





#### SURFACE MOUNT ZENER DIODE

### **Features**

- Planar Die Construction
- General Purpose, Medium Current
- Ideally Suited for Automated Assembly Processes
- Lead, Halogen and Antimony Free, RoHS Compliant (Note 1)
- "Green" Device (Notes 2 and 6)

### **Mechanical Data**

- Case: SOD-323
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections: See Diagram
- Terminals: Finish Matte Tin annealed over Alloy 42 leadframe. Solderable per MIL-STD-202, Method 208
- Marking Information: See Page 2
  Ordering Information: See Page 2
  Weight: 0.004 grams (approximate)



Top View

## Maximum Ratings @T<sub>A</sub> = 25°C unless otherwise specified

Characteristic		Symbol	Value	Unit
Forward Voltage	@ I <sub>F</sub> = 10mA	V <sub>F</sub>	0.9	V
Operating and Storage Temperature Range		T <sub>J</sub> , T <sub>STG</sub>	-65 to +150	°C

#### **Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 3)	P <sub>D</sub>	200	mW
Thermal Resistance, Junction to Ambient Air (Note 3)	$R_{ hetaJA}$	833	°C/W

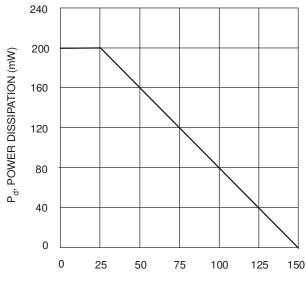
## Electrical Characteristics @TA = 25°C unless otherwise specified

Type Number	Marking Code (Note 4)	Zener Voltage Range (Note 3) Vz @ Izт		•	Maximum Zener Impedance (Note 5)		Maximum Reverse Current (Note 5)			
Number	(11016 4)			I <sub>ZT</sub>	Z <sub>ZT</sub> @ I <sub>ZT</sub>	Z <sub>ZK</sub> @ I <sub>ZK</sub>	I <sub>ZK</sub>	IR	@ V <sub>R</sub>	
	Nom (V) Min (V) Max		Max (V)	mA	Ω	)	mA	uA	٧	
BZT52C51S	ww	51	48.0	54.0	5	100	750	1.0	0.1	38

Notes:

- 1. No purposefully added lead. Halogen and Antimony Free.
- 2. Diodes Inc's "Green" policy can be found on our website at http://www.diodes.com/products/lead\_free/index.php
- ${\it 3. \ Short\ duration\ pulse\ test\ used\ to\ minimize\ self-heating\ effect.}$
- 4. When provided, otherwise, parts are provided with date code only, and type number identification appears on reel only.
- 5. f = 1kHz.
- 6. Product manufactured with Green Molding Compound and does not contain Halogens or Sb<sub>2</sub>O<sub>3</sub> Fire Retardants.





 $\begin{array}{ccc} & {\rm T_A,\,AMBIENT\,\,TEMPERATURE\,\,(^\circ C)} \\ {\rm Fig.\,\,1} & {\rm Power\,\,Dissipation\,\,vs\,\,Ambient\,\,Temperature} \end{array}$ 

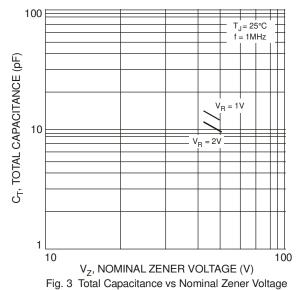


Fig. 2 Zener Breakdown Characteristics

## Ordering Information (Note 7)

Part Number	Case	Packaging
BZT52C51S-7	SOD-323	3,000/Tape & Reel
BZT52C51S-13	SOD-323	10,000/Tape & Reel

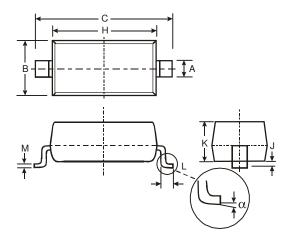
Notes: 7. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

## **Marking Information**



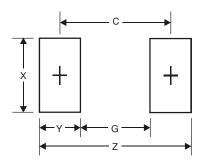


# **Package Outline Dimensions**



SOD-323				
Dim	Min	Max		
Α	0.25	0.35		
В	1.20	1.40		
С	<b>C</b> 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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