

Features

- Planar Die Construction
- General Purpose, Medium Current
- Ideally Suited for Automated Assembly Processes
- **Lead, Halogen and Antimony Free, RoHS Compliant "Green" Device (Notes 5 and 6)**

Mechanical Data

- Case: SOD-123
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe)
- Polarity: Cathode Band
- Marking Information: See Page 2
- Ordering Information: See Page 2
- Weight: 0.01 grams (approximate)



Top View

Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|--|-----------------|-------------|---------------|
| Power Dissipation (Note 1) | P_D | 410 | mW |
| Thermal Resistance, Junction to Ambient Air (Note 1) | $R_{\theta JA}$ | 305 | $^{\circ}C/W$ |
| Operating and Storage Temperature Range | T_J, T_{STG} | -65 to +150 | $^{\circ}C$ |

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

| Type Number | Marking Code (Note 3) | Zener Voltage Range (Note 2) | | | | Maximum Zener Impedance (Note 4) | | | Maximum Reverse Current (Note 2) | |
|-------------|-----------------------|------------------------------|---------|---------|----------|----------------------------------|-------------------|----------|----------------------------------|---------|
| | | $V_Z @ I_{ZT}$ | | | 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 |
| BZT52C43 | WU/WU | 43 | 40.0 | 46.0 | 5 | 100 | 700 | 1.0 | 0.1 | 32 |
| BZT52C47 | WV/WZ | 47 | 44.0 | 50.0 | 5 | 100 | 750 | 1.0 | 0.1 | 35 |
| BZT52C51 | WW/X1 | 51 | 48.0 | 54.0 | 5 | 100 | 750 | 1.0 | 0.1 | 38 |

- Notes:
1. Device mounted on ceramic PCB; 7.6mm x 9.4mm x 0.87mm with pad areas 25mm².
 2. Short duration pulse test used to minimize self-heating effect.
 3. When provided, otherwise, parts are provided with date code only, and type number identification appears on reel only.
 4. $f = 1kHz$.
 5. No purposefully added lead. Halogen and Antimony Free.
 6. Product manufactured with Data Code V9 (week 33, 2008) and newer are built with Green Molding Compound. Product manufactured prior to Date Code V9 are built with Non-Green Molding Compound and may contain Halogens or Sb₂O₃ Fire Retardants.

