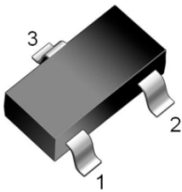


**FEATURES**

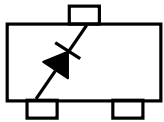
- Planar Die Construction.
- 350mW Power Dissipation
- Zener Voltages From 2.4V - 43V
- 5% Standard Vz Tolerance
- Designed for Surface Mount Application
- Plastic Material – UL Recognition Flammability Classification 94V-O



SOT-23

**MECHANICAL DATA**

- Case: SOT-23, Molded Plastic
- Terminals: Plated Leads Solderable per MIL-STD-202, Method 208
- Polarity: See Diagram
- Weight: 0.008 grams (approx.)



**Maximum Ratings (TA=25 °C unless otherwise noted)**

| Characteristic                              | Symbol                          | Value     | Unit  |
|---------------------------------------------|---------------------------------|-----------|-------|
| Forward Voltage (Note 2) @ IF = 10mA        | V <sub>F</sub>                  | 0.9       | V     |
| Power Dissipation(Note 1)                   | P <sub>D</sub>                  | 350       | mW    |
| Thermal Resistance, Junction to Ambient Air | R <sub>θJ</sub>                 | 357       | °C /W |
| Operating and Storage Temperature Range     | T <sub>j</sub> ,T <sub>ST</sub> | -65~ +150 | °C    |

Notes: 1. Device mounted on ceramic PCB: 7.6mm x 9.4mm x 0.87mm with pad areas 25mm<sup>2</sup>  
2. Short duration test pulse used to minimize self-heating effect  
3. f=1KHZ

**ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified**

| Type Number | Zener Voltage Range (Note 2)    |        |        |                 | Maximum Zener Impedance (Note 3) |                                  |                 | Maximum Reverse Current |                | Temperature Coefficient of Zener voltage @ I <sub>ZT</sub> = 5mA mV/°C |      |
|-------------|---------------------------------|--------|--------|-----------------|----------------------------------|----------------------------------|-----------------|-------------------------|----------------|------------------------------------------------------------------------|------|
|             |                                 |        |        |                 |                                  |                                  |                 |                         |                |                                                                        |      |
|             | V <sub>Z</sub> @I <sub>ZT</sub> |        |        | I <sub>ZT</sub> | Z <sub>ZT</sub> @I <sub>ZT</sub> | Z <sub>ZK</sub> @I <sub>ZK</sub> | I <sub>ZK</sub> | I <sub>R</sub>          | V <sub>R</sub> |                                                                        |      |
|             | Nom(V)                          | Min(V) | Max(V) | (mA)            | (Ω)                              |                                  | (mA)            | (μA)                    | (V)            | Min                                                                    | Max  |
| BZX84C2V4   | 2.4                             | 2.2    | 2.6    | 5               | 100                              | 600                              | 1.0             | 50                      | 1.0            | -3.5                                                                   | 0    |
| BZX84C2V7   | 2.7                             | 2.5    | 2.9    | 5               | 100                              | 600                              | 1.0             | 20                      | 1.0            | -3.5                                                                   | 0    |
| BZX84C3V0   | 3.0                             | 2.8    | 3.2    | 5               | 95                               | 600                              | 1.0             | 10                      | 1.0            | -3.5                                                                   | 0    |
| BZX84C3V3   | 3.3                             | 3.1    | 3.5    | 5               | 95                               | 600                              | 1.0             | 5                       | 1.0            | -3.5                                                                   | 0    |
| BZX84C3V6   | 3.6                             | 3.4    | 3.8    | 5               | 90                               | 600                              | 1.0             | 5                       | 1.0            | -3.5                                                                   | 0    |
| BZX84C3V9   | 3.9                             | 3.7    | 4.1    | 5               | 90                               | 600                              | 1.0             | 3                       | 1.0            | -3.5                                                                   | 0    |
| BZX84C4V3   | 4.3                             | 4.0    | 4.6    | 5               | 90                               | 600                              | 1.0             | 3                       | 1.0            | -3.5                                                                   | 0    |
| BZX84C4V7   | 4.7                             | 4.4    | 5.0    | 5               | 80                               | 500                              | 1.0             | 3                       | 2.0            | -3.5                                                                   | 0.2  |
| BZX84C5V1   | 5.1                             | 4.8    | 5.4    | 5               | 60                               | 480                              | 1.0             | 2                       | 2.0            | -2.7                                                                   | 1.2  |
| BZX84C5V6   | 5.6                             | 5.2    | 6.0    | 5               | 40                               | 400                              | 1.0             | 1                       | 2.0            | -2.0                                                                   | 2.5  |
| BZX84C6V2   | 6.2                             | 5.8    | 6.6    | 5               | 10                               | 150                              | 1.0             | 3                       | 4.0            | 0.4                                                                    | 3.7  |
| BZX84C6V8   | 6.8                             | 6.4    | 7.2    | 5               | 15                               | 80                               | 1.0             | 2                       | 4.0            | 1.2                                                                    | 4.5  |
| BZX84C7V5   | 7.5                             | 7.0    | 7.9    | 5               | 15                               | 80                               | 1.0             | 1                       | 5.0            | 2.5                                                                    | 5.3  |
| BZX84C8V2   | 8.2                             | 7.7    | 8.7    | 5               | 15                               | 80                               | 1.0             | 0.7                     | 5.0            | 3.2                                                                    | 6.2  |
| BZX84C9V1   | 9.1                             | 8.5    | 9.6    | 5               | 15                               | 100                              | 1.0             | 0.5                     | 6.0            | 3.8                                                                    | 7.0  |
| BZX84C10    | 10                              | 9.4    | 10.6   | 5               | 20                               | 150                              | 1.0             | 0.2                     | 7.0            | 4.5                                                                    | 8.0  |
| BZX84C11    | 11                              | 10.4   | 11.6   | 5               | 20                               | 150                              | 1.0             | 0.1                     | 8.0            | 5.4                                                                    | 9.0  |
| BZX84C12    | 12                              | 11.4   | 12.7   | 5               | 25                               | 150                              | 1.0             | 0.1                     | 8.0            | 6.0                                                                    | 10.0 |
| BZX84C13    | 13                              | 12.4   | 14.1   | 5               | 30                               | 170                              | 1.0             | 0.1                     | 8.0            | 7.0                                                                    | 11.0 |
| BZX84C15    | 15                              | 13.8   | 15.6   | 5               | 30                               | 200                              | 1.0             | 0.1                     | 10.5           | 9.2                                                                    | 13.0 |
| BZX84C16    | 16                              | 15.3   | 17.1   | 5               | 40                               | 200                              | 1.0             | 0.1                     | 11.2           | 10.4                                                                   | 14.0 |
| BZX84C18    | 18                              | 16.8   | 19.1   | 5               | 45                               | 225                              | 1.0             | 0.1                     | 12.6           | 12.4                                                                   | 16.0 |
| BZX84C20    | 20                              | 18.8   | 21.2   | 5               | 55                               | 225                              | 1.0             | 0.1                     | 14.0           | 14.4                                                                   | 18.0 |
| BZX84C22    | 22                              | 20.8   | 23.3   | 5               | 55                               | 250                              | 1.0             | 0.1                     | 15.4           | 16.4                                                                   | 20.0 |
| BZX84C24    | 24                              | 22.8   | 25.6   | 5               | 70                               | 250                              | 1.0             | 0.1                     | 16.8           | 18.4                                                                   | 22.0 |
| BZX84C27    | 27                              | 25.1   | 28.9   | 2               | 80                               | 300                              | 0.5             | 0.1                     | 18.9           | 21.4                                                                   | 25.3 |
| BZX84C30    | 30                              | 28.0   | 32.0   | 2               | 80                               | 300                              | 0.5             | 0.1                     | 21.0           | 24.4                                                                   | 29.4 |
| BZX84C33    | 33                              | 31.0   | 35.0   | 2               | 80                               | 325                              | 0.5             | 0.1                     | 23.1           | 27.4                                                                   | 33.4 |
| BZX84C36    | 36                              | 34.0   | 38.0   | 2               | 90                               | 350                              | 0.5             | 0.1                     | 25.2           | 30.4                                                                   | 37.4 |
| BZX84C39    | 39                              | 37.0   | 41.0   | 2               | 130                              | 350                              | 0.5             | 0.1                     | 27.3           | 33.4                                                                   | 41.2 |
| BZX84C43    | 43                              | 40.0   | 46.0   | 2               | 100                              | 700                              | 1.0             | 0.1                     | 32.0           | 10.0                                                                   | 12.0 |

