

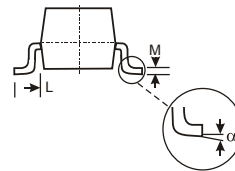
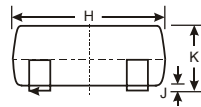
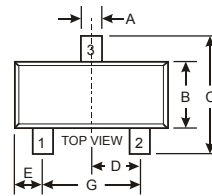
### Features

- 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
- **Lead Free/RoHS Compliant (Note 3)**

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

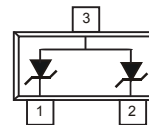
| Parameter                                                | Symbol          | Value         | Unit                      |
|----------------------------------------------------------|-----------------|---------------|---------------------------|
| Power Dissipation                                        | $P_D$           | 300           | mW                        |
| Thermal Resistance,<br>Junction to Ambient <sup>1)</sup> | $R_{\theta JA}$ | 417           | $^\circ\text{C}/\text{W}$ |
| Junction and Storage                                     | $T_j$           | 150           | $^\circ\text{C}$          |
| Temperature Range                                        | $T_s$           | - 65 to + 150 | $^\circ\text{C}$          |

<sup>1)</sup> Alumina = 0.4 X 0.3 X 0.024 in, 99.5% alumina



| 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 |       |       |

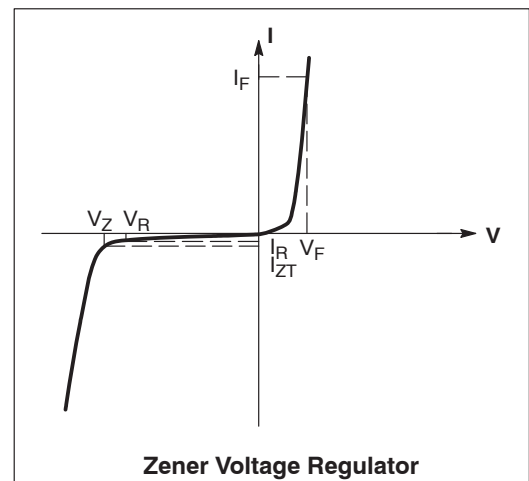
Device Schematic



### ELECTRICAL CHARACTERISTICS

(Pinout: 1-Anode, 2-No Connection, 3-Cathode) ( $T_A = 25^\circ\text{C}$  unless otherwise noted,  $V_F = 0.90\text{ V Max.}$  @  $I_F = 10\text{ mA}$ )

| Symbol       | Parameter                                           |
|--------------|-----------------------------------------------------|
| $V_Z$        | Reverse Zener Voltage @ $I_{ZT}$                    |
| $I_{ZT}$     | Reverse Current                                     |
| $Z_{ZT}$     | Maximum Zener Impedance @ $I_{ZT}$                  |
| $I_R$        | Reverse Leakage Current @ $V_R$                     |
| $V_R$        | Reverse Voltage                                     |
| $I_F$        | Forward Current                                     |
| $V_F$        | Forward Voltage @ $I_F$                             |
| $\Theta V_Z$ | Maximum Temperature Coefficient of $V_Z$            |
| C            | Max. Capacitance @ $V_R = 0$ and $f = 1\text{ MHz}$ |



