Features

- Planar Die Construction
- Small Surface Mount Package
- Ideally Suited for Automated Assembly Processes
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Notes 3 & 4)**
- **Qualified to AEC-Q101 Standards for High Reliability**

Mechanical Data

- Case: SOD323
- Case Material: Molded Plastic.
  UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish Annealed over Alloy 42 Leadframe (Lead Free Plating).
  Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band
- Weight: 0.0049 grams (Approximate)

SOD323

Top View

Ordering Information (Note 5)

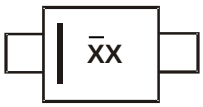
Part Number	Qualification	Case	Packaging
(Type Number)-7-F*	Commercial	SOD323	3,000/Tape & Reel
(Type Number)Q-7-F*	Automotive	SOD323	3,000/Tape & Reel

*Add "-7-F" to the appropriate type number in Electrical Characteristics Table, example: 6.2V Zener – BZT52C6V2S-7-F.

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. Product manufactured with Date Code V9 (week 33, 2008) and newer are built with Green Molding Compound. Products manufactured prior to Date Code V9 are built with Non-Green Molding Compound and may contain Halogens or Sb_2O_3 Fire Retardants.
5. For packaging details, go to our website at http://www.diodes.com/products/packages.html.

Marking Information

XX = Product Type Marking Code for SAT (Shanghai Assembly / Test site) (See Electrical Characteristics Table)



$\overline{XX}$ = Product Type Marking Code for CAT (Chengdu Assembly / Test site) (See Electrical Characteristics Table)

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

Single phase, half wave, 60Hz, resistive or inductive load.
For capacitance load, derate current by 20%.

Characteristic		Symbol	Value	Unit
Forward Voltage (Note 6)	@I_F = 10mA	V_F	0.9	V

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 7)	P_D	200	mW
Thermal Resistance, Junction to Ambient Air (Note 7)	$R_{\theta JA}$	625	°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 4)				Maximum Zener Impedance f = 1kHz			Maximum Reverse Current (Note 6)		Temperature Coefficient of Zener Voltage @I_{ZT} = 5mA mV/°C	
		V_Z @I_{ZT}			I_{ZT}	Z_{ZT} @I_{ZT}	Z_{ZK} @I_{ZK}	I_{ZK}	I_R	@V_R		
		Nom (V)	Min (V)	Max (V)	(mA)	Ω		mA	uA	V	Min	Max
BZT52C2V0S	WY	2.0	1.91	2.09	5	100	600	1.0	150	1.0	-3.5	0
BZT52C2V4S	WX	2.4	2.20	2.60	5	100	600	1.0	50	1.0	-3.5	0
BZT52C2V7S	W1	2.7	2.5	2.9	5	100	600	1.0	20	1.0	-3.5	0
BZT52C3V0S	W2	3.0	2.8	3.2	5	95	600	1.0	10	1.0	-3.5	0
BZT52C3V3S	W3	3.3	3.1	3.5	5	95	600	1.0	5	1.0	-3.5	0
BZT52C3V6S	W4	3.6	3.4	3.8	5	90	600	1.0	5	1.0	-3.5	0
BZT52C3V9S	W5	3.9	3.7	4.1	5	90	600	1.0	3	1.0	-3.5	0
BZT52C4V3S	W6	4.3	4.0	4.6	5	90	600	1.0	3	1.0	-3.5	0
BZT52C4V7S	W7	4.7	4.4	5.0	5	80	500	1.0	2	2.0	-3.5	0.2
BZT52C5V1S	W8	5.1	4.8	5.4	5	60	480	1.0	1	2.0	-2.7	1.2
BZT52C5V6S	W9	5.6	5.2	6.0	5	40	400	1.0	3	2.0	-2.0	2.5
BZT52C6V2S	WA	6.2	5.8	6.6	5	10	150	1.0	2	4.0	0.4	3.7
BZT52C6V8S	WB	6.8	6.4	7.2	5	15	80	1.0	1	4.0	1.2	4.5
BZT52C7V5S	WC	7.5	7.0	7.9	5	15	80	1.0	0.7	5.0	2.5	5.3
BZT52C8V2S	WD	8.2	7.7	8.7	5	15	80	1.0	0.5	5.0	3.2	6.2
BZT52C9V1S	WE	9.1	8.5	9.6	5	15	100	1.0	0.2	6.0	3.8	7.0
BZT52C10S	WF	10	9.4	10.6	5	20	150	1.0	0.1	7.0	4.5	8.0
BZT52C11S	WG	11	10.4	11.6	5	20	150	1.0	0.1	8.0	5.4	9.0
BZT52C12S	WH	12	11.4	12.7	5	25	150	1.0	0.1	8.0	6.0	10.0
BZT52C13S	WI	13	12.4	14.1	5	30	170	1.0	0.1	8.0	7.0	11.0
BZT52C15S	WJ	15	13.8	15.6	5	30	200	1.0	0.1	10.5	9.2	13.0
BZT52C16S	WK	16	15.3	17.1	5	40	200	1.0	0.1	11.2	10.4	—
BZT52C18S	WL	18	16.8	19.1	5	45	225	1.0	0.1	12.6	12.4	—
BZT52C20S	WM	20	18.8	21.2	5	55	225	1.0	0.1	14.0	14.4	—
BZT52C22S	WN	22	20.8	23.3	5	55	250	1.0	0.1	15.4	16.4	—
BZT52C24S	WO	24	22.8	25.6	5	70	250	1.0	0.1	16.8	18.4	—
BZT52C27S	WP	27	25.1	28.9	2	80	300	0.5	0.1	18.9	21.4	—
BZT52C30S	WQ	30	28.0	32.0	2	80	300	0.5	0.1	21.0	24.4	—
BZT52C33S	WR	33	31.0	35.0	2	80	325	0.5	0.1	23.1	27.4	—
BZT52C36S	WS	36	34.0	38.0	2	90	350	0.5	0.1	25.2	30.4	—
BZT52C39S	WT	39	37.0	41.0	2	130	350	0.5	0.1	27.3	33.4	—

