


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

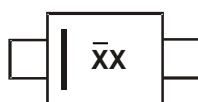
*Add "-7-F" to the appropriate type number in Electrical Characteristics Table, example: 6.2V Zener – BZT52C6V2S-7-F.

- Notes:
- No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
 - 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.
 - Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
 - 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 Sb₂O₃ Fire Retardants.
 - 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)



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 _{θJA}	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	Min	Max
		Nom (V)	Min (V)	Max (V)	(mA)	Ω	mA	uA	V			
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>.

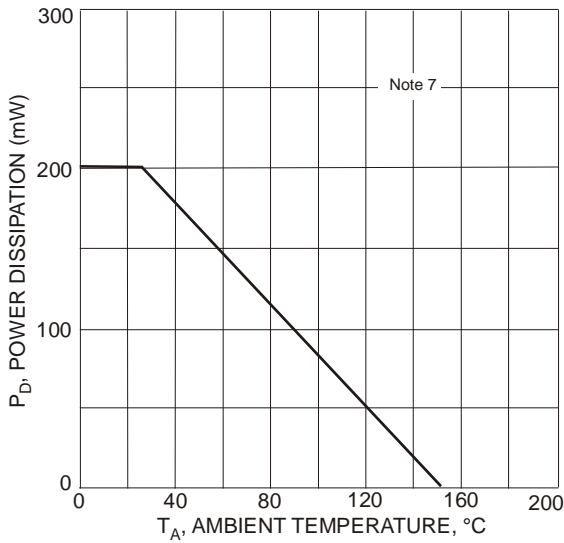


Fig. 1 Power Derating Curve

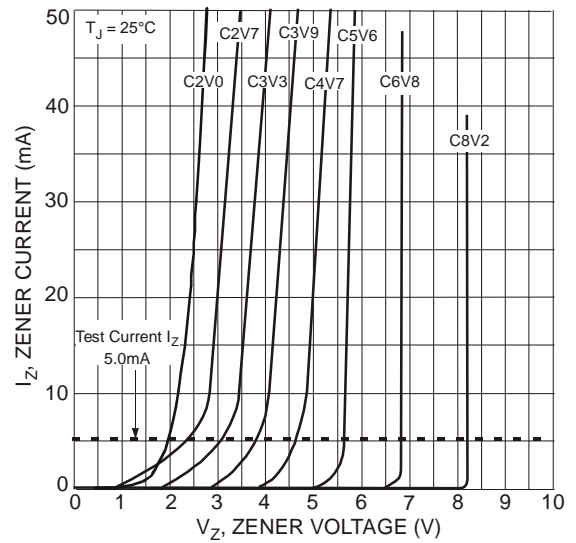


Fig. 2 Typical Zener Breakdown Characteristics

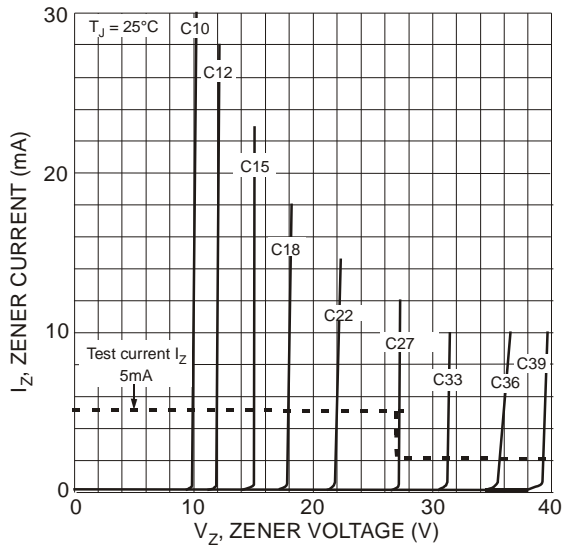


Fig. 3 Typical Zener Breakdown Characteristics

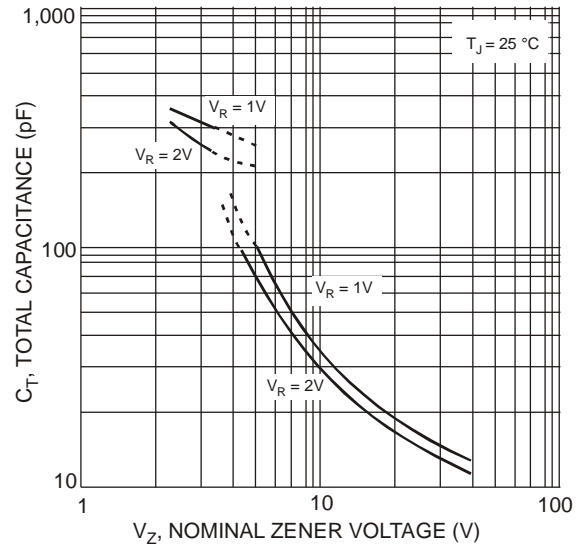
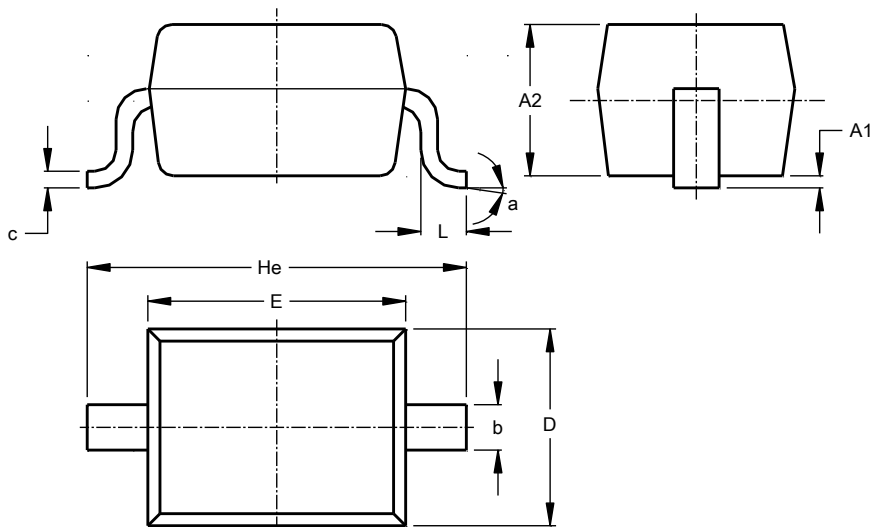


Fig. 4 Typical Total Capacitance vs. Nominal Zener Voltage

Package Outline Dimensions

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

SOD323

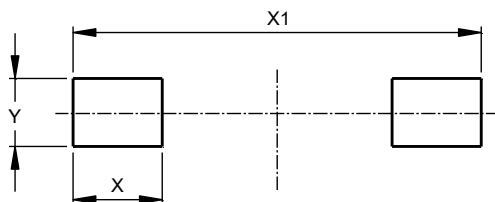


SOD323			
Dim	Min	Max	Typ
A1	--	0.10	0.05
A2	1.00	1.10	1.05
b	0.25	0.35	0.30
c	0.10	0.15	0.11
D	1.20	1.40	1.30
E	1.60	1.80	1.70
He	2.30	2.70	2.50
L	0.20	0.40	0.30
a	0°	8°	--
All Dimensions in mm			

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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