

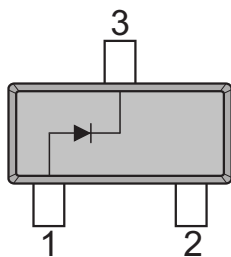


Silicon Planar Zener Diodes

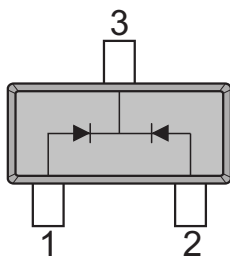
**FEATURES**

- Total power dissipation: Max. 350mW.
- Wide zener reverse voltage range 2.0V to 75V.
- Small plastic package suitable for surface mounted design.
- Tolerance approximately  $\pm 2\%$  and  $\pm 5\%$

**SOT-23**



Suffix A



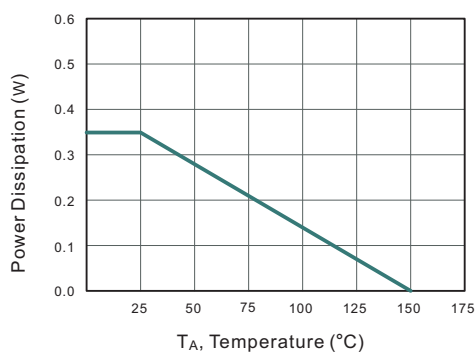
Suffix CA

**Absolute Maximum Ratings And Characteristics (Ta = 25 °C)**

| Parameter                               | Symbol         | Value      | Unit |
|---|----------------|------------|------|
| Power Dissipation                       | $P_{tot}$      | 350        | mW   |
| Forward Voltage at $I_F = 10\text{mA}$  | $V_F$          | 0.9        | V    |
| Operating and Storage Temperature Range | $T_j, T_{stg}$ | -55 ~ +150 | °C   |

(1) Thermal resistance from junction to ambient at P.C.B. mounted with 2.0" X 2.0" (5 X 5 cm) copper areas pads.

