

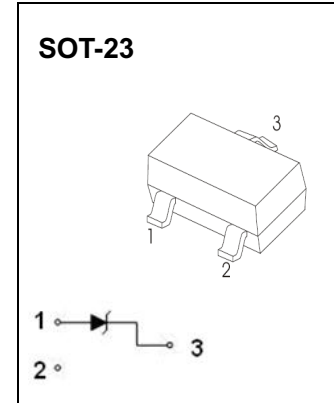


# BZX84C2V4-BZX84C43

## ZENER DIODE

### 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)

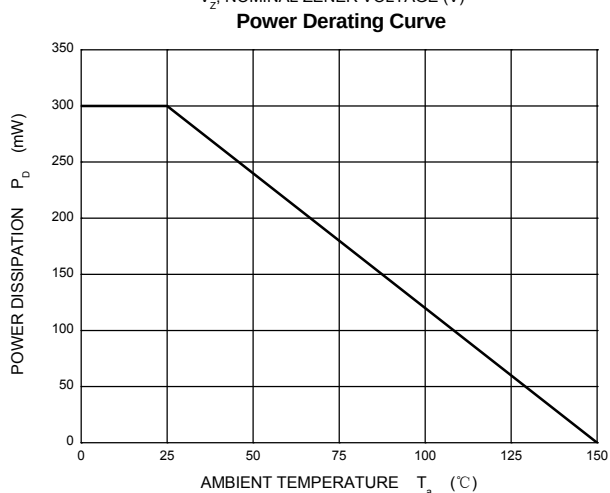
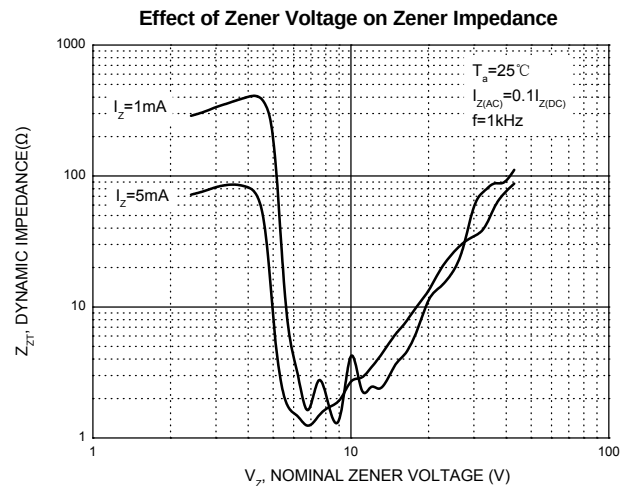
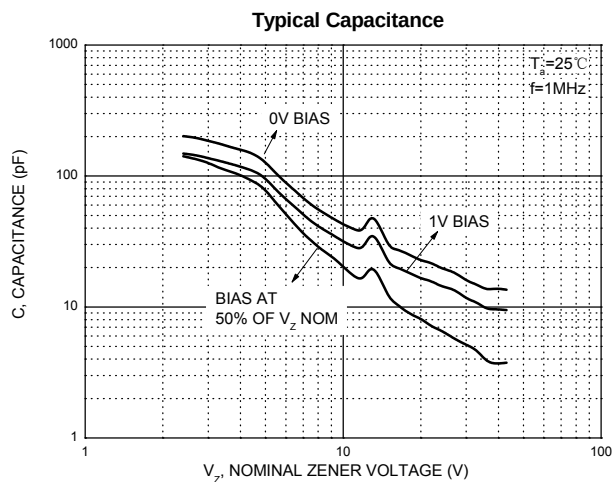
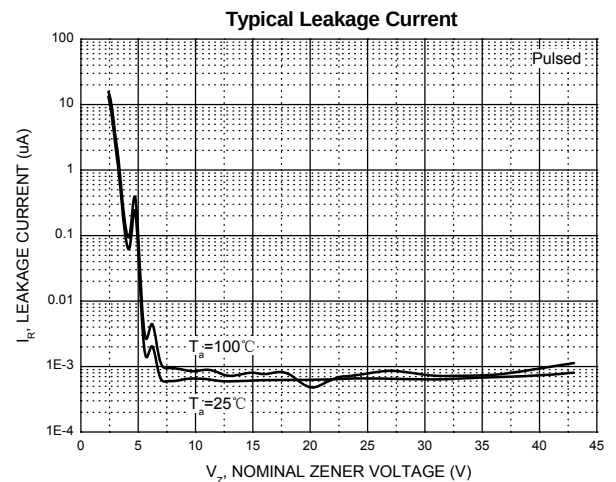
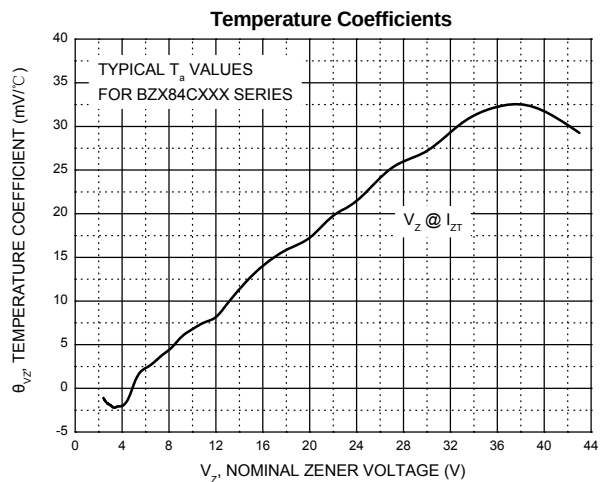
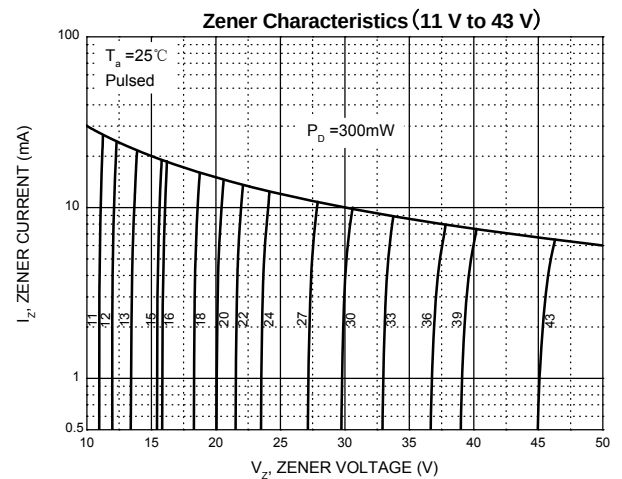
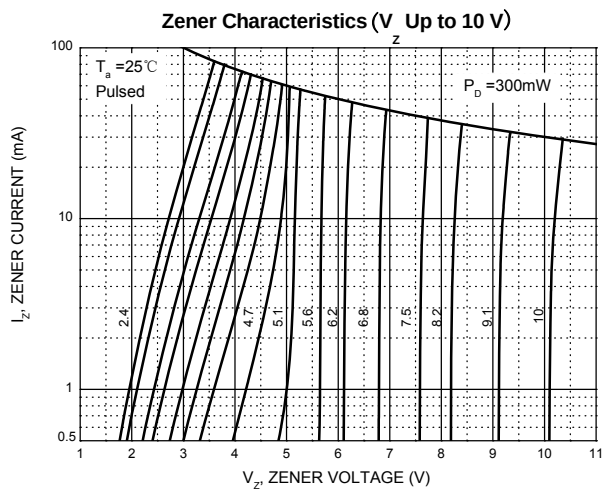
| Characteristic                                 | Symbol          | Value    | Unit                 |
|------------------------------------------------|-----------------|----------|----------------------|
| Forward Voltage (Note 2) @ $I_F = 10\text{mA}$ | $V_F$           | 0.9      | V                    |
| 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 | $^{\circ}\text{C}$   |

