

## Features

- Planar Die Construction
- Ultra-Small Surface Mount Package
- Ideally Suited for Automated Assembly Processes
- **Lead Free By Design/RoHS Compliant (Note 1)**
- **"Green" Device (Note 2)**

## Mechanical Data

- Case: SOD-523
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminal Connections: Cathode Band
- Terminals: Finish - Matte Tin annealed over Alloy 42 leadframe. Solderable per MIL-STD-202, Method 208
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.001 grams (approximate)



Top View

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

## Thermal Characteristics

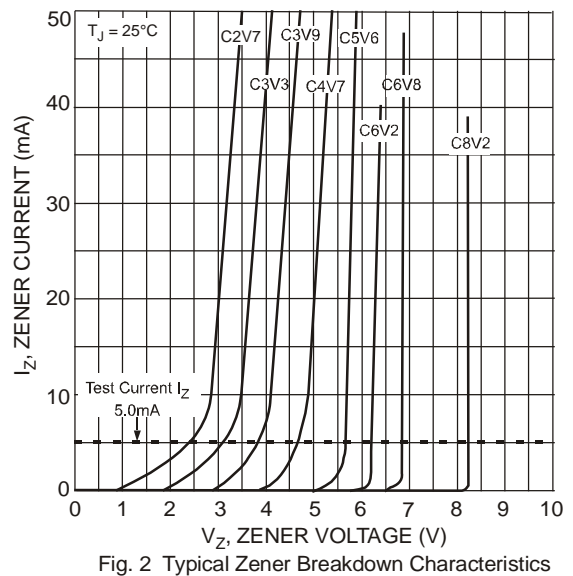
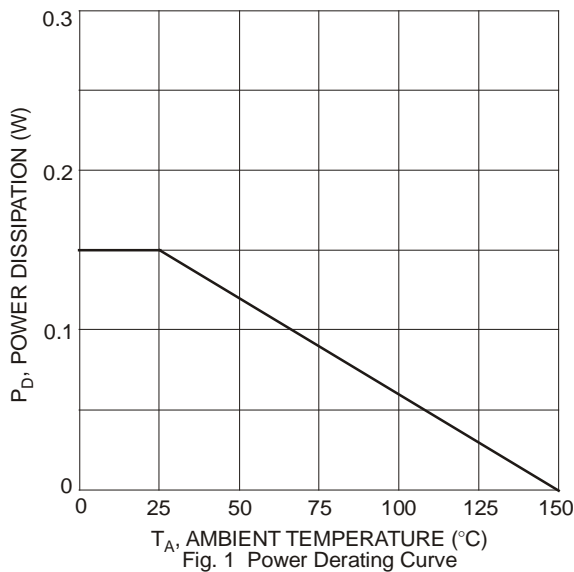
Characteristic	Symbol	Value	Unit
Power Dissipation (Note 3)	$P_D$	150	mW
Thermal Resistance, Junction to Ambient Air (Note 3)	$R_{\theta JA}$	833	$^\circ\text{C/W}$
Operating and Storage Temperature Range	$T_J, T_{STG}$	-65 to +150	$^\circ\text{C}$

- Notes:
1. No purposefully added lead.
  2. Diodes Inc.'s "Green" policy can be found on our website at [http://www.diodes.com/products/lead\\_free/index.php](http://www.diodes.com/products/lead_free/index.php).
  3. Part mounted on FR-4 PC board with recommended pad layout, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.

