

## Features

- ±2.0% Tolerance on Breakdown Voltage
- 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
- Weight: 0.001 grams (Approximate)



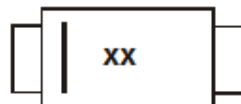
Top View

## Ordering Information (Note 5)

Part Number	Qualification	Case	Packaging
BZT585B5V1TQ-7	Automotive	SOD523	3,000/Tape & Reel

- 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](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. Refer to [http://www.diodes.com/quality/product\\_compliance\\_definitions/](http://www.diodes.com/quality/product_compliance_definitions/).
  5. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

## Marking Information



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

**Maximum Ratings** (@T<sub>A</sub> = +25°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	V <sub>F</sub>	@ I <sub>F</sub> = 10mA	0.9
		@ I <sub>F</sub> = 100mA	1.1
Continuous Forward Current	I <sub>F</sub>	200	mA

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 6)	P <sub>D</sub>	350	mW
Thermal Resistance, Junction to Ambient Air (Note 6)	R <sub>θJA</sub>	357	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +150	°C

Note: 6. Device mounted on FR-4 PCB with minimum recommended pad layout, as shown in Diodes Incorporated's Suggested Pad Layout document, which can be found on our website at <http://www.diodes.com>.

**Electrical Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Type Number	Marking Codes	Zener Voltage Range (Note 7)				Maximum Zener Impedance (Note 8)			Temperature Coefficient	Total Capacitance	Maximum Reverse Current (Note 7)	
		V <sub>Z</sub> @ I <sub>ZT</sub>			I <sub>ZT</sub>	Z <sub>ZT</sub> @ I <sub>ZT</sub>	Z <sub>ZK</sub> @ I <sub>ZK</sub>	I <sub>ZK</sub>	TC @ I <sub>ZT</sub>	C <sub>T</sub> @ f = 1MHz, V <sub>R</sub> = 0V	I <sub>R</sub>	@ V <sub>R</sub>
		Nom (V)	Min (V)	Max (V)	mA	Ω		mA	Typical (mV/°C)	Max (pF)	μA	V
BZT585B5V1TQ	3N	5.1	5.00	5.20	5	60	480	1	-0.5	300	2	2

Notes: 7. Short duration pulse test used to minimize self-heating effect.  
8. f = 1kHz.

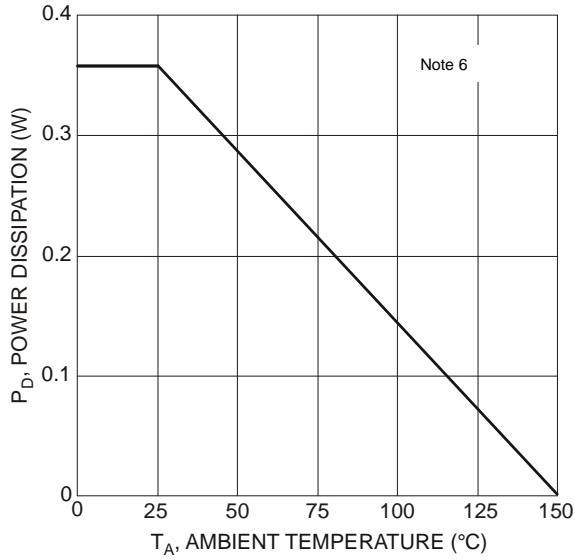


Figure 1 Power Derating Curve

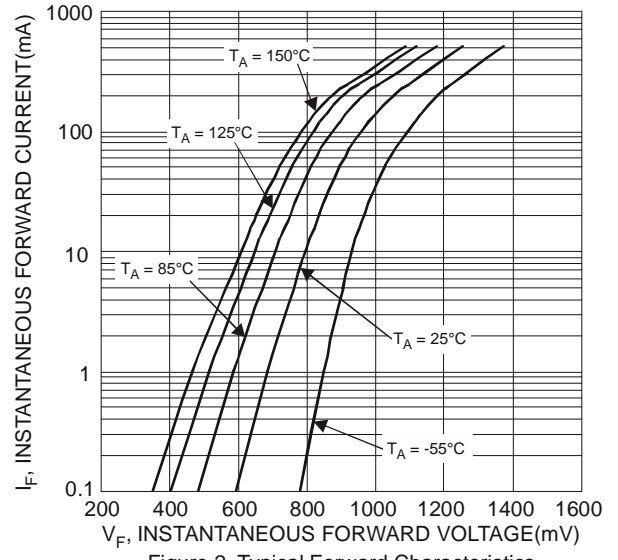


Figure 2 Typical Forward Characteristics

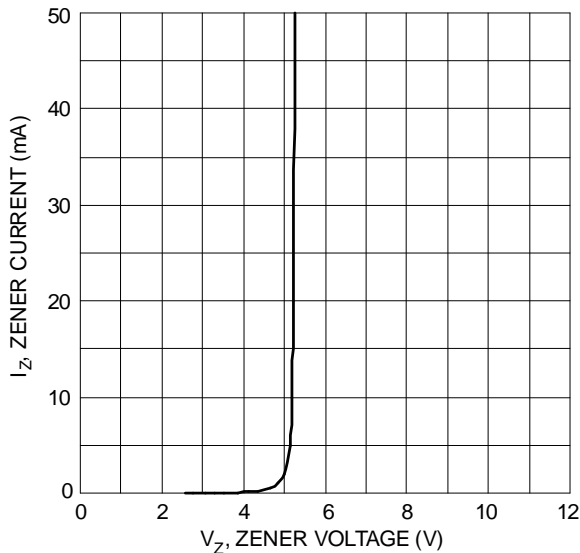
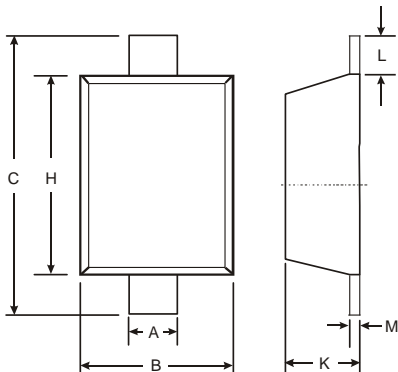


Figure 3 Typical Zener Breakdown Characteristics

## Package Outline Dimensions

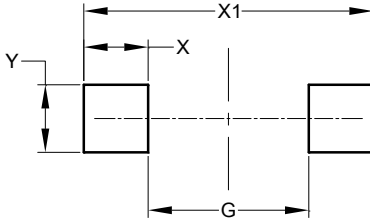
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.



SOD523		
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	0.65
L	0.10	0.30
M	0.10	0.12
All Dimensions in mm		

## Suggested Pad Layout

Please see AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for the latest version.



Dimensions	Value (in mm)
<b>G</b>	0.80
<b>X</b>	0.60
<b>X1</b>	2.00
<b>Y</b>	0.70

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