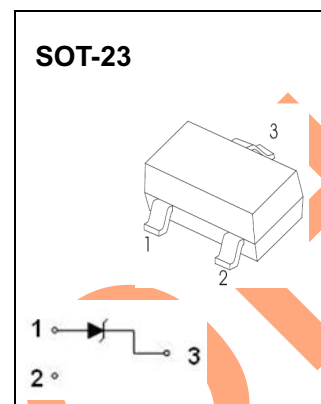


#### FEATURES

- Planar Die Construction
- 300mW Power Dissipation
- Zener Voltages from 2.4V - 43V
- Ultra-Small Surface Mount Package Power Dissipation



#### Maximum Ratings( $T_a=25^{\circ}\text{C}$ unless otherwise specified)

| Characteristic                                 | Symbol          | Value    | Unit                 |
|------------------------------------------------|-----------------|----------|----------------------|
| Forward Voltage (Note 2) @ $I_F = 10\text{mA}$ | $V_F$           | 0.9      | V                    |
| Power Dissipation(Note 1)                      | $P_d$           | 300      | mW                   |
| Thermal Resistance from Junction to Ambient    | $R_{\theta JA}$ | 417      | $^{\circ}\text{C/W}$ |
| Junction Temperature                           | $T_j$           | 150      | $^{\circ}\text{C}$   |
| Storage Temperature Range                      | $T_{stg}$       | -55~+150 | $^{\circ}\text{C}$   |

