

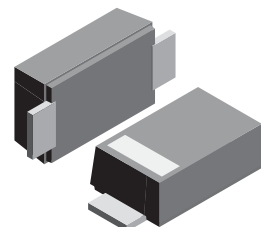
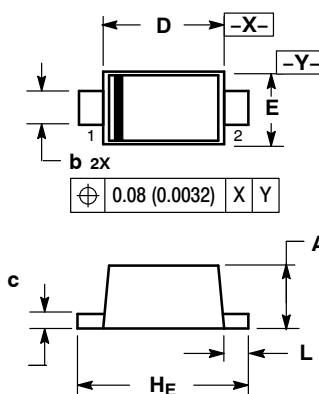
**VOLTAGE RANGE: 2.4 - 18V**

**POWER: 0.2Watts**

### Features

- Standard Zener Breakdown Voltage Range -2.4 V to 18 V
- Steady State Power Rating of 200 mW
- Small Body Outline Dimensions:  
0.039" x 0.024" (1.00 mm x 0.60 mm)
- Low Body Height: 0.016" (0.40 mm)
- ESD Rating of Class 3 (>16 kV) per Human Body Model
- Tight Tolerance  $V_Z$

SOD-923



DIMENSIONS: MILLIMETERS

| DIM            | MILLIMETERS |      |      | INCHES |       |       |
|----------------|-------------|------|------|--------|-------|-------|
|                | MIN         | NOM  | MAX  | MIN    | NOM   | MAX   |
| A              | 0.34        | 0.37 | 0.40 | 0.013  | 0.015 | 0.016 |
| b              | 0.15        | 0.20 | 0.25 | 0.006  | 0.008 | 0.010 |
| c              | 0.07        | 0.12 | 0.17 | 0.003  | 0.005 | 0.007 |
| D              | 0.75        | 0.80 | 0.85 | 0.030  | 0.031 | 0.033 |
| E              | 0.55        | 0.60 | 0.65 | 0.022  | 0.024 | 0.026 |
| H <sub>E</sub> | 0.95        | 1.00 | 1.05 | 0.037  | 0.039 | 0.041 |
| L              | 0.05        | 0.10 | 0.15 | 0.002  | 0.004 | 0.006 |

### Mechanical Data

- CASE:SOD-923



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

| Rating                                                                                     | Symbol                            | Max            | Unit        |
|--------------------------------------------------------------------------------------------|-----------------------------------|----------------|-------------|
| Total Device Dissipation FR-5 Board, (Note 1) @ T <sub>A</sub> = 25°C<br>Derate above 25°C | P <sub>D</sub>                    | 200<br>1.5     | mW<br>mW/°C |
| Thermal Resistance from Junction-to-Ambient                                                | R <sub>θJA</sub>                  | 635            | °C/W        |
| Junction and Storage Temperature Range                                                     | T <sub>J</sub> , T <sub>stg</sub> | -65 to<br>+150 | °C          |