**Fig.1 Maximum Continuous Power Derating**





Characteristics at Ta = 25°C

| Type       | Marking | Type        | Marking | Zener Voltage Range <sup>(1)</sup>    |         |         | I <sub>ZT</sub> | Dynamic Impedance                     | Reverse Current |                   |
|------------|---------|-------------|---------|---------------------------------------|---------|---------|-----------------|---------------------------------------|-----------------|-------------------|
|            |         |             |         | V <sub>ZT</sub> (at I <sub>ZT</sub> ) |         |         |                 | Z <sub>ZT</sub> (at I <sub>ZT</sub> ) | I <sub>R</sub>  | at V <sub>R</sub> |
|            |         |             |         | Min (V)                               | Nom (V) | Max (V) | (mA)            | Max (Ω)                               | Max (μA)        | (V)               |
| BZX84B2V0A | BAA     | BZX84B2V0CA | BACA    | 1.96                                  | 2       | 2.04    | 5               | 100                                   | 120             | 0.5               |
| BZX84B2V2A | BBA     | BZX84B2V2CA | BBCA    | 2.16                                  | 2.2     | 2.24    | 5               | 100                                   | 120             | 0.7               |
| BZX84B2V4A | BCA     | BZX84B2V4CA | BCCA    | 2.35                                  | 2.4     | 2.45    | 5               | 100                                   | 120             | 1                 |
| BZX84B2V7A | BDA     | BZX84B2V7CA | BDCA    | 2.65                                  | 2.7     | 2.75    | 5               | 110                                   | 120             | 1                 |
| BZX84B3V0A | BEA     | BZX84B3V0CA | BECA    | 2.94                                  | 3       | 3.06    | 5               | 120                                   | 50              | 1                 |
| BZX84B3V3A | BFA     | BZX84B3V3CA | BFCA    | 3.23                                  | 3.3     | 3.37    | 5               | 130                                   | 20              | 1                 |
| BZX84B3V6A | BGA     | BZX84B3V6CA | BGCA    | 3.53                                  | 3.6     | 3.67    | 5               | 130                                   | 10              | 1                 |
| BZX84B3V9A | BHA     | BZX84B3V9CA | BHCA    | 3.82                                  | 3.9     | 3.98    | 5               | 130                                   | 5               | 1                 |
| BZX84B4V3A | BJA     | BZX84B4V3CA | BJCA    | 4.21                                  | 4.3     | 4.39    | 5               | 130                                   | 5               | 1                 |
| BZX84B4V7A | BKA     | BZX84B4V7CA | BKCA    | 4.61                                  | 4.7     | 4.79    | 5               | 130                                   | 2               | 1                 |
| BZX84B5V1A | BLA     | BZX84B5V1CA | BLCA    | 5.00                                  | 5.1     | 5.20    | 5               | 130                                   | 2               | 1.5               |
| BZX84B5V6A | BMA     | BZX84B5V6CA | BMCA    | 5.49                                  | 5.6     | 5.71    | 5               | 80                                    | 1               | 2.5               |
| BZX84B6V2A | BNA     | BZX84B6V2CA | BNCA    | 6.08                                  | 6.2     | 6.32    | 5               | 50                                    | 1               | 3                 |
| BZX84B6V8A | BPA     | BZX84B6V8CA | BPCA    | 6.66                                  | 6.8     | 6.94    | 5               | 30                                    | 0.5             | 3.5               |
| BZX84B7V5A | BRA     | BZX84B7V5CA | BRCA    | 7.35                                  | 7.5     | 7.65    | 5               | 30                                    | 0.5             | 4                 |
| BZX84B8V2A | BSA     | BZX84B8V2CA | BSCA    | 8.04                                  | 8.2     | 8.36    | 5               | 30                                    | 0.5             | 5                 |
| BZX84B9V1A | BTA     | BZX84B9V1CA | BTCA    | 8.92                                  | 9.1     | 9.28    | 5               | 30                                    | 0.5             | 6                 |