### ELECTRICAL CHARACTERISTICS

T<sub>a</sub>=25°C unless otherwise specified

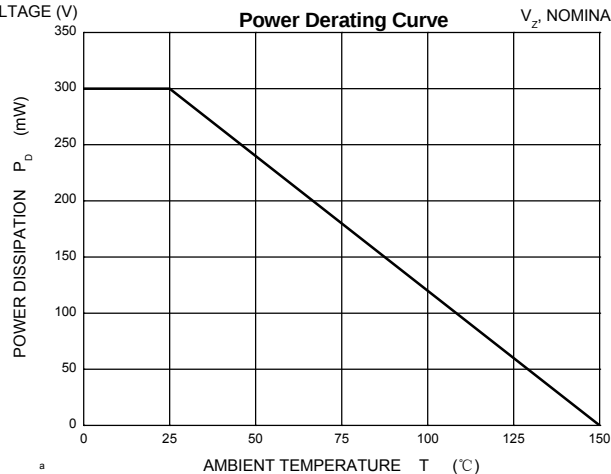
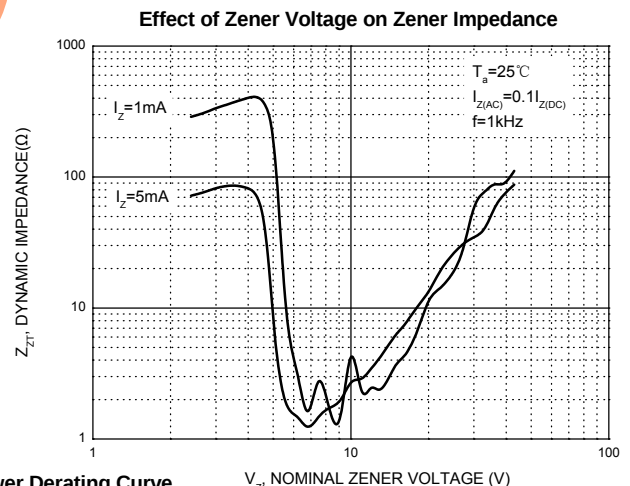
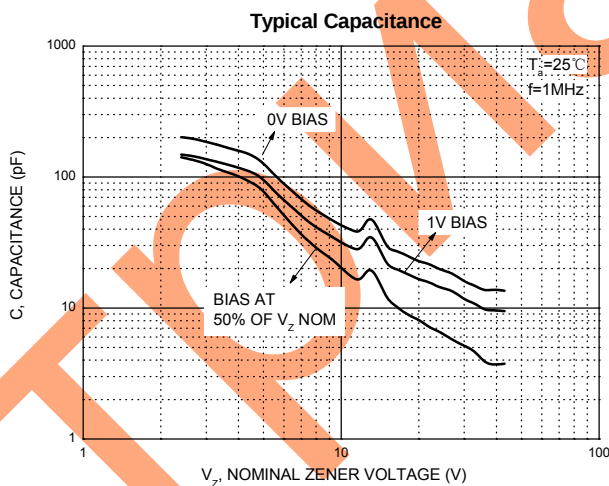
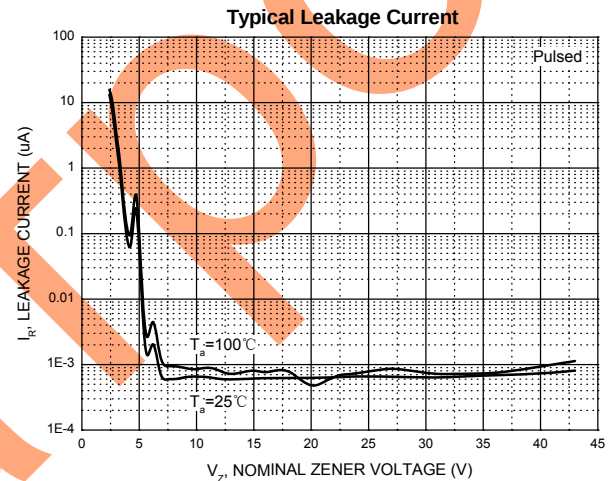
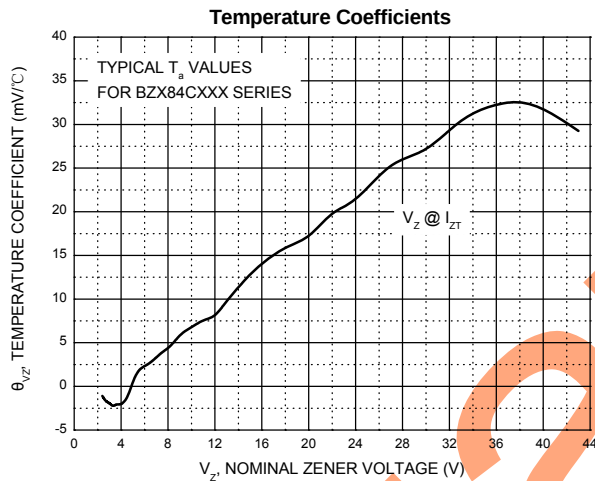
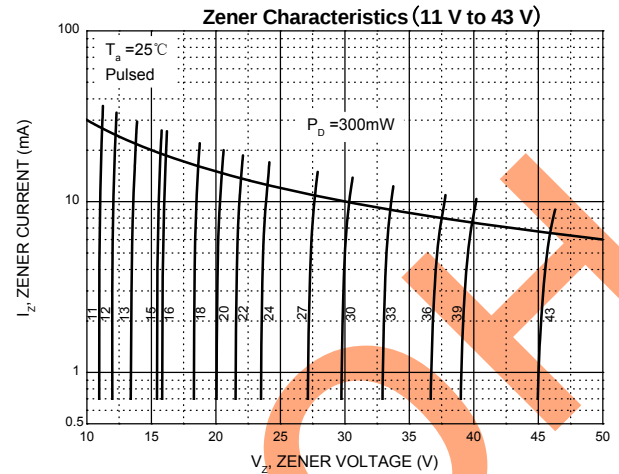
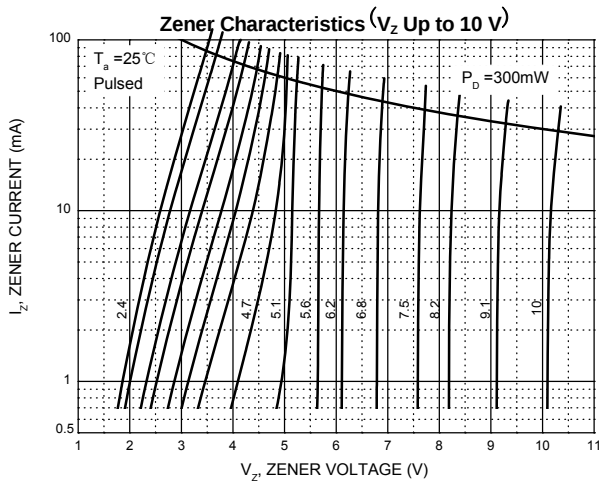
| Type Number | Code | Zener Voltage Range (Note 2)    |        |        |                 | Maximum Zener Impedance (Note 3) |                                  |                 | Maximum Reverse Current |                | Temperature Coefficient of Zener voltage @ I <sub>ZT</sub> =5mA |      |
|-------------|------|---------------------------------|--------|--------|-----------------|----------------------------------|----------------------------------|-----------------|-------------------------|----------------|-----------------------------------------------------------------|------|
|             |      | 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> | mV/°C                                                           |      |
|             |      | Nom(V)                          | Min(V) | Max(V) | (mA)            | (Ω)                              |                                  | (mA)            | (μA)                    | (V)            | Min                                                             | Max  |
| BZX84C2V4   | Z11  | 2.4                             | 2.20   | 2.60   | 5               | 100                              | 600                              | 1.0             | 50                      | 1.0            | -3.5                                                            | 0    |
| BZX84C2V7   | Z12  | 2.7                             | 2.5    | 2.9    | 5               | 100                              | 600                              | 1.0             | 20                      | 1.0            | -3.5                                                            | 0    |
| BZX84C3V0   | Z13  | 3.0                             | 2.8    | 3.2    | 5               | 95                               | 600                              | 1.0             | 10                      | 1.0            | -3.5                                                            | 0    |
| BZX84C3V3   | Z14  | 3.3                             | 3.1    | 3.5    | 5               | 95                               | 600                              | 1.0             | 5                       | 1.0            | -3.5                                                            | 0    |
| BZX84C3V6   | Z15  | 3.6                             | 3.4    | 3.8    | 5               | 90                               | 600                              | 1.0             | 5                       | 1.0            | -3.5                                                            | 0    |
| BZX84C3V9   | Z16  | 3.9                             | 3.7    | 4.1    | 5               | 90                               | 600                              | 1.0             | 3                       | 1.0            | -3.5                                                            | 0    |
| BZX84C4V3   | Z17  | 4.3                             | 4.0    | 4.6    | 5               | 90                               | 600                              | 1.0             | 3                       | 1.0            | -3.5                                                            | 0    |
| BZX84C4V7   | Z1   | 4.7                             | 4.4    | 5.0    | 5               | 80                               | 500                              | 1.0             | 3                       | 2.0            | -3.5                                                            | 0.2  |
| BZX84C5V1   | Z2   | 5.1                             | 4.8    | 5.4    | 5               | 60                               | 480                              | 1.0             | 2                       | 2.0            | -2.7                                                            | 1.2  |
| BZX84C5V6   | Z3   | 5.6                             | 5.2    | 6.0    | 5               | 40                               | 400                              | 1.0             | 1                       | 2.0            | -2.0                                                            | 2.5  |
| BZX84C6V2   | Z4   | 6.2                             | 5.8    | 6.6    | 5               | 10                               | 150                              | 1.0             | 3                       | 4.0            | 0.4                                                             | 3.7  |
| BZX84C6V8   | Z5   | 6.8                             | 6.4    | 7.2    | 5               | 15                               | 80                               | 1.0             | 2                       | 4.0            | 1.2                                                             | 4.5  |
| BZX84C7V5   | Z6   | 7.5                             | 7.0    | 7.9    | 5               | 15                               | 80                               | 1.0             | 1                       | 5.0            | 2.5                                                             | 5.3  |
