5	6	5.0	50
D3Z10BF	LF	9.77	10.21	5	10	60	0.5	0.1	7	6.1	45
D3Z11BF	LG	10.78	11.22	5	10	60	0.5	0.1	8	7.4	41
D3Z12BF	LH	11.74	12.24	5	10	80	0.5	0.1	9	8.2	36
D3Z13BF	LJ	12.91	13.49	5	10	80	0.5	0.1	10	9.4	33
D3Z15BF	LK	14.34	14.98	5	15	80	0.5	0.05	11	12.1	28
D3Z16BF	LL	15.85	16.51	5	20	80	0.5	0.05	12	13.7	25
D3Z18BF	LM	17.56	18.35	5	20	80	0.5	0.05	13	15.8	24
D3Z20BF	LN	19.52	20.39	5	20	100	0.5	0.05	15	16.4	22
D3Z22BF	LP	21.54	22.47	5	25	100	0.5	0.05	17	18.4	20
D3Z24BF	LQ	23.72	24.78	5	30	120	0.5	0.05	19	20.4	18
D3Z27BF	LR	26.19	27.53	5	40	150	0.5	0.05	21	18.0	17
D3Z30BF	LS	29.19	30.69	5	40	200	0.5	0.05	23	28.6	17
D3Z33BF	LT	32.15	33.79	5	40	250	0.5	0.05	25	32.2	15
D3Z36BF	LU	35.07	36.87	5	60	300	0.5	0.05	27	34.9	14

Notes: 5. Device mounted on FR-4 PCB with suggested pad layout, board size 35mm * 25mm.
6. The Zener voltage is measured <40ms after power is supplied.
7. Short duration pulse test used to minimize self-heating effect.

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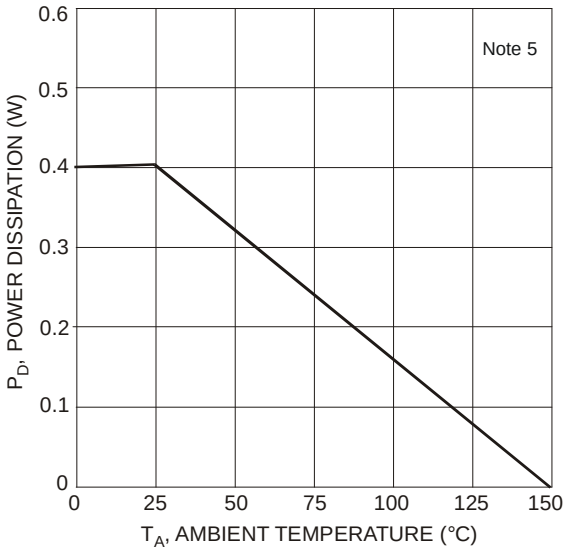