**Electrical Characteristics** @ $T_A = 25^\circ\text{C}$  unless otherwise specified

Type Number	Marking Codes	Zener Voltage Range (Note 4)				Maximum Zener Impedance (Note 5)			Maximum Reverse Current (Note 4)		Typical Temperature Coefficient @ $I_{ztc}$		Test Current $I_{ztc}$
		$V_Z @ I_{zT}$			$I_{zT}$	$Z_{zT} @ I_{zT}$	$Z_{zK} @ I_{zK}$	$I_{zK}$	$I_R @ V_R$	mV/°C	mV/°C		
		Nom (V)	Min (V)	Max (V)								Ω	
BZT52C2V0T	WY	2.0	1.91	2.09	5	100	600	1.0	150	1.0	-3.5	0	5
BZT52C2V4T	WX	2.4	2.2	2.6	5	100	600	1.0	50	1.0	-3.5	0	5
BZT52C2V7T	W1	2.7	2.5	2.9	5	100	600	1.0	20	1.0	-3.5	0	5
BZT52C3V0T	W2	3.0	2.8	3.2	5	95	600	1.0	10	1.0	-3.5	0	5
BZT52C3V3T	W3	3.3	3.1	3.5	5	95	600	1.0	5.0	1.0	-3.5	0	5
BZT52C3V6T	W4	3.6	3.4	3.8	5	90	600	1.0	5.0	1.0	-3.5	0	5
BZT52C3V9T	W5	3.9	3.7	4.1	5	90	600	1.0	3.0	1.0	-3.5	0	5
BZT52C4V3T	W6	4.3	4.0	4.6	5	90	600	1.0	3.0	1.0	-3.5	0	5
BZT52C4V7T	W7	4.7	4.4	5.0	5	80	500	1.0	3.0	2.0	-3.5	0.2	5
BZT52C5V1T	W8	5.1	4.8	5.4	5	60	480	1.0	2.0	2.0	-2.7	1.2	5
BZT52C5V6T	W9	5.6	5.2	6.0	5	40	400	1.0	1.0	2.0	-2	2.5	5
BZT52C6V2T	WA	6.2	5.8	6.6	5	10	150	1.0	3.0	4.0	0.4	3.7	5
BZT52C6V8T	WB	6.8	6.4	7.2	5	15	80	1.0	2.0	4.0	1.2	4.5	5
BZT52C7V5T	WC	7.5	7.0	7.9	5	15	80	1.0	1.0	5.0	2.5	5.3	5
BZT52C8V2T	WD	8.2	7.7	8.7	5	15	80	1.0	0.7	5.0	3.2	6.2	5
BZT52C9V1T	WE	9.1	8.5	9.6	5	15	100	1.0	0.5	6.0	3.8	7.0	5
BZT52C10T	WF	10	9.4	10.6	5	20	150	1.0	0.2	7.0	4.5	8.0	5
BZT52C11T	WG	11	10.4	11.6	5	20	150	1.0	0.1	8.0	5.4	9.0	5
BZT52C12T	WH	12	11.4	12.7	5	25	150	1.0	0.1	8.0	6.0	10.0	5
BZT52C13T	WI	13	12.4	14.1	5	30	170	1.0	0.1	8.0	7.0	11.0	5
BZT52C15T	WJ	15	13.8	15.6	5	30	200	1.0	0.1	10.5	9.2	13.0	5
BZT52C16T	WK	16	15.3	17.1	5	40	200	1.0	0.1	11.2	10.4	14.0	5
BZT52C18T	WL	18	16.8	19.1	5	45	225	1.0	0.1	12.6	12.4	16.0	5
BZT52C20T	WM	20	18.8	21.2	5	55	225	1.0	0.1	14.0	14.4	18.0	5
BZT52C22T	WN	22	20.8	23.3	5	55	250	1.0	0.1	15.4	16.4	20.0	5
BZT52C24T	WO	24	22.8	25.6	5	70	250	1.0	0.1	16.8	18.4	22.0	5

Notes: 4. Short duration pulse test used to minimize self-heating effect.  
5.  $f = 1\text{kHz}$ .