# AZ23C2V7 - AZ23C51

## 300mW DUAL SURFACE MOUNT ZENER DIODES

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

| Type Number | Marking Code | Zener Voltage Range (Note 4) | Maximum Zener Impedance (Note 5)          |                                           | Typical Temperature Coefficient | Min. Reverse Voltage (Note 4) |
|-------------|--------------|------------------------------|-------------------------------------------|-------------------------------------------|---------------------------------|-------------------------------|
|             |              | @ 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 |                                 | @ I <sub>R</sub> = 0.1μA      |
|             |              | V <sub>Z</sub> (Volts)       | Ohms                                      | Ohms                                      |                                 | V <sub>R</sub> (Volts)        |
| AZ23C2V7    | DA           | 2.5-2.9                      | 83                                        | 500                                       | -0.065                          | —                             |
| AZ23C3V0    | DB           | 2.8-3.2                      | 95                                        | 500                                       | -0.060                          | —                             |
| AZ23C3V3    | DC           | 3.1-3.5                      | 95                                        | 500                                       | -0.055                          | —                             |
| AZ23C3V6    | DD           | 3.4-3.8                      | 95                                        | 500                                       | -0.055                          | —                             |
| AZ23C3V9    | DE           | 3.7-4.1                      | 95                                        | 500                                       | -0.050                          | —                             |
| AZ23C4V3    | DF           | 4.0-4.6                      | 95                                        | 500                                       | -0.035                          | —                             |
| AZ23C4V7    | DG           | 4.4-5.0                      | 78                                        | 500                                       | -0.015                          | —                             |
| AZ23C5V1    | DH           | 4.8-5.4                      | 60                                        | 480                                       | +0.005                          | 0.8                           |
| AZ23C5V6    | DI           | 5.2-6.0                      | 40                                        | 400                                       | +0.020                          | 1.0                           |
| AZ23C6V2    | DJ           | 5.8-6.6                      | 10                                        | 200                                       | +0.030                          | 2.0                           |
| AZ23C6V8    | D11          | 6.4-7.2                      | 8.0                                       | 150                                       | +0.045                          | 3.0                           |
| AZ23C7V5    | D12          | 7.0-7.9                      | 7.0                                       | 50                                        | +0.050                          | 5.0                           |
| AZ23C8V2    | D13          | 7.7-8.7                      | 7.0                                       | 50                                        | +0.055                          | 6.0                           |
| AZ23C9V1    | D14          | 8.5-9.6                      | 10                                        | 50                                        | +0.065                          | 7.0                           |
| AZ23C10     | D15          | 9.4-10.6                     | 15                                        | 70                                        | +0.065                          | 7.5                           |
| AZ23C11     | D16          | 10.4-11.6                    | 20                                        | 70                                        | +0.070                          | 8.5                           |
| AZ23C12     | D17          | 11.4-12.7                    | 20                                        | 90                                        | +0.075                          | 9.0                           |
| AZ23C13     | D18          | 12.4-14.1                    | 25                                        | 110                                       | +0.080                          | 10.0                          |
| AZ23C15     | D19          | 13.8-15.6                    | 30                                        | 110                                       | +0.080                          | 11.0                          |
| AZ23C16     | D20          | 15.3-17.1                    | 40                                        | 170                                       | +0.090                          | 12.0                          |
| AZ23C18     | D21          | 16.8-19.1                    | 50                                        | 170                                       | +0.090                          | 14.0                          |
| AZ23C20     | D22          | 18.8-21.2                    | 50                                        | 220                                       | +0.090                          | 15.0                          |
| AZ23C22     | D23          | 20.8-23.3                    | 55                                        | 220                                       | +0.090                          | 17.0                          |
| AZ23C24     | D24          | 22.8-25.6                    | 80                                        | 220                                       | +0.090                          | 18.0                          |
| AZ23C27     | D25          | 25.1-28.9                    | 80                                        | 250                                       | +0.090                          | 20.0                          |
| AZ23C30     | D26          | 28-32                        | 80                                        | 250                                       | +0.090                          | 22.5                          |
| AZ23C33     | D27          | 31-35                        | 80                                        | 250                                       | +0.090                          | 25.0                          |
| AZ23C36     | D28          | 34-38                        | 90                                        | 250                                       | +0.090                          | 27.0                          |
| AZ23C39     | D29          | 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: 1. Short duration test pulse used to minimize self-heating effect.  
2. f = 1KHz.