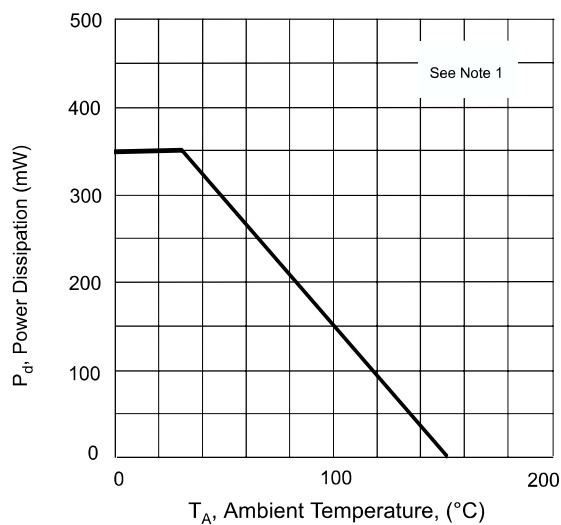
**Typical Characteristics**

Fig. 1 Power Derating Curve

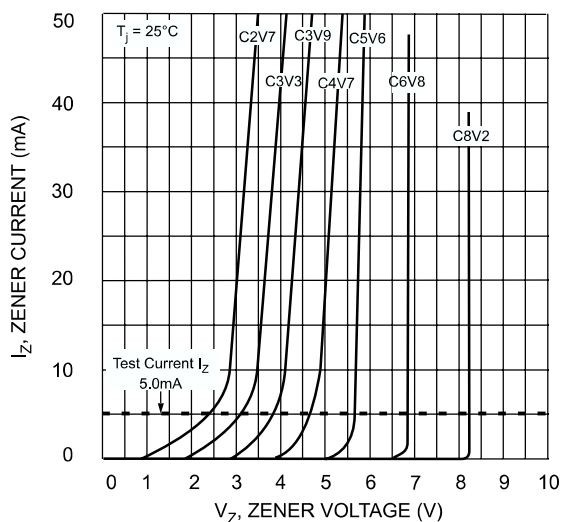


Fig. 2 Zener Breakdown Characteristics

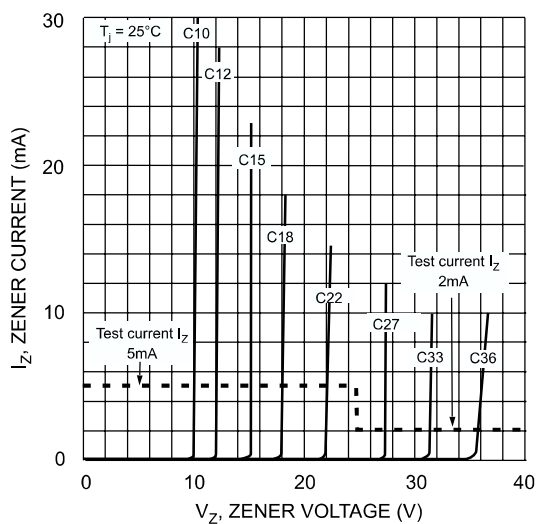


Fig. 3 Zener Breakdown Characteristics