| BZX84C8V2   | Z7   | 8.2                             | 7.7    | 8.7    | 5               | 15                               | 80                               | 1.0             | 0.7                     | 5.0            | 3.2                                                             | 6.2  |
| BZX84C9V1   | Z8   | 9.1                             | 8.5    | 9.6    | 5               | 15                               | 100                              | 1.0             | 0.5                     | 6.0            | 3.8                                                             | 7.0  |
| BZX84C10    | Z9   | 10                              | 9.4    | 10.6   | 5               | 20                               | 150                              | 1.0             | 0.2                     | 7.0            | 4.5                                                             | 8.0  |
| BZX84C11    | Y1   | 11                              | 10.4   | 11.6   | 5               | 20                               | 150                              | 1.0             | 0.1                     | 8.0            | 5.4                                                             | 9.0  |
| BZX84C12    | Y2   | 12                              | 11.4   | 12.7   | 5               | 25                               | 150                              | 1.0             | 0.1                     | 8.0            | 6.0                                                             | 10.0 |
| BZX84C13    | Y3   | 13                              | 12.4   | 14.1   | 5               | 30                               | 170                              | 1.0             | 0.1                     | 8.0            | 7.0                                                             | 11.0 |
| BZX84C15    | Y4   | 15                              | 13.8   | 15.6   | 5               | 30                               | 200                              | 1.0             | 0.1                     | 10.5           | 9.2                                                             | 13.0 |
| BZX84C16    | Y5   | 16                              | 15.3   | 17.1   | 5               | 40                               | 200                              | 1.0             | 0.1                     | 11.2           | 10.4                                                            | 14.0 |
| BZX84C18    | Y6   | 18                              | 16.8   | 19.1   | 5               | 45                               | 225                              | 1.0             | 0.1                     | 12.6           | 12.4                                                            | 16.0 |
| BZX84C20    | Y7   | 20                              | 18.8   | 21.2   | 5               | 55                               | 225                              | 1.0             | 0.1                     | 14.0           | 14.4                                                            | 18.0 |
| BZX84C22    | Y8   | 22                              | 20.8   | 23.3   | 5               | 55                               | 250                              | 1.0             | 0.1                     | 15.4           | 16.4                                                            | 20.0 |
| BZX84C24    | Y9   | 24                              | 22.8   | 25.6   | 5               | 70                               | 250                              | 1.0             | 0.1                     | 16.8           | 18.4                                                            | 22.0 |
| BZX84C27    | Y10  | 27                              | 25.1   | 28.9   | 2               | 80                               | 300                              | 0.5             | 0.1                     | 18.9           | 21.4                                                            | 25.3 |
| BZX84C30    | Y11  | 30                              | 28.0   | 32.0   | 2               | 80                               | 300                              | 0.5             | 0.1                     | 21.0           | 24.4                                                            | 29.4 |
| BZX84C33    | Y12  | 33                              | 31.0   | 35.0   | 2               | 80                               | 325                              | 0.5             | 0.1                     | 23.1           | 27.4                                                            | 33.4 |
| BZX84C36    | Y13  | 36                              | 34.0   | 38.0   | 2               | 90                               | 350                              | 0.5             | 0.1                     | 25.2           | 30.4                                                            | 37.4 |
| BZX84C39    | Y14  | 39                              | 37.0   | 41.0   | 2               | 130                              | 350                              | 0.5             | 0.1                     | 27.3           | 33.4                                                            | 41.2 |
| BZX84C43    | Y15  | 43                              | 40.0   | 46.0   | 2               | 100                              | 700                              | 1               | 0.1                     | 32             | 10                                                              | 12   |

