



BZT52C2V0T - BZT52C36T

SURFACE MOUNT ZENER DIODE

Features

- Small, Low Profile Surface Mount Package
- Flat Lead Package Design for Low Profile and High Power Dissipation
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)
- Qualified to AEC-Q101 Standards for High Reliability
- PPAP Capable (Note 4)

Mechanical Data

- Case: SOD523
- 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 Alloy 42 Leadframe. Solderable per MIL-STD-202, Method 208 (3)
- Weight: 0.001 grams (Approximate)

SOD523



Top View

Ordering Information (Note 5)

Part Number (Note 6)	Compliance	Case	Packaging
(Type Number)-7*	Standard	SOD523	3,000/Tape & Reel
(Type Number)Q-7-F*	Automotive	SOD523	3,000/Tape & Reel
(Type Number)-13*	Standard	SOD523	10,000/Tape & Reel
(Type Number)Q-13-F*	Automotive	SOD523	10,000/Tape & Reel

^{*}For (Type Number), please see the Electrical Characteristics Table. Example: 6.2V Zener = BZT52C6V2T-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. Automotive products are AEC-Q101 qualified and are PPAP capable. Automotive, AEC-Q101 and standard products are electrically and thermally the same, except where specified. For more information, please refer to https://www.diodes.com/quality/product-compliance-definitions/.
- 5. For packaging details, go to our website at https://www.diodes.com/design/support/packaging/diodes-packaging/
- 6. Dispensed in every other cavity of the tape.

Marking Information



XX = Product Type Marking Code (See Electrical Characteristics Table)



Maximum Ratings (@ $T_A = +25^{\circ}C$, unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load.

For capacitive load, derate current by 20%.

Characteristic	Symbol	Value	Unit	
Forward Voltage	@ I _F = 10mA	V _F	0.9	V

Thermal Characteristics

Characteristic	Symbol	Value	Unit	
Power Dissipation (Note 7)	P_{D}	300	mW	
Thermal Resistance, Junction to Ambient Air (Note 7)	$R_{ heta JA}$	417	°C/W	
Thermal Resistance, Junction to Case (Note 7)	$R_{ heta JC}$	160	°C/W	
Operating and Storage Temperature Range	T _{J,} T _{STG}	-65 to +150	°C	

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

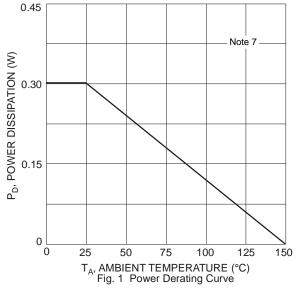
Type Number	Marking Codes	Zener Voltage Range (Note 8)			Maximum Zener Impedance f = 1kHz			Maximum Reverse Current (Note 8)		Temperature Coefficient @ I _{ZT} mV/°C		
			Vz @ Izt	ı	I _{ZT}	Z _{ZT} @ I _{ZT}	Z _{ZK} @ I _{ZK}	Izk	I _R	@ V _R		1
		Nom (V)	Min (V)	Max (V)	mA	_	Ω	mA	μΑ	V	Min	Max
BZT52C2V0T	WY	2.0	1.91	2.09	5	100	600	1.0	150	1.0	-3.5	0
BZT52C2V4T	WX	2.4	2.2	2.6	5	100	600	1.0	50	1.0	-3.5	0
BZT52C2V7T	W1	2.7	2.5	2.9	5	100	600	1.0	20	1.0	-3.5	0
BZT52C3V0T	W2	3.0	2.8	3.2	5	95	600	1.0	10	1.0	-3.5	0
BZT52C3V3T	W3	3.3	3.1	3.5	5	95	600	1.0	5.0	1.0	-3.5	0
BZT52C3V6T	W4	3.6	3.4	3.8	5	90	600	1.0	5.0	1.0	-3.5	0
BZT52C3V9T	W5	3.9	3.7	4.1	5	90	600	1.0	3.0	1.0	-3.5	0
BZT52C4V3T	W6	4.3	4.0	4.6	5	90	600	1.0	3.0	1.0	-3.5	0
BZT52C4V7T	W7	4.7	4.4	5.0	5	80	500	1.0	3.0	2.0	-3.5	0.2
BZT52C5V1T	W8	5.1	4.8	5.4	5	60	480	1.0	2.0	2.0	-2.7	1.2
BZT52C5V6T	<u>W</u> 9	5.6	5.2	6.0	5	40	400	1.0	1.0	2.0	-2	2.5
BZT52C6V2T	<u>W</u> A	6.2	5.8	6.6	5	10	150	1.0	3.0	4.0	0.4	3.7
BZT52C6V8T	<u>W</u> B	6.8	6.4	7.2	5	15	80	1.0	2.0	4.0	1.2	4.5
BZT52C7V5T	<u>w</u> c	7.5	7.0	7.9	5	15	80	1.0	1.0	5.0	2.5	5.3
BZT52C8V2T	<u>W</u> D	8.2	7.7	8.7	5	15	80	1.0	0.7	5.0	3.2	6.2
BZT52C9V1T	<u>W</u> E	9.1	8.5	9.6	5	15	100	1.0	0.5	6.0	3.8	7.0
BZT52C10T	<u>W</u> F	10	9.4	10.6	5	20	150	1.0	0.2	7.0	4.5	8.0
BZT52C11T	<u>W</u> G	11	10.4	11.6	5	20	150	1.0	0.1	8.0	5.4	9.0
BZT52C12T	<u>W</u> H	12	11.4	12.7	5	25	150	1.0	0.1	8.0	6.0	10.0
BZT52C13T	<u>W</u> I	13	12.4	14.1	5	30	170	1.0	0.1	8.0	7.0	11.0
BZT52C15T	<u>W</u> J	15	13.8	15.6	5	30	200	1.0	0.1	10.5	9.2	13.0
BZT52C16T	<u>W</u> K	16	15.3	17.1	5	40	200	1.0	0.1	11.2	10.4	14.0
BZT52C18T	<u>W</u> L	18	16.8	19.1	5	45	225	1.0	0.1	12.6	12.4	16.0
BZT52C20T	<u>W</u> M	20	18.8	21.2	5	55	225	1.0	0.1	14.0	14.4	18.0
BZT52C22T	<u>W</u> N	22	20.8	23.3	5	55	250	1.0	0.1	15.4	16.4	20.0
BZT52C24T	<u>W</u> O	24	22.8	25.6	5	70	250	1.0	0.1	16.8	18.4	22.0
BZT52C36T	<u>w</u> s	36	34.0	38.0	2	90	350	0.5	0.1	25.2	30.4	