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

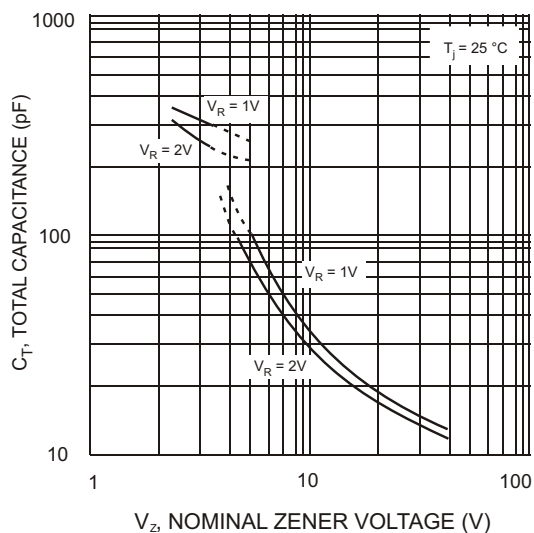


Fig. 1 Total Capacitance vs Nominal Zener Voltage

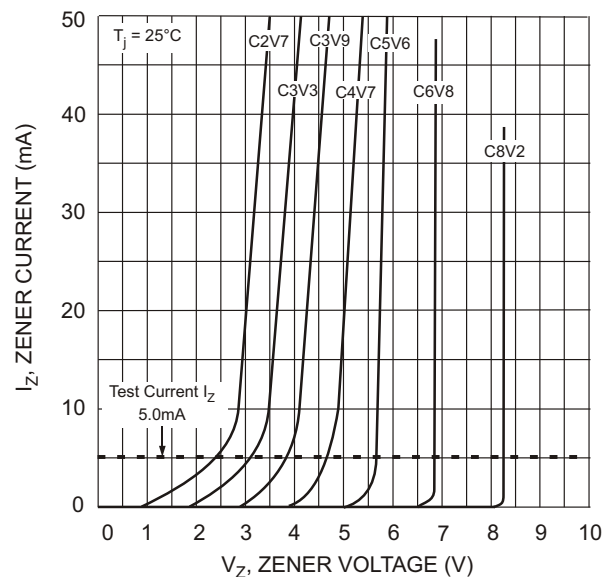


Fig. 2 Zener Breakdown Characteristics

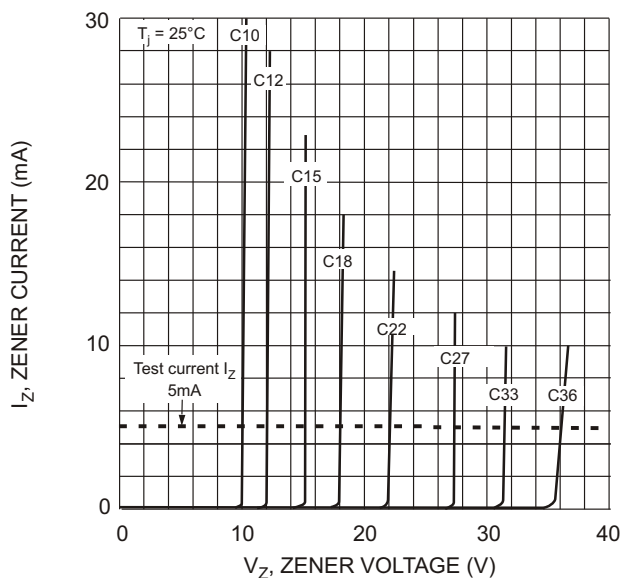


Fig. 3 Zener Breakdown Characteristics

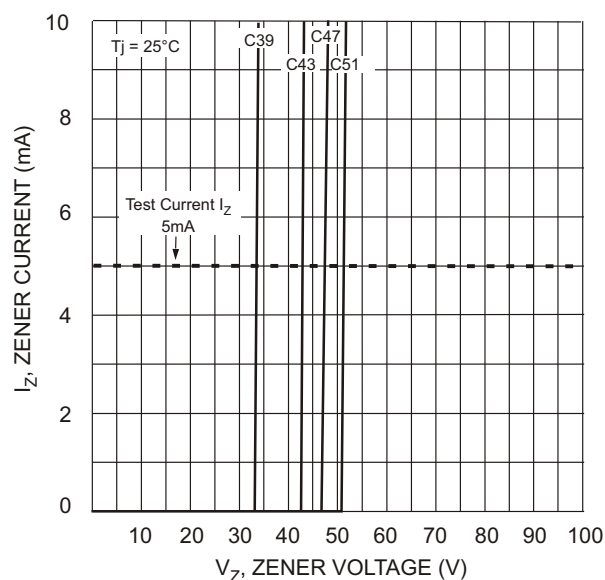


Fig. 4 Zener Breakdown Characteristics

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