

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 **(E3)**
- Weight: 0.001 grams (Approximate)

SOD523



Top View

Ordering Information (Note 5)

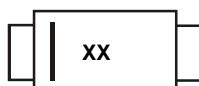
Part Number (Note 6)	Compliance	Case	Packaging
(Type Number)-7*	Standard	SOD523	3000/Tape & Reel
(Type Number)Q-7*	Automotive	SOD523	3000/Tape & Reel
(Type Number)-13*	Standard	SOD523	10000/Tape & Reel
(Type Number)Q-13*	Automotive	SOD523	10000/Tape & Reel

*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 http://www.diodes.com/product_compliance_definitions.html.
5. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.
6. Dispensed in every other cavity of the tape.

Marking Information



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

Maximum Ratings (@ $T_A = +25^\circ\text{C}$, 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 @ $I_F = 10\text{mA}$	V_F	0.9	V

Thermal Characteristics

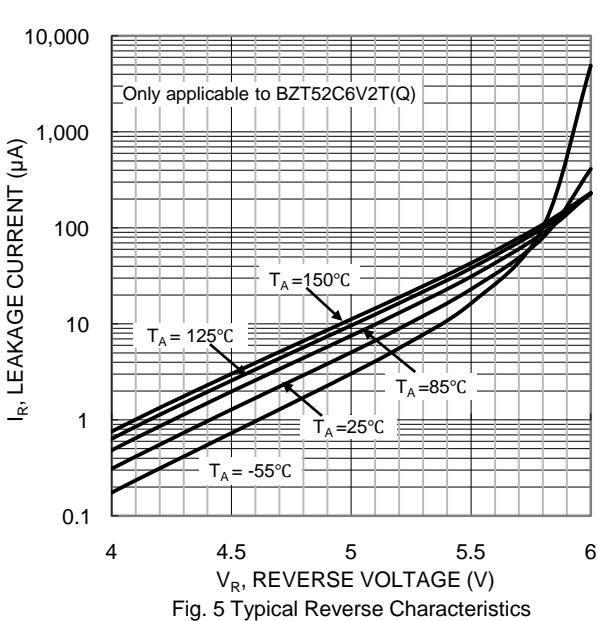
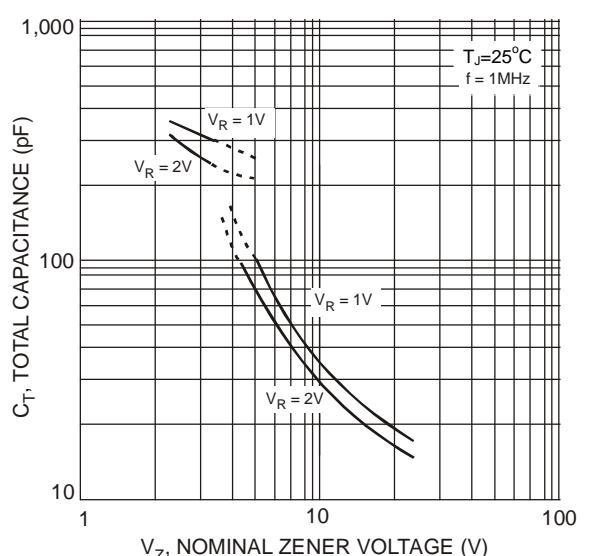
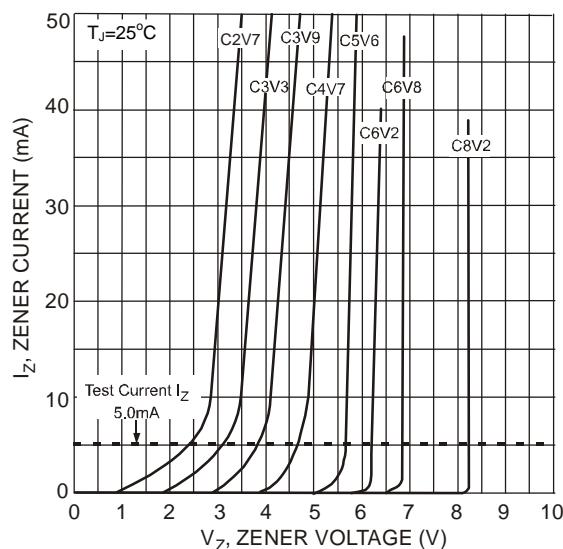
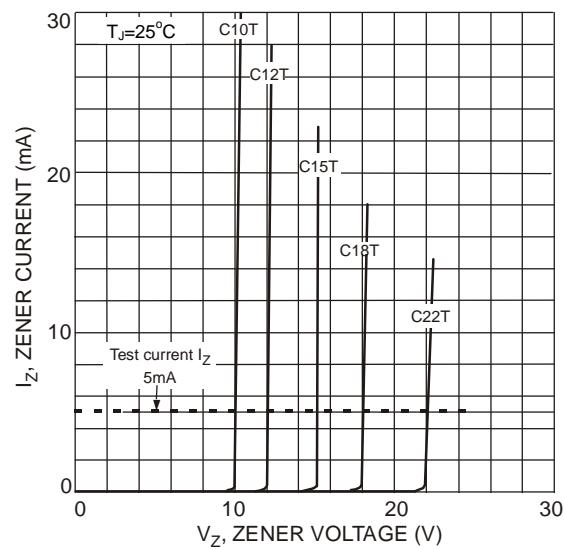
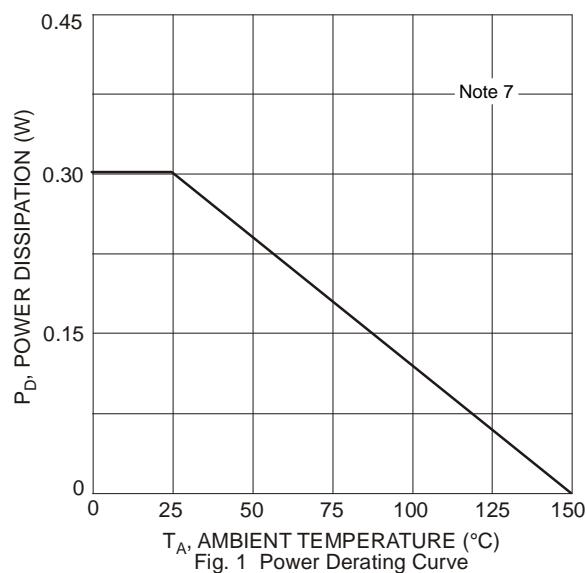
Characteristic	Symbol	Value	Unit
Power Dissipation (Note 7)	P_D	300	mW
Thermal Resistance, Junction to Ambient Air (Note 7)	$R_{\theta JA}$	417	°C/W
Thermal Resistance, Junction to Case (Note 7)	$R_{\theta JC}$	160	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +150	°C