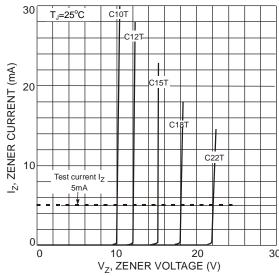
Notes: 7. Part mounted on FR-4 PC board, single-sided, 2oz. copper with pad area 1.92mm².

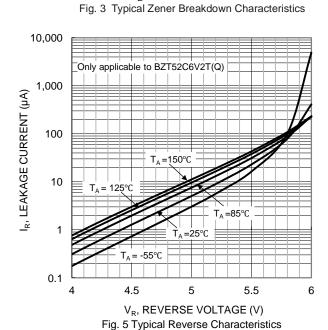
^{8.} Short duration pulse test used to minimize self-heating effect.











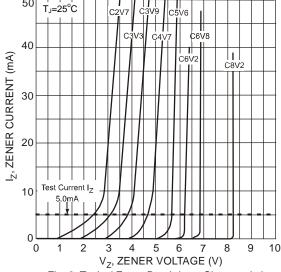


Fig. 2 Typical Zener Breakdown Characteristics

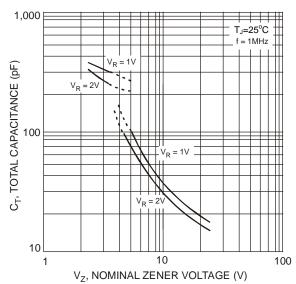


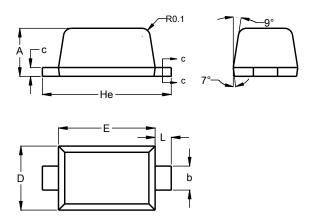
Fig. 4 Typical Total Capacitance vs. Nominal Zener Voltage



Package Outline Dimensions

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

SOD523

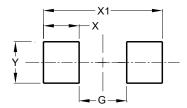


SOD523					
Dim	Min	Max			
Α	0.55	0.65			
b	0.26 0.34				
C	0.11 0.17				
D	0.75 0.85				
Е	1.15 1.25				
He	He 1.55 1.65				
L	0.10	0.30			
All Dimensions in mm					

Suggested Pad Layout

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

SOD523



Dimensions	Value (in mm)
G	0.80
Х	0.60
X1	2.00
Υ	0.70



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