Fig. 1 Power Derating Curve

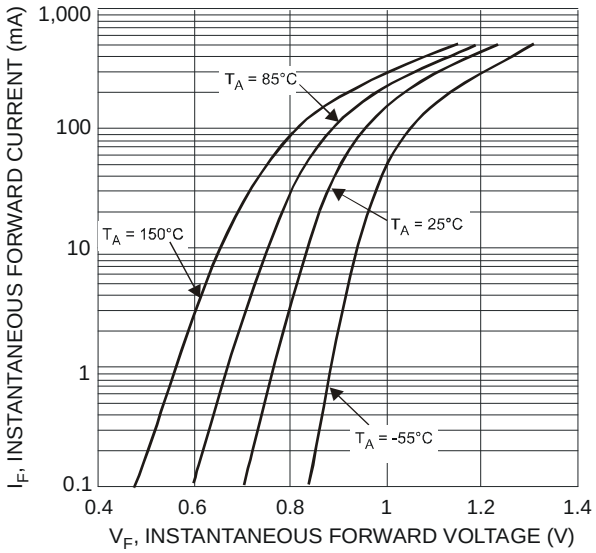

Fig. 2 Typical Forward Characteristics

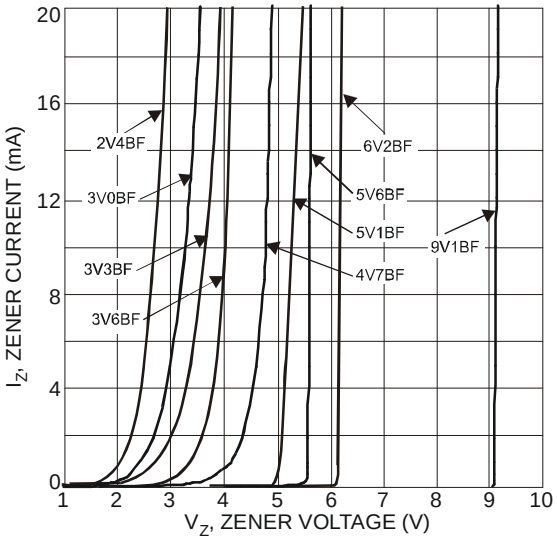

Fig. 3 Typical Zener Breakdown Characteristics

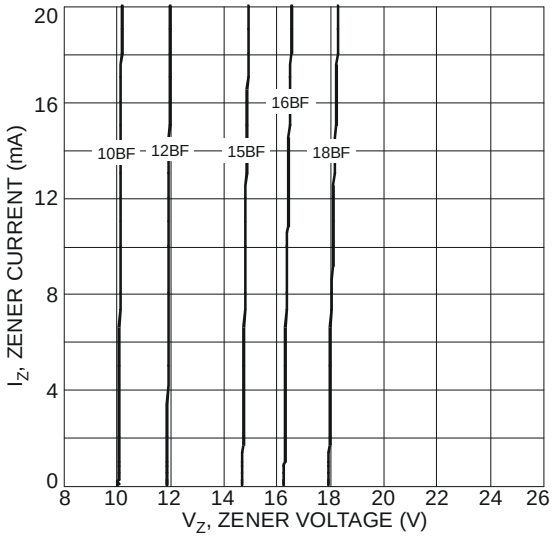

Fig. 4 Typical Zener Breakdown Characteristics

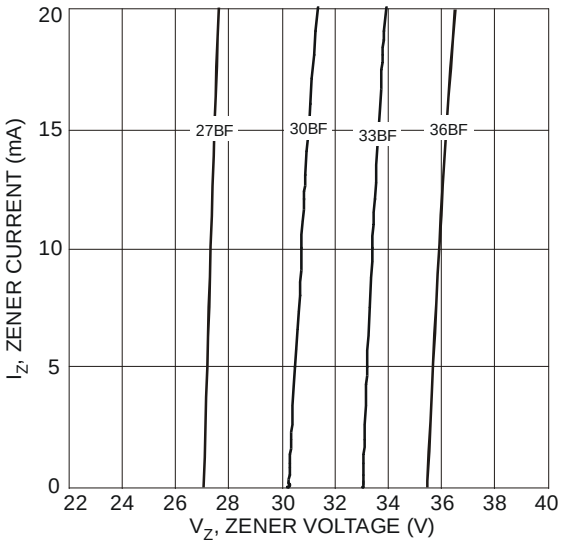

Fig. 5 Typical Zener Breakdown Characteristics

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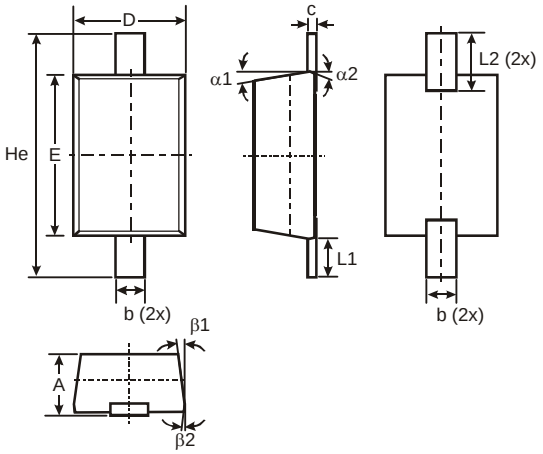
Package Outline Dimensions

Please see AP02001 at http://www.diodes.com/_files/datasheets/ap02001.pdf for the latest version.

SOD323F

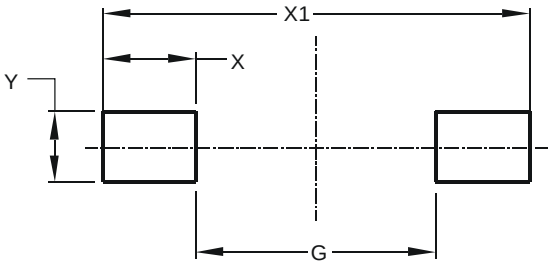


SOD323F			
Dim	**Min**	**Max**	**Typ**
A	0.60	0.75	–
b	0.25	0.35	–
c	0.05	0.26	–
D	1.15	1.35	1.25
E	1.60	1.80	1.70
He	2.30	2.70	2.50
L1	0.30	0.50	0.40
L2	0.41	0.61	0.51
α1	–	–	7°
α2	–	–	3°
β1	–	–	7°
β2	–	–	3°
All Dimensions in mm			

Suggested Pad Layout

Please see AP02001 at http://www.diodes.com/_files/datasheets/ap02001.pdf for the latest version.

SOD323F



Dimensions	Value (in mm)
G	1.280
X	0.710
X1	2.700
Y	0.403

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