Notes: 6. Short duration pulse test used to minimize self-heating effect.
7. Part mounted on FR-4 PC board with recommended pad layout, as per http://www.diodes.com/package-outlines.html.

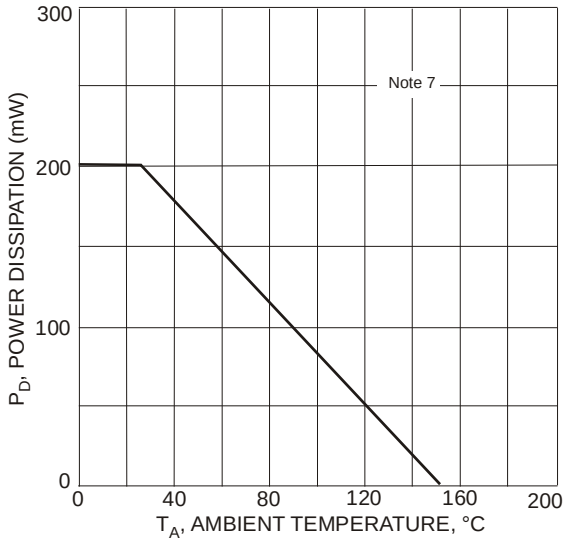


Fig. 1 Power Derating Curve

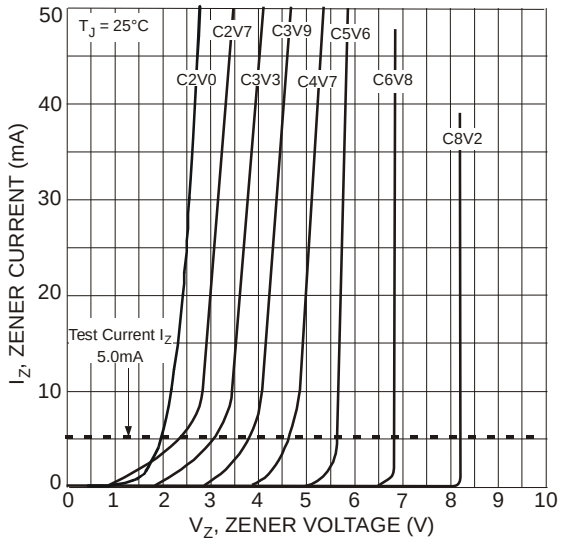


Fig. 2 Typical Zener Breakdown Characteristics

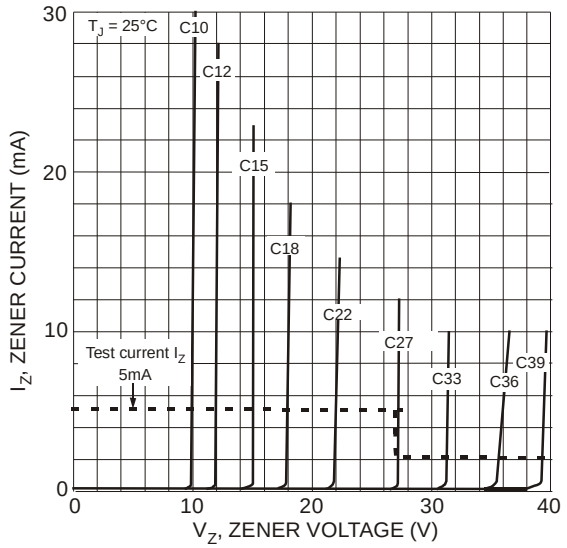


Fig. 3 Typical Zener Breakdown Characteristics

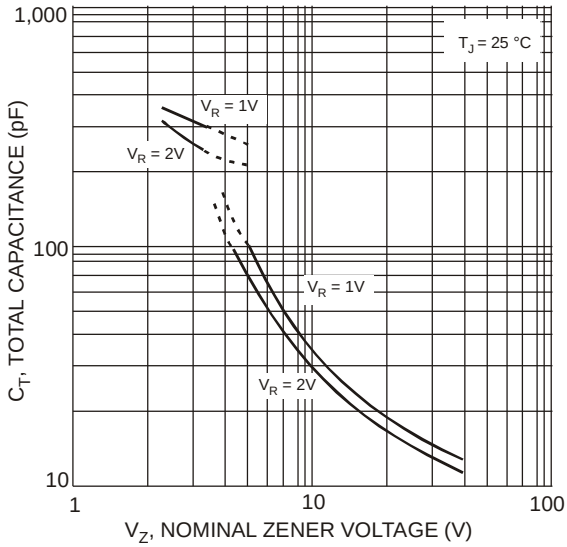
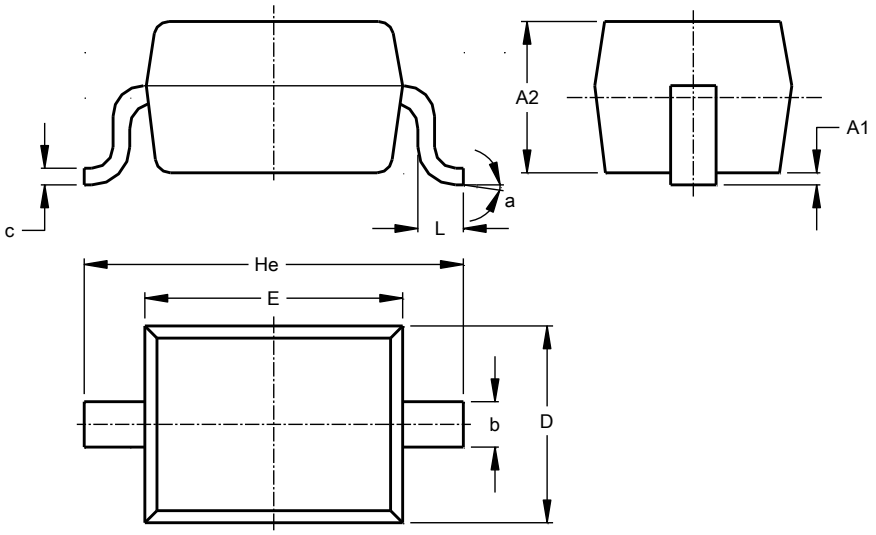


Fig. 4 Typical Total Capacitance vs. Nominal Zener Voltage

Package Outline Dimensions

Please see http://www.diodes.com/package-outlines.html for the latest version.

SOD323

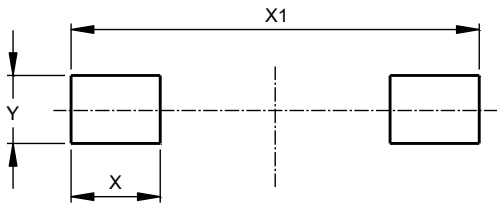


SOD323			
Dim	**Min**	**Max**	**Typ**
A1	--	0.10	0.05
A2	1.00	1.10	1.05
b	0.25	0.35	0.30
c	0.10	0.15	0.11
D	1.20	1.40	1.30
E	1.60	1.80	1.70
He	2.30	2.70	2.50
L	0.20	0.40	0.30
a	0º	8º	--
All Dimensions in mm			

Suggested Pad Layout

Please see http://www.diodes.com/package-outlines.html for the latest version.

SOD323



Dimensions	Value (in mm)
X	0.590
X1	2.700
Y	0.450

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