**ELECTRICAL CHARACTERISTICS** ( $V_F = 0.9$  Max @  $I_F = 10$  mA for all types)

| Device  | Zener Voltage<br>VZ |       | Test<br>Current<br>Izt mA | Z <sub>ZT</sub><br>Z = IZT<br>@ 10%<br>Mod Ω<br>Max | Z <sub>ZK</sub> I <sub>Z</sub><br>= 1.0<br>mA Ω<br>Max | I <sub>ZK</sub><br>mA | Max<br>IR @ VR |     | dVZ/dt (mV/k)<br>@ I <sub>ZT1</sub> = 5 mA |     | CpF Max @<br>VR = 0<br>f = 1 MHz |
|---------|---------------------|-------|---------------------------|-----------------------------------------------------|--------------------------------------------------------|-----------------------|----------------|-----|--------------------------------------------|-----|----------------------------------|
|         | Min                 | Max   |                           |                                                     |                                                        |                       | μA             | V   | Min                                        | Max |                                  |
| NZ9F2V4 | 2.43                | 2.63  | 5                         | 100                                                 | 1000                                                   | 1                     | 50             | 1   | -3.5                                       | 0   | 210                              |
| NZ9F2V7 | 2.67                | 2.91  | 5                         | 100                                                 | 1000                                                   | 1                     | 20             | 1   | -3.5                                       | 0   | 210                              |
| NZ9F3V0 | 2.94                | 3.26  | 5                         | 100                                                 | 1000                                                   | 1                     | 10             | 1   | -3.5                                       | 0   | 210                              |
| NZ9F3V3 | 3.32                | 3.53  | 5                         | 100                                                 | 1000                                                   | 1                     | 10             | 1   | -3.5                                       | 0   | 210                              |
| NZ9F3V6 | 3.6                 | 3.85  | 5                         | 100                                                 | 1000                                                   | 1                     | 10             | 1   | -3.5                                       | 0   | 210                              |
| NZ9F3V9 | 3.89                | 4.16  | 5                         | 100                                                 | 1000                                                   | 1                     | 5              | 1   | -3.5                                       | 2.5 | 210                              |
| NZ9F4V3 | 4.17                | 4.43  | 5                         | 100                                                 | 1000                                                   | 1                     | 5              | 1   | -3.5                                       | 0   | 210                              |
| NZ9F4V7 | 4.55                | 4.75  | 5                         | 100                                                 | 800                                                    | 0.5                   | 2              | 1   | -3.5                                       | 0.2 | 150                              |
| NZ9F5V1 | 4.989               | 5.2   | 5                         | 80                                                  | 500                                                    | 0.5                   | 2              | 1.5 | -2.7                                       | 1.2 | 130                              |
| NZ9F5V6 | 5.49                | 5.73  | 5                         | 60                                                  | 200                                                    | 0.5                   | 1              | 2.5 | -2.0                                       | 2.5 | 115                              |
| NZ9F6V2 | 6.06                | 6.33  | 5                         | 60                                                  | 100                                                    | 0.5                   | 1              | 3   | 0.4                                        | 3.7 | 110                              |
| NZ9F6V8 | 6.65                | 6.93  | 5                         | 40                                                  | 60                                                     | 0.5                   | 0.5            | 3.5 | 1.2                                        | 4.5 | 105                              |
| NZ9F7V5 | 7.28                | 7.6   | 5                         | 30                                                  | 60                                                     | 0.5                   | 0.5            | 4   | 2.5                                        | 5.3 | 100                              |
| NZ9F8V2 | 8.02                | 8.36  | 5                         | 30                                                  | 60                                                     | 0.5                   | 0.5            | 5   | 3.2                                        | 6.2 | 90                               |
| NZ9F9V1 | 8.85                | 9.23  | 5                         | 30                                                  | 60                                                     | 0.5                   | 0.5            | 6   | 3.8                                        | 7   | 80                               |
| NZ9F10  | 9.77                | 10.21 | 5                         | 30                                                  | 60                                                     | 0.5                   | 0.1            | 7   | 4.5                                        | 8   | 80                               |
| NZ9F11  | 10.76               | 11.22 | 5                         | 30                                                  | 60                                                     | 0.5                   | 0.1            | 8   | 5.4                                        | 9   | 80                               |
| NZ9F12  | 11.74               | 12.24 | 5                         | 30                                                  | 80                                                     | 0.5                   | 0.1            | 9   | 6                                          | 10  | 80                               |
| NZ9F13  | 12.91               | 13.49 | 5                         | 37                                                  | 80                                                     | 0.5                   | 0.1            | 10  | 7                                          | 11  | 75                               |
| NZ9F15  | 14.34               | 14.98 | 5                         | 42                                                  | 80                                                     | 0.5                   | 0.1            | 11  | 9.2                                        | 13  | 70                               |
| NZ9F16  | 15.85               | 16.51 | 5                         | 50                                                  | 80                                                     | 0.5                   | 0.1            | 12  | 10.4                                       | 14  | 65                               |
| NZ9F18  | 17.56               | 18.35 | 5                         | 50                                                  | 80                                                     | 0.5                   | 0.1            | 14  | 12.4                                       | 16  | 60                               |