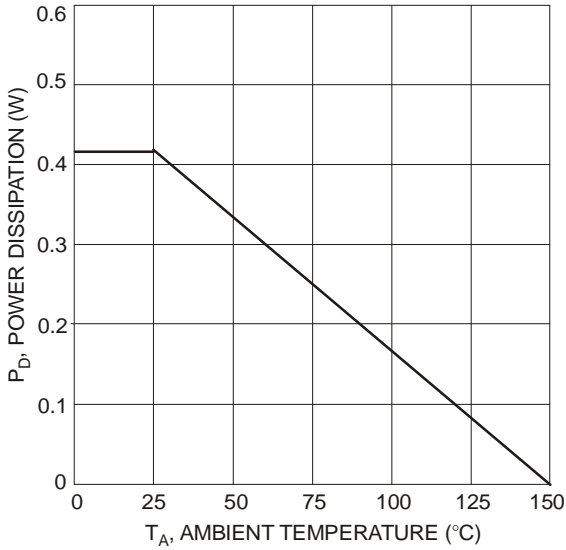


Fig. 1 Power Derating Curve

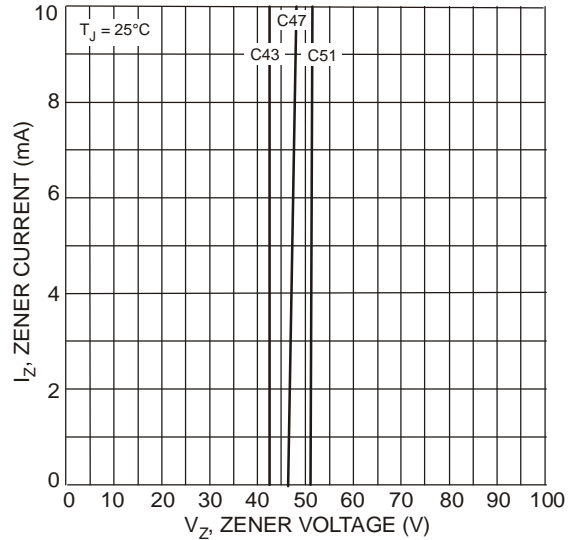


Fig. 2 Typical Zener Breakdown Characteristics

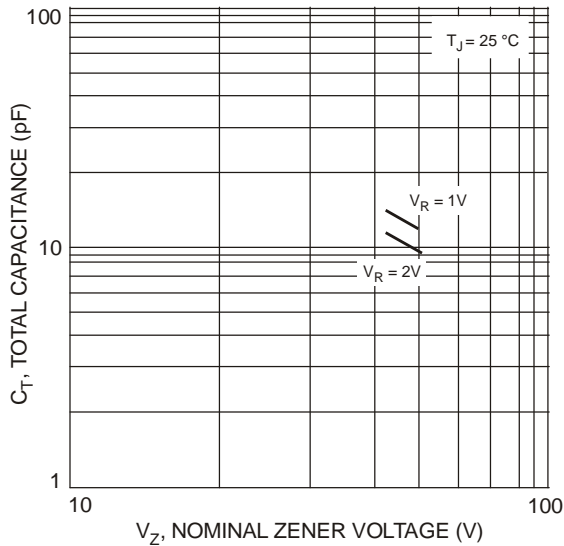


Fig. 3 Typical Total Capacitance vs. Nominal Zener Voltage

Ordering Information (Note 7)

| Part Number | Case | Packaging |
|---------------|---------|------------------|
| BZT52CXX-7-F* | SOD-123 | 3000/Tape & Reel |

*Replace "XX" with the nominal Zener breakdown voltage; i.e. Part number for 43V device would be BZT52C43-7-F.

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

Marking Information



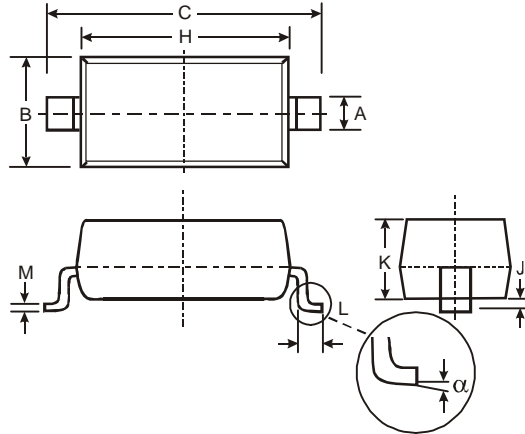
xx = Product Type Marking Code
 (See Electrical Characteristics Table)
 YM = Date Code Marking
 Y = Year (ex: N = 2002)
 M = Month (ex: 9 = September)

Date Code Key

| Year | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2111 | 2012 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Code | J | K | L | M | N | P | R | S | T | U | V | W | X | Y | Z |

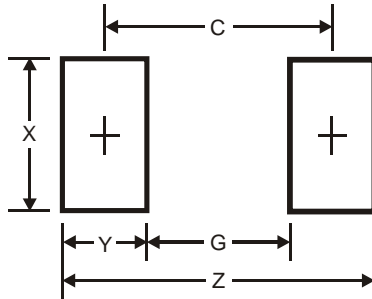
| Month | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Code | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | O | N | D |

Package Outline Dimensions



| SOD-123 | | |
|----------------------|----------|------|
| Dim | Min | Max |
| A | 0.55 Typ | |
| B | 1.40 | 1.70 |
| C | 3.55 | 3.85 |
| H | 2.55 | 2.85 |
| J | 0.00 | 0.10 |
| K | 1.00 | 1.35 |
| L | 0.25 | 0.40 |
| M | 0.10 | 0.15 |
| α | 0 | 8° |
| All Dimensions in mm | | |

Suggested Pad Layout



| Dimensions | Value (in mm) |
|------------|---------------|
| Z | 4.9 |
| G | 2.5 |
| X | 0.7 |
| Y | 1.2 |
| C | 3.7 |

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