Notes: 1. Valid provided that device terminals are kept at ambient temperature.

2. Tested with pulses, period=5ms,pulse width =300μs.

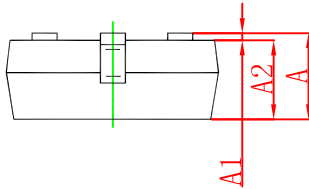
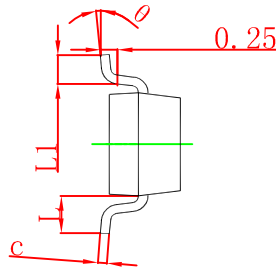
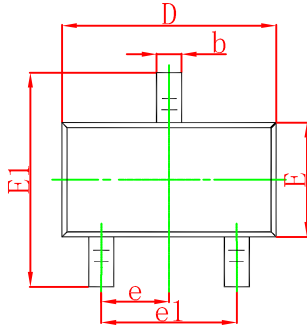
3. f = 1kHz.

### ELECTRICAL CHARACTERISTICS



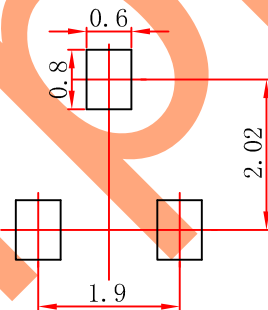


## SOT-23 Package Outline Dimensions



| 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 Suggested Pad Layout



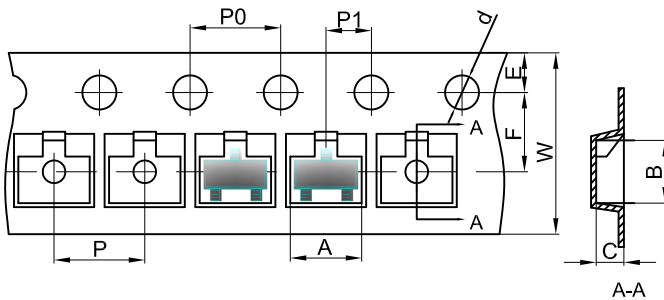
Note:

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$ .
3. The pad layout is for reference purposes only.



