



BZT52C2V0S - BZT52C39S

SURFACE MOUNT ZENER DIODE

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	3000/Tape & Reel
(Type Number)Q-7-F*	Automotive	SOD323	3000/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 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. Product manufactured prior to Date Code V9 are built with Non-Green Molding Compound and may contain Halogens or Sb₂O₃ Fire Retardants.
- 5. For packaging details, go to our website at http://www.diodes.com.

Marking Information



xx = Product Type Marking Code (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)	$R_{ hetaJA}$	625	°C/W
Operating and Storage Temperature Range	T_{J}, T_{STG}	-65 to +150	°C

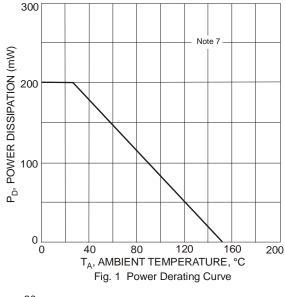
Electrical Characteristics @TA = 25°C unless otherwise specified

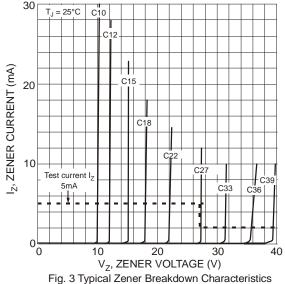
Zener Voltage Range (Note 4)				Maximum Zener Impedance f = 1kHz			Maximum Reverse Current (Note 6)		Temperature Coefficient of Zener Voltage			
Type Number	Code		V _Z @ I _{ZT}		I _{ZT}	Z _{ZT} @ I _{ZT}	$\mathbf{Z}_{ZK} @ \mathbf{I}_{ZK}$	I _{ZK}	I _R	@ V _R	@ I _{ZT =} 5mA mV/°C	
		Nom (V)	Min (V)	Max (V)	(mA)		Ω	mA	uA	٧	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	14.0
BZT52C18S	WL	18	16.8	19.1	5	45	225	1.0	0.1	12.6	12.4	16.0
BZT52C20S	WM	20	18.8	21.2	5	55	225	1.0	0.1	14.0	14.4	18.0
BZT52C22S	WN	22	20.8	23.3	5	55	250	1.0	0.1	15.4	16.4	20.0
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	-

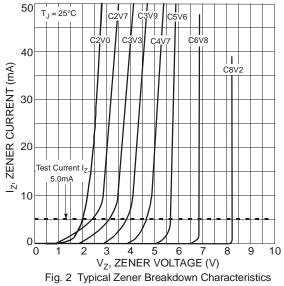
Notes: 6. Short duration pulse test used to minimize self-heating effect.

^{7.} Part mounted on FR-4 PC board with recommended pad layout, as per http://www.diodes.com.









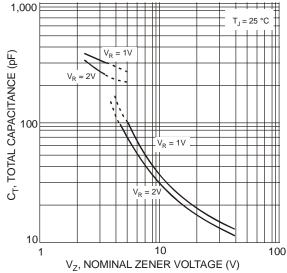
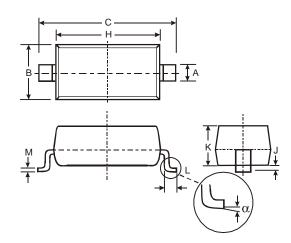


Fig. 4 Typical Total Capacitance vs. Nominal Zener Voltage

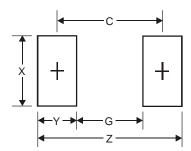
Package Outline Dimensions



SOD323				
Dim	Min	Max		
Α	0.25	0.35		
В	1.20	1.40		
С	2.30	2.70		
Н	1.60	1.80		
J	0.00	0.10		
K	1.0	1.1		
L	0.20	0.40		
М	0.10	0.15		
α	0°	8°		
All Dimensions in mm				



Suggested Pad Layout



Dimensions	Value (in mm)
Z	3.75
G	1.05
Х	0.65
Υ	1.35
С	2.40

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