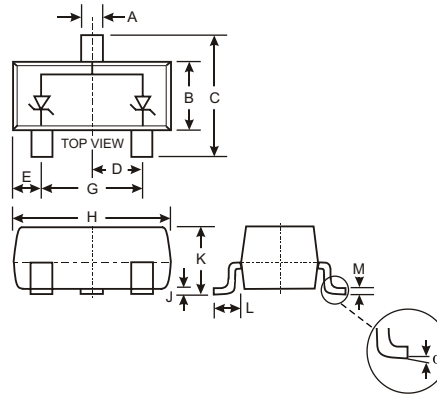


### Features

- Dual Zeners in Common Anode Configuration
- 300 mW Power Dissipation Rating
- Ideally Suited for Automatic Insertion
- $\Delta V_Z$  For Both Diodes in One Case is  $\leq 5\%$
- Common Cathode Style Available See DZ Series
- **Available in Lead Free/RoHS Compliant Version (Note 3)**

### Mechanical Data

- Case: SOT-23
- Case Material: UL Flammability Classification Rating 94V-0
- Moisture sensitivity: Level 1 per J-STD-020C
- Terminals: Solderable per MIL-STD-202, Method 208
- Also Available in Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe). Please see Ordering Information, Note 4, on Page 1
- Polarity: See Diagram
- Marking: Marking Code (See Page 2)
- Approx. Weight: 0.008 grams



| SOT-23               |       |       |
|----------------------|-------|-------|
| Dim                  | Min   | Max   |
| A                    | 0.37  | 0.51  |
| B                    | 1.20  | 1.40  |
| C                    | 2.30  | 2.50  |
| D                    | 0.89  | 1.03  |
| E                    | 0.45  | 0.60  |
| G                    | 1.78  | 2.05  |
| H                    | 2.80  | 3.00  |
| J                    | 0.013 | 0.10  |
| K                    | 0.903 | 1.10  |
| L                    | 0.45  | 0.61  |
| M                    | 0.085 | 0.180 |
| $\alpha$             | 0°    | 8°    |
| All Dimensions in mm |       |       |

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

| Characteristic                                       | Symbol          | Value       | Unit               |
|--|-----------------|-------------|--------------------|
| Power Dissipation (Note 1)                           | $P_d$           | 300         | mW                 |
| Thermal Resistance, Junction to Ambient Air (Note 1) | $R_{\theta JA}$ | 417         | $^\circ\text{C/W}$ |
| Operating and Storage Temperature Range              | $T_J, T_{STG}$  | -65 to +150 | $^\circ\text{C}$   |

### Ordering Information (Note 2)

| Device           | Packaging | Shipping         |
|------------------|-----------|------------------|
| (Type Number)-7* | SOT-23    | 3000/Tape & Reel |

\* Add "-7" to the appropriate type number in Table on Page 2 example: 6.2V Zener = AZ23C6V2-7.

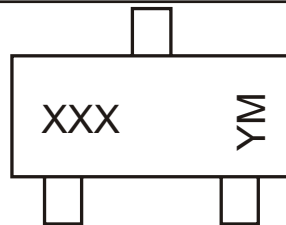
- Note:
1. Mounted on FR4 PC Board with recommended pad layout which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.
  2. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.
  3. No purposefully added lead.
  4. For Lead Free/RoHS Compliant version part number, please add "-F" suffix to part number above. Example: AZ23C51-7-F.