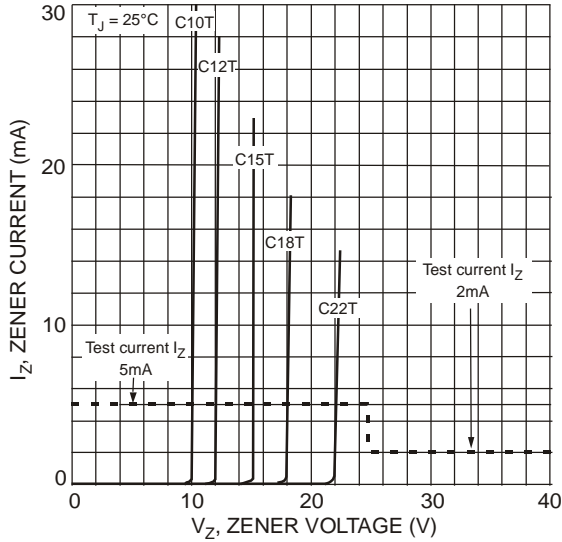


Fig. 3 Typical Zener Breakdown Characteristics

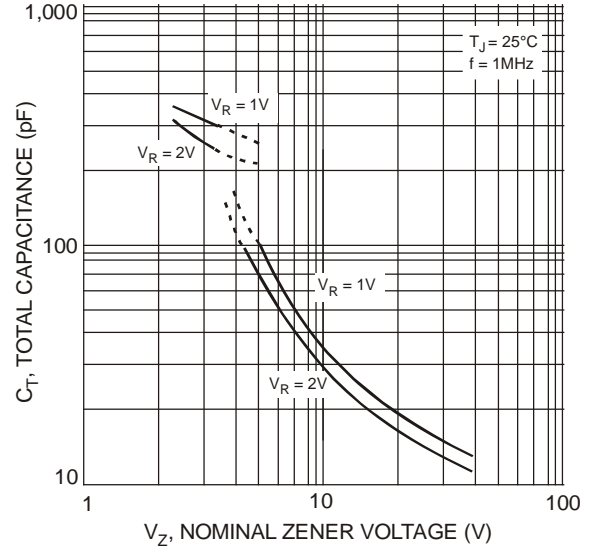


Fig. 4 Typical Total Capacitance vs. Nominal Zener Voltage

**Ordering Information** (Note 6)

Part Number (Type Number)-7*	Case SOD-523	Packaging 3000/Tape & Reel
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\*Add "-7" to the appropriate type number in Electrical Characteristics Table, example: 6.2V Zener = BZT52C6V2T-7.

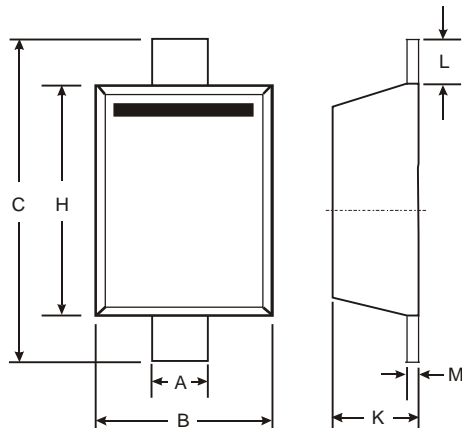
Notes: 6. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

**Marking Information**



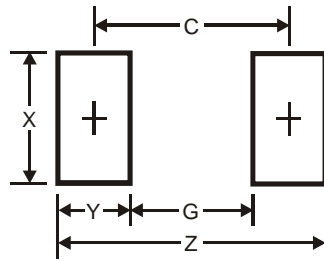
xx = Product Type Marking Code  
(See Electrical Characteristics Table)

**Package Outline Dimensions**



SOD-523		
Dim	Min	Max
A	0.25	0.35
B	0.70	0.90
C	1.50	1.70
H	1.10	1.30
K	0.55	0.70
L	0.10	0.30
M	0.10	0.20
All Dimensions in mm		

**Suggested Pad Layout**



Dimensions	Value (in mm)
Z	2.3
G	1.1
X	0.8
Y	0.6
C	1.7

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