

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

| Characteristic | Symbol | Value | Unit |
|-----------------------------------------|----------------|-------------|------------------|
| Forward Voltage @ $I_F = 10\text{mA}$ | V_F | 0.9 | V |
| Operating and Storage Temperature Range | T_J, T_{STG} | -65 to +150 | $^\circ\text{C}$ |

Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|------------------------------------------------------|-----------------|-------|--------------------|
| Power Dissipation (Note 3) | P_D | 200 | mW |
| Thermal Resistance, Junction to Ambient Air (Note 3) | $R_{\theta JA}$ | 833 | $^\circ\text{C/W}$ |

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

| Type Number | Marking Code (Note 4) | Zener Voltage Range (Note 3) | | | | Maximum Zener Impedance (Note 5) | | | Maximum Reverse Current (Note 5) | |
|-------------|-----------------------|------------------------------|---------|---------|----------|----------------------------------|-------------------|---------------|----------------------------------|---------|
| | | $V_Z @ I_{ZT}$ | | | I_{ZT} | $Z_{ZT} @ I_{ZT}$ | $Z_{ZK} @ I_{ZK}$ | I_{ZK} | I_R | @ V_R |
| | | Nom (V) | Min (V) | Max (V) | mA | Ω | mA | μA | V | |
| 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
 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. $f = 1\text{kHz}$.
 6. Product manufactured with Green Molding Compound and does not contain Halogens or Sb_2O_3 Fire Retardants.

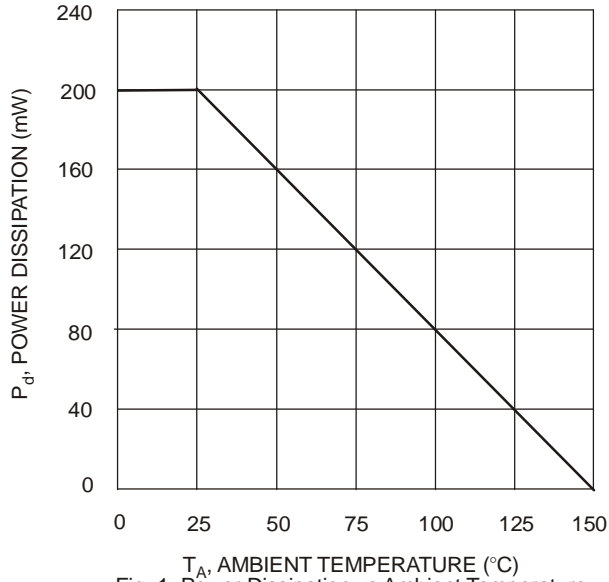


Fig. 1 Power Dissipation vs Ambient Temperature

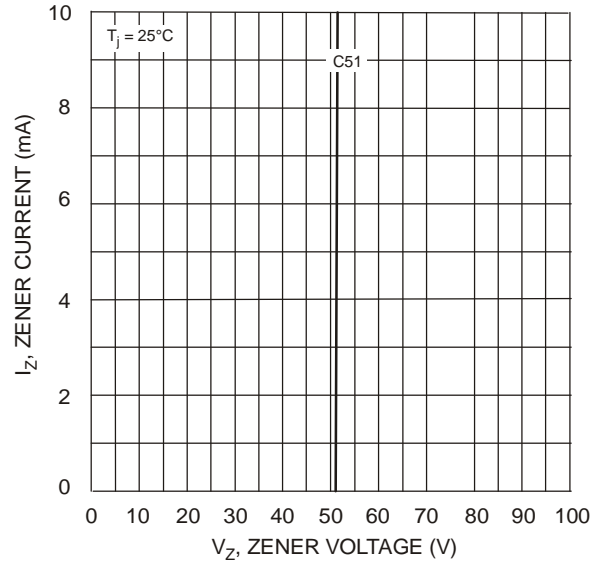


Fig. 2 Zener Breakdown Characteristics

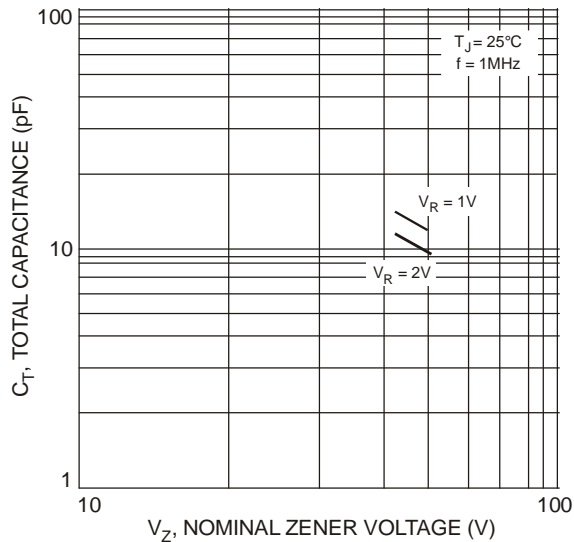


Fig. 3 Total Capacitance vs Nominal Zener Voltage

Ordering Information (Note 7)

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

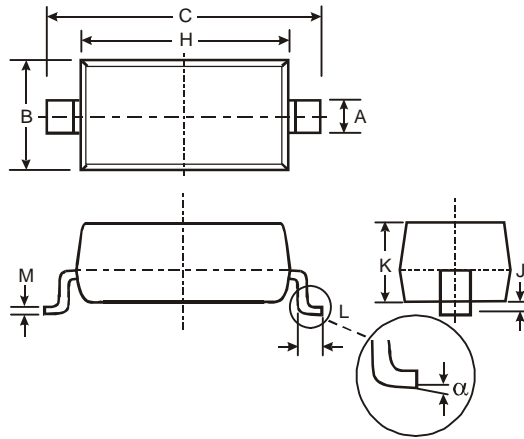
Notes: 7. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

Marking Information



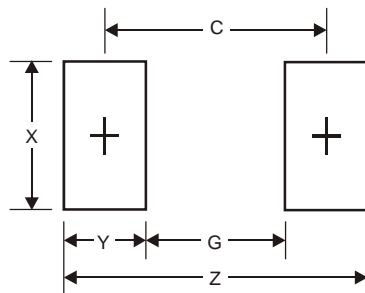
WW = Product Type Marking Code

Package Outline Dimensions



| SOD-323 | | |
|----------------------|------|------|
| Dim | Min | Max |
| A | 0.25 | 0.35 |
| B | 1.20 | 1.40 |
| C | 2.30 | 2.70 |
| H | 1.60 | 1.80 |
| J | 0.00 | 0.10 |
| K | 1.0 | 1.1 |
| L | 0.20 | 0.40 |
| M | 0.10 | 0.15 |
| α | 0° | 8° |
| All Dimensions in mm | | |

Suggested Pad Layout



| Dimensions | Value (in mm) |
|------------|---------------|
| Z | 3.75 |
| G | 1.05 |
| X | 0.65 |
| Y | 1.35 |
| C | 2.40 |

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