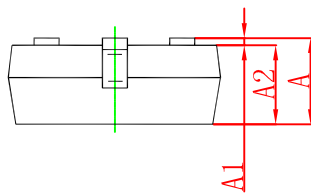
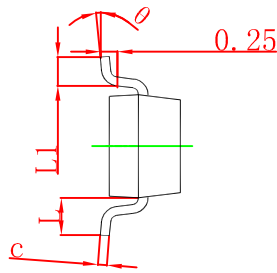
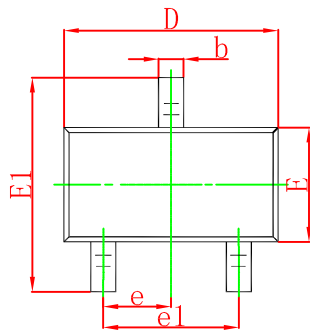

**ZENER DIODE**

**$T_a = 25^\circ\text{C}$  unless otherwise specified**

| Type Number | Code | Zener Voltage Range (Note 2) |        |        |          | Maximum Zener Impedance (Note 3) |                   |          | Maximum Reverse Current |       | Temperature Coefficient of Zener voltage @ $I_{ZT} = 5\text{mA}$ |      |
|-------------|------|------------------------------|--------|--------|----------|----------------------------------|-------------------|----------|-------------------------|-------|------------------------------------------------------------------|------|
|             |      |                              |        |        |          |                                  |                   |          |                         |       |                                                                  |      |
|             |      | $V_Z @ I_{ZT}$               |        |        | $I_{ZT}$ | $Z_{ZT} @ I_{ZT}$                | $Z_{ZK} @ I_{ZK}$ | $I_{ZK}$ | $I_R$                   | $V_R$ | 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   |

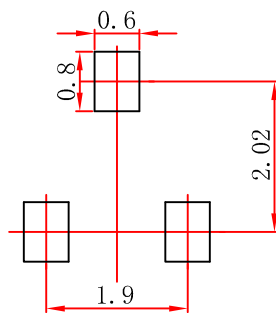
- Notes: 1. Valid provided that device terminals are kept at ambient temperature.  
2. Tested with pulses, period=5ms, pulse width =300μs.  
3. f = 1kHz.





| 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.