| BZX84B10A  | BUA     | BZX84B10CA  | BUCA    | 9.80                                  | 10      | 10.2    | 5               | 30                                    | 0.1             | 7                 |
| BZX84B11A  | BVA     | BZX84B11CA  | BVCA    | 10.78                                 | 11      | 11.22   | 5               | 30                                    | 0.1             | 8                 |
| BZX84B12A  | BWA     | BZX84B12CA  | BWCA    | 11.76                                 | 12      | 12.24   | 5               | 35                                    | 0.1             | 9                 |
| BZX84B13A  | BXA     | BZX84B13CA  | BXCA    | 12.74                                 | 13      | 13.26   | 5               | 35                                    | 0.1             | 10                |
| BZX84B15A  | BYA     | BZX84B15CA  | BYCA    | 14.70                                 | 15      | 15.3    | 5               | 40                                    | 0.1             | 11                |
| BZX84B16A  | BZA     | BZX84B16CA  | BZCA    | 15.68                                 | 16      | 16.32   | 5               | 40                                    | 0.1             | 12                |
| BZX84B18A  | B1A     | BZX84B18CA  | B1CA    | 17.64                                 | 18      | 18.36   | 5               | 45                                    | 0.1             | 13                |
| BZX84B20A  | B2A     | BZX84B20CA  | B2CA    | 19.60                                 | 20      | 20.4    | 5               | 50                                    | 0.1             | 15                |
| BZX84B22A  | B3A     | BZX84B22CA  | B3CA    | 21.56                                 | 22      | 22.44   | 5               | 55                                    | 0.1             | 17                |
| BZX84B24A  | B4A     | BZX84B24CA  | B4CA    | 23.52                                 | 24      | 24.48   | 5               | 60                                    | 0.1             | 19                |
| BZX84B27A  | B5A     | BZX84B27CA  | B5CA    | 26.46                                 | 27      | 27.54   | 5               | 70                                    | 0.1             | 21                |
| BZX84B30A  | B6A     | BZX84B30CA  | B6CA    | 29.40                                 | 30      | 30.6    | 5               | 80                                    | 0.1             | 23                |
| BZX84B33A  | B7A     | BZX84B33CA  | B7CA    | 32.34                                 | 33      | 33.66   | 5               | 80                                    | 0.1             | 25                |
| BZX84B36A  | B8A     | BZX84B36CA  | B8CA    | 35.28                                 | 36      | 36.72   | 5               | 90                                    | 0.1             | 27                |
| BZX84B39A  | B9A     | BZX84B39CA  | B9CA    | 38.22                                 | 39      | 39.78   | 2.5             | 100                                   | 2               | 30                |
| BZX84B43A  | 3AA     | BZX84B43CA  | 3ACA    | 42.14                                 | 43      | 43.86   | 2.5             | 130                                   | 2               | 33                |
| BZX84B47A  | 3BA     | BZX84B47CA  | 3BCA    | 46.06                                 | 47      | 47.94   | 2.5             | 150                                   | 2               | 36                |
| BZX84B51A  | 3CA     | BZX84B51CA  | 3CCA    | 49.98                                 | 51      | 52.02   | 2.5             | 180                                   | 1               | 39                |
| BZX84B56A  | 3DA     | BZX84B56CA  | 3DCA    | 54.88                                 | 56      | 57.12   | 2.5             | 180                                   | 1               | 43                |
| BZX84B62A  | 3EA     | BZX84B62CA  | 3ECA    | 60.76                                 | 62      | 63.24   | 2.5             | 200                                   | 0.2             | 47                |
| BZX84B68A  | 3FA     | BZX84B68CA  | 3FCA    | 66.64                                 | 68      | 69.36   | 2.5             | 250                                   | 0.2             | 52                |
| BZX84B75A  | 3HA     | BZX84B75CA  | 3HCA    | 73.50                                 | 75      | 76.5    | 2.5             | 300                                   | 0.2             | 57                |