## Electrical Characteristics @T<sub>A</sub> = 25°C unless otherwise specified

| Type Number | Marking Code | Zener Voltage Range (Note 5) | Maximum Zener Impedance (Note 6)          |   | Typical Temperature Coefficient | Min. Reverse Voltage (Note 5)<br>@ I <sub>R</sub> = 0.1μA |
|-------------|--------------|------------------------------|---|---|---------------------------------|---|
|             |              | @ I <sub>ZT</sub> = 5.0mA    | Z <sub>ZT</sub> @ I <sub>ZT</sub> = 5.0mA | Z <sub>ZK</sub> @ I <sub>ZK</sub> = 1.0mA |                                 |   |
|             |              | V <sub>Z</sub> (Volts)       | Ohms                                      | Ohms                                      | T <sub>C</sub> (%/°C)           | V <sub>R</sub> (Volts)                                    |
| AZ23C2V7    | KD1          | 2.5-2.9                      | 83  | 500                                       | -0.065                          | —   |
| AZ23C3V0    | KD2          | 2.8-3.2                      | 95  | 500                                       | -0.060                          | —   |
| AZ23C3V3    | KD3          | 3.1-3.5                      | 95  | 500                                       | -0.055                          | —   |
| AZ23C3V6    | KD4          | 3.4-3.8                      | 95  | 500                                       | -0.055                          | —   |
| AZ23C3V9    | KD5          | 3.7-4.1                      | 95  | 500                                       | -0.050                          | —   |
| AZ23C4V3    | KD6          | 4.0-4.6                      | 95  | 500                                       | -0.035                          | —   |
| AZ23C4V7    | KD7          | 4.4-5.0                      | 78  | 500                                       | -0.015                          | —   |
| AZ23C5V1    | KD8          | 4.8-5.4                      | 60  | 480                                       | +0.005                          | 0.8   |
| AZ23C5V6    | KD9          | 5.2-6.0                      | 40  | 400                                       | +0.020                          | 1.0   |
| AZ23C6V2    | KDA          | 5.8-6.6                      | 10  | 200                                       | +0.030                          | 2.0   |
| AZ23C6V8    | KDB          | 6.4-7.2                      | 8.0                                       | 150                                       | +0.045                          | 3.0   |
| AZ23C7V5    | KDC          | 7.0-7.9                      | 7.0                                       | 50  | +0.050                          | 5.0   |
| AZ23C8V2    | KDD          | 7.7-8.7                      | 7.0                                       | 50  | +0.055                          | 6.0   |
| AZ23C9V1    | KDE          | 8.5-9.6                      | 10  | 50  | +0.065                          | 7.0   |
| AZ23C10     | KDF          | 9.4-10.6                     | 15  | 70  | +0.065                          | 7.5   |
| AZ23C11     | KDG          | 10.4-11.6                    | 20  | 70  | +0.070                          | 8.5   |
| AZ23C12     | KDH          | 11.4-12.7                    | 20  | 90  | +0.075                          | 9.0   |
| AZ23C13     | KDI          | 12.4-14.1                    | 25  | 110                                       | +0.080                          | 10.0  |
| AZ23C15     | KDJ          | 13.8-15.6                    | 30  | 110                                       | +0.080                          | 11.0  |
| AZ23C16     | KDK          | 15.3-17.1                    | 40  | 170                                       | +0.090                          | 12.0  |
| AZ23C18     | KDL          | 16.8-19.1                    | 50  | 170                                       | +0.090                          | 14.0  |
| AZ23C20     | KDM          | 18.8-21.2                    | 50  | 220                                       | +0.090                          | 15.0  |
| AZ23C22     | KDN          | 20.8-23.3                    | 55  | 220                                       | +0.090                          | 17.0  |
| AZ23C24     | KDO          | 22.8-25.6                    | 80  | 220                                       | +0.090                          | 18.0  |
| AZ23C27     | KDP          | 25.1-28.9                    | 80  | 250                                       | +0.090                          | 20.0  |
| AZ23C30     | KDQ          | 28-32                        | 80  | 250                                       | +0.090                          | 22.5  |
| AZ23C33     | KDR          | 31-35                        | 80  | 250                                       | +0.090                          | 25.0  |
| AZ23C36     | KDS          | 34-38                        | 90  | 250                                       | +0.090                          | 27.0  |
| AZ23C39     | KDT          | 37-41                        | 90  | 300                                       | +0.110                          | 29.0  |
| AZ23C43     | D30          | 40-46                        | 100                                       | 700                                       | +0.110                          | 32.0  |
| AZ23C47     | D31          | 44-50                        | 100                                       | 750                                       | +0.110                          | 35.0  |
| AZ23C51     | D32          | 48-54                        | 100                                       | 750                                       | +0.110                          | 38.0  |

Note: 5. Short duration test pulse used to minimize self-heating effect.  
6. f = 1KHz.

## Marking Information



XXX = Product Type Marking Code  
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 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Code | J    | K    | L    | M    | N    | P    | R    | S    | T    | U    | V    | W    |