## SOT-23 Tape and Reel

### SOT-23 Embossed Carrier Tape



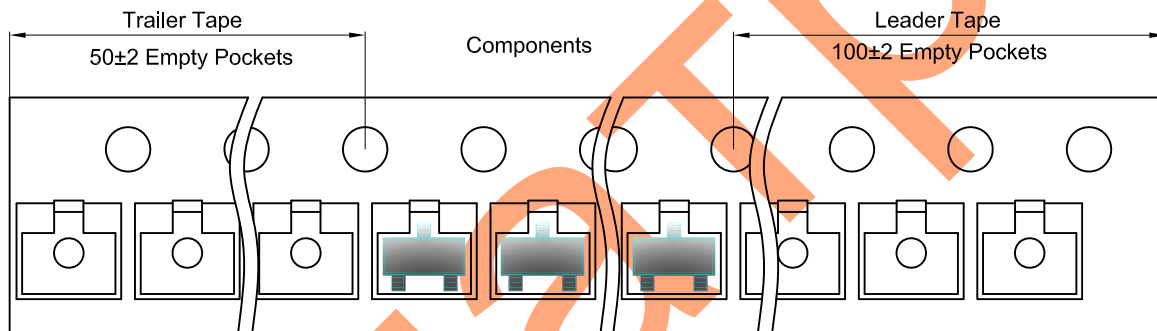
#### Packaging Description:

SOT-23 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 17.8cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

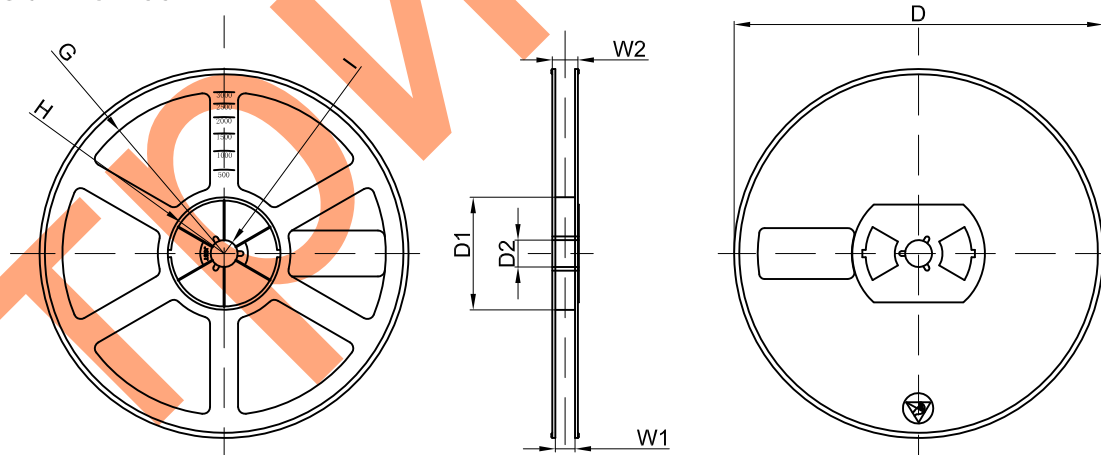
Dimensions are in millimeter

| Pkg type | A    | B    | C    | d     | E    | F    | P0   | P    | P1   | W    |
|----------|------|------|------|-------|------|------|------|------|------|------|
| SOT-23   | 3.15 | 2.77 | 1.22 | Ø1.50 | 1.75 | 3.50 | 4.00 | 4.00 | 2.00 | 8.00 |

### SOT-23 Tape Leader and Trailer



### SOT-23 Reel



Dimensions are in millimeter

| Reel Option | D       | D1    | D2    | G      | H      | I     | W1   | W2    |
|-------------|---------|-------|-------|--------|--------|-------|------|-------|
| 7"Dia       | Ø178.00 | 54.40 | 13.00 | R78.00 | R25.60 | R6.50 | 9.50 | 12.30 |

| REEL     | Reel Size | Box        | Box Size(mm) | Carton      | Carton Size(mm) | G.W.(kg) |
|----------|-----------|------------|--------------|-------------|-----------------|----------|
| 3000 pcs | 7 inch    | 45,000 pcs | 203×203×195  | 180,000 pcs | 438×438×220     |          |