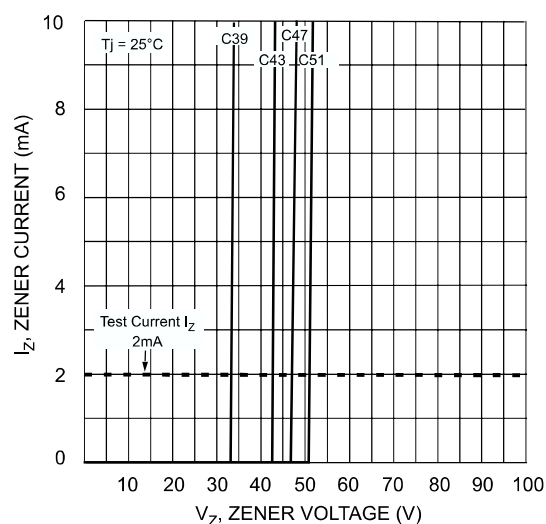


Fig. 4 Zener Breakdown Characteristics

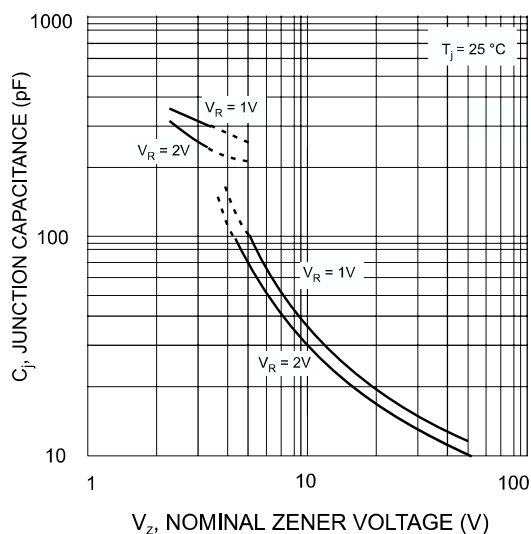
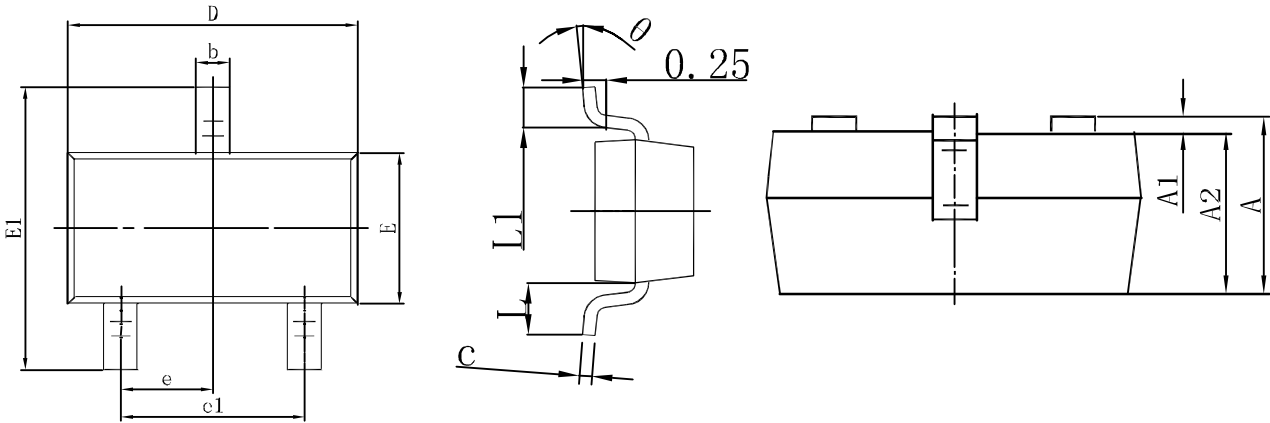


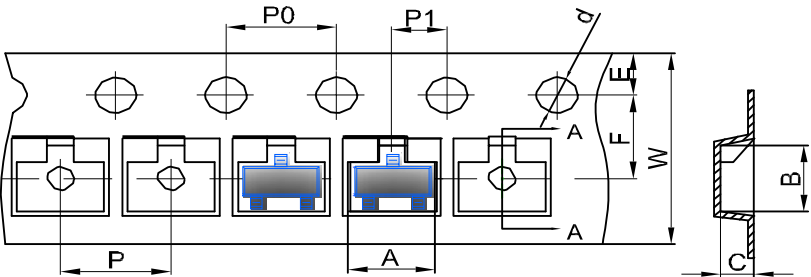
Fig. 5 Junction Capacitance vs Nominal Zener Voltage