Electrical Characteristics (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

Type Number	Marking Codes	Zener Voltage Range (Note 8)				Maximum Zener Impedance $f = 1\text{kHz}$			Maximum Reverse Current (Note 8)		Temperature Coefficient @ I_{ZT} mV/°C
		$V_Z @ I_{ZT}$			I_{ZT}	$Z_{ZT} @ I_{ZT}$	$Z_{ZK} @ I_{ZK}$	I_{ZK}	I_R	μA	
		Nom (V)	Min (V)	Max (V)	mA	Ω	mA	mA	μA	V	
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	W9	5.6	5.2	6.0	5	40	400	1.0	1.0	2.0	-2 2.5
BZT52C6V2T	WA	6.2	5.8	6.6	5	10	150	1.0	3.0	4.0	0.4 3.7
BZT52C6V8T	WB	6.8	6.4	7.2	5	15	80	1.0	2.0	4.0	1.2 4.5
BZT52C7V5T	WC	7.5	7.0	7.9	5	15	80	1.0	1.0	5.0	2.5 5.3
BZT52C8V2T	WD	8.2	7.7	8.7	5	15	80	1.0	0.7	5.0	3.2 6.2
BZT52C9V1T	WE	9.1	8.5	9.6	5	15	100	1.0	0.5	6.0	3.8 7.0
BZT52C10T	WF	10	9.4	10.6	5	20	150	1.0	0.2	7.0	4.5 8.0
BZT52C11T	WG	11	10.4	11.6	5	20	150	1.0	0.1	8.0	5.4 9.0
BZT52C12T	WH	12	11.4	12.7	5	25	150	1.0	0.1	8.0	6.0 10.0
BZT52C13T	WI	13	12.4	14.1	5	30	170	1.0	0.1	8.0	7.0 11.0
BZT52C15T	WJ	15	13.8	15.6	5	30	200	1.0	0.1	10.5	9.2 13.0
BZT52C16T	WK	16	15.3	17.1	5	40	200	1.0	0.1	11.2	10.4 14.0
BZT52C18T	WL	18	16.8	19.1	5	45	225	1.0	0.1	12.6	12.4 16.0
BZT52C20T	WM	20	18.8	21.2	5	55	225	1.0	0.1	14.0	14.4 18.0
BZT52C22T	WN	22	20.8	23.3	5	55	250	1.0	0.1	15.4	16.4 20.0
BZT52C24T	WO	24	22.8	25.6	5	70	250	1.0	0.1	16.8	18.4 22.0

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

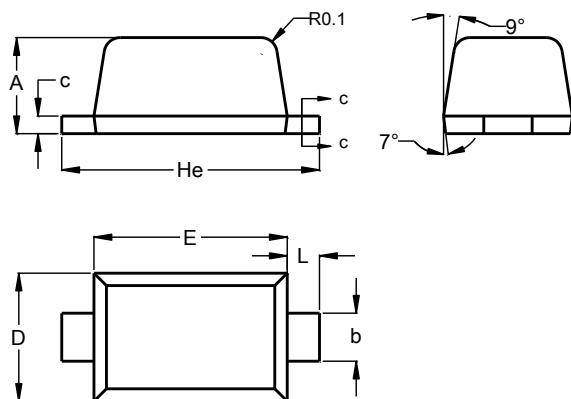
8. Short duration pulse test used to minimize self-heating effect.



Package Outline Dimensions

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

SOD523



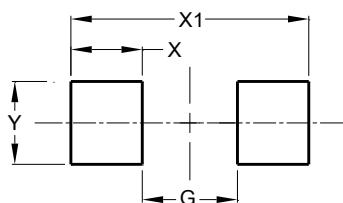
SOD523		
Dim	Min	Max
A	0.55	0.65
b	0.26	0.34
c	0.11	0.17
D	0.75	0.85
E	1.15	1.25
He	1.55	1.65
L	0.10	0.30

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
X	0.60
X1	2.00
Y	0.70

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