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

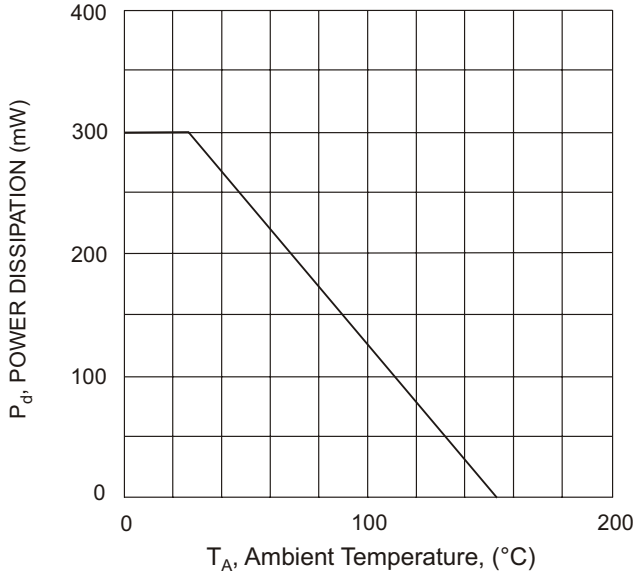


Fig. 1 Power Derating Curve

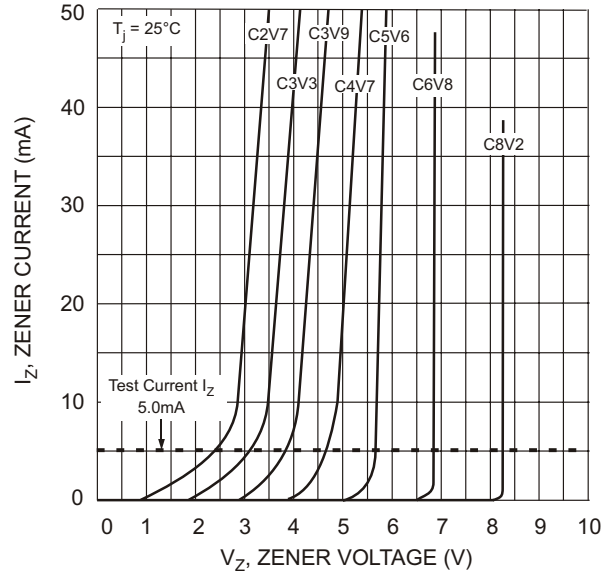


Fig. 2 Zener Breakdown Characteristics

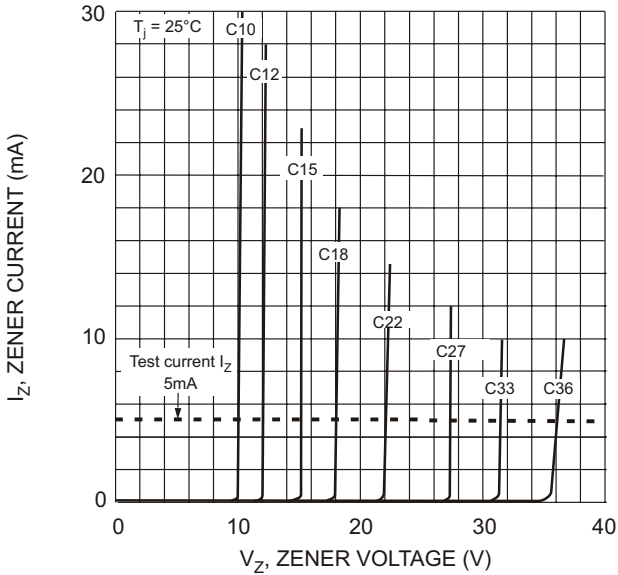


Fig. 3 Zener Breakdown Characteristics

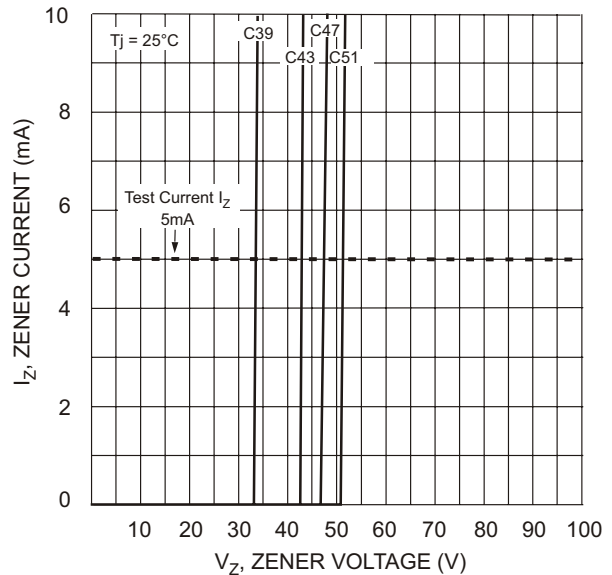


Fig. 4 Zener Breakdown Characteristics

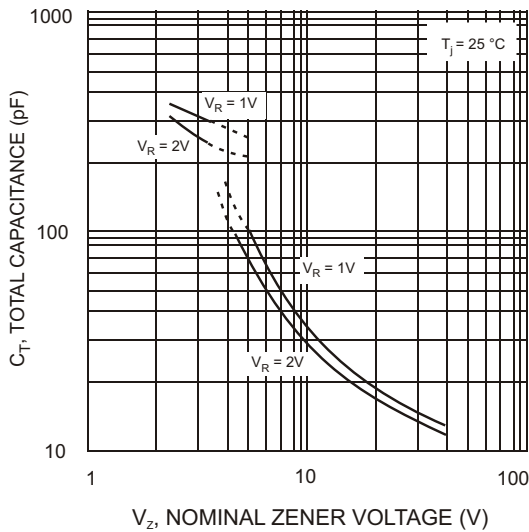


Fig. 5 Total Capacitance vs Nominal Zener Voltage