**SOT-23 Package Outline Dimensions**



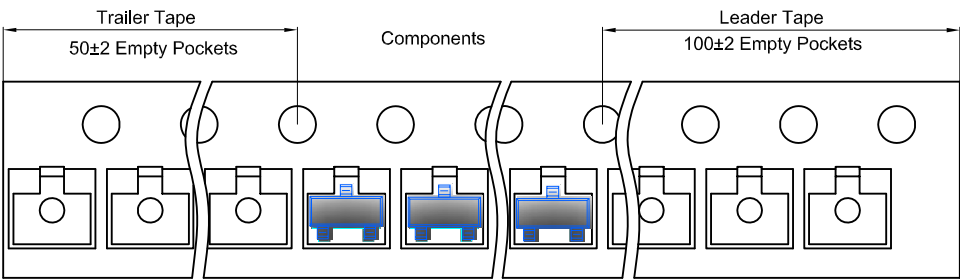
| Symbol | Dimensions In Millimeters |       | Dimensions In Inches |       |
|--------|---------------------------|-------|----------------------|-------|
|        | Min.                      | Max.  | Min.                 | Max.  |
| A      | 0.900                     | 1.150 | 0.035                | 0.045 |
| A1     | 0.000                     | 0.100 | 0.000                | 0.004 |
| A2     | 0.900                     | 1.050 | 0.035                | 0.041 |
| b      | 0.300                     | 0.500 | 0.012                | 0.020 |
| c      | 0.080                     | 0.150 | 0.003                | 0.006 |
| D      | 2.800                     | 3.000 | 0.110                | 0.118 |
| E      | 1.200                     | 1.400 | 0.047                | 0.055 |
| E1     | 2.250                     | 2.550 | 0.089                | 0.100 |
| e      | 0.950 TYP                 |       | 0.037 TYP            |       |
| e1     | 1.800                     | 2.000 | 0.071                | 0.079 |
| L      | 0.550 REF                 |       | 0.022 REF            |       |
| L1     | 0.300                     | 0.500 | 0.012                | 0.020 |
| θ      | 0°                        | 8°    | 0°                   | 8°    |

**SOT-23 Embossed Carrier Tape**

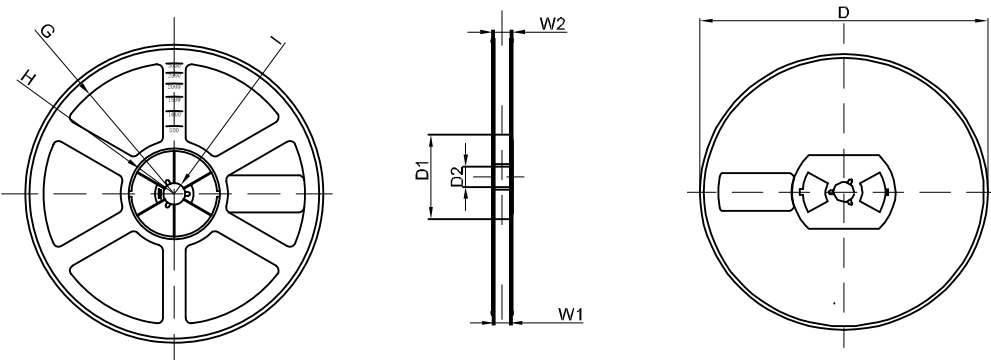


|           | DIMENSIONS ARE IN MILLIMETER |      |      |       |      |      |      |      |      |
|-----------|------------------------------|------|------|-------|------|------|------|------|------|
| TYPE      | A                            | B    | C    | d     | E    | F    | P0   | P    | P1   |
| SOT-23    | 3.15                         | 2.77 | 1.22 | φ1.50 | 1.75 | 3.50 | 4.00 | 4.00 | 2.00 |
| TOLERANCE | ±0.1                         | ±0.1 | ±0.1 | ±0.1  | ±0.1 | ±0.1 | ±0.1 | ±0.1 | ±0.1 |

**SOT-23 Tape Leader and Traller**



**SOT-23 Reel**



|             | DIMENSIONS ARE IN MILLIMETER |       |       |     |        |       |      |       |
|-------------|------------------------------|-------|-------|-----|--------|-------|------|-------|
| REEL OPTION | D                            | D1    | D2    | G   | H      | I     | W1   | W2    |
| 7" DIA      | φ178                         | 54.40 | 13.00 | R78 | R25.60 | R6.50 | 9.50 | 12.30 |
| TOLERANCE   | ±2                           | ±1    | ±1    | ±1  | ±1     | ±1    | ±1   | ±1    |