(1) V<sub>ZT</sub> is tested with pulses (20 ms)  
(2) B:±2%  
(3) C:±5%



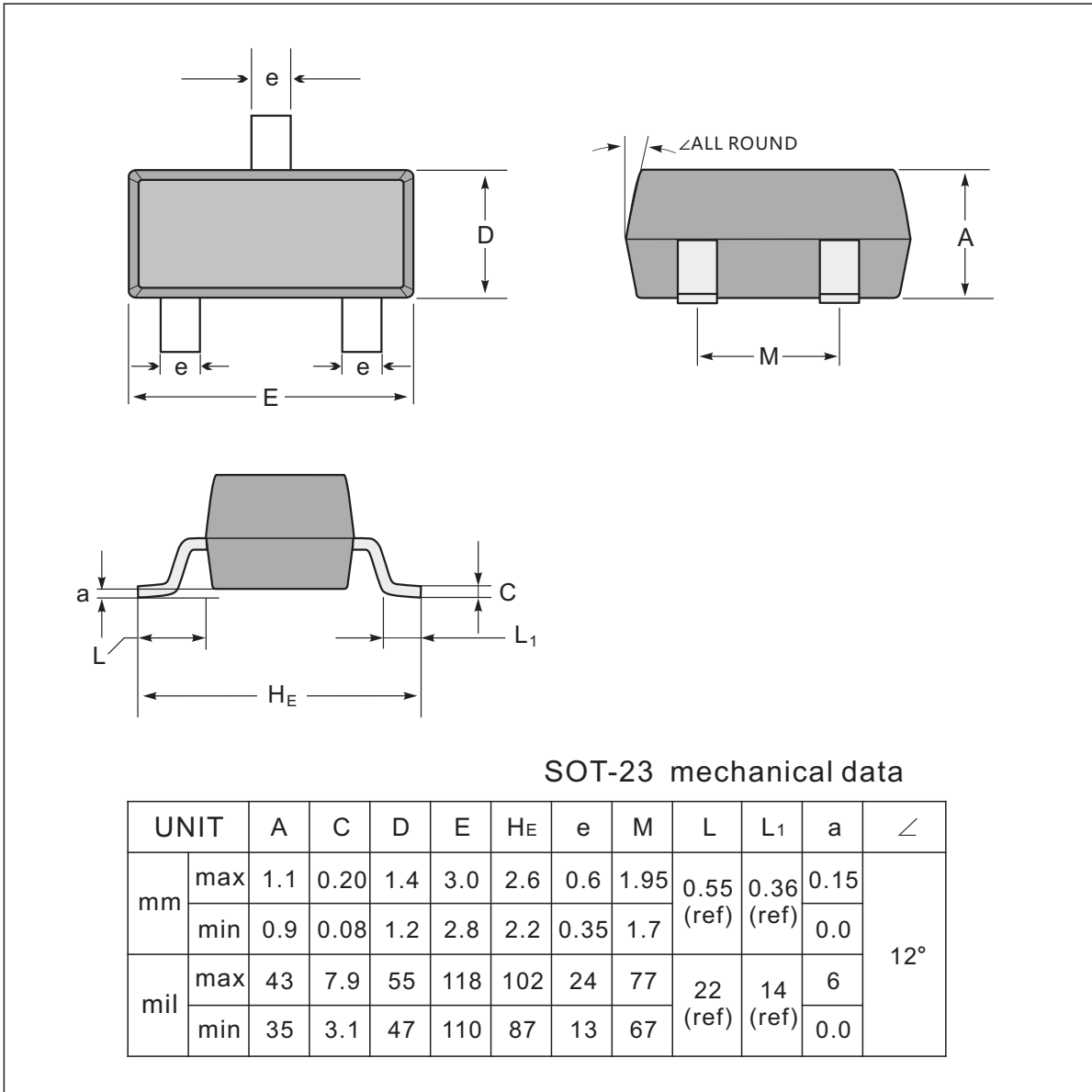
Characteristics at Ta = 25°C

| Type       | Marking | Type        | Marking | Zener Voltage Range <sup>(1)</sup>    |         |         | I <sub>ZT</sub> | Dynamic Impedance                     | Reverse Current |                   |
|------------|---------|-------------|---------|---------------------------------------|---------|---------|-----------------|---------------------------------------|-----------------|-------------------|
|            |         |             |         | V <sub>ZT</sub> (at I <sub>ZT</sub> ) |         |         |                 | Z <sub>ZT</sub> (at I <sub>ZT</sub> ) | I <sub>R</sub>  | at V <sub>R</sub> |
|            |         |             |         | Min (V)                               | Nom (V) | Max (V) | (mA)            | Max (Ω)                               | Max (μA)        | (V)               |
| BZX84C2V0A | CAA     | BZX84C2V0CA | CACA    | 1.8                                   | 2.0     | 2.15    | 5               | 100                                   | 120             | 0.5               |
| BZX84C2V2A | CBA     | BZX84C2V2CA | CBCA    | 2.08                                  | 2.2     | 2.33    | 5               | 100                                   | 120             | 0.7               |
| BZX84C2V4A | CCA     | BZX84C2V4CA | CCCA    | 2.28                                  | 2.4     | 2.56    | 5               | 100                                   | 120             | 1                 |
| BZX84C2V7A | CDA     | BZX84C2V7CA | CDCA    | 2.5                                   | 2.7     | 2.9     | 5               | 110                                   | 120             | 1                 |
| BZX84C3V0A | CEA     | BZX84C3V0CA | CECA    | 2.8                                   | 3.0     | 3.2     | 5               | 120                                   | 50              | 1                 |
| BZX84C3V3A | CFA     | BZX84C3V3CA | CFCA    | 3.1                                   | 3.3     | 3.5     | 5               | 130                                   | 20              | 1                 |
| BZX84C3V6A | CGA     | BZX84C3V6CA | CGCA    | 3.4                                   | 3.6     | 3.8     | 5               | 130                                   | 10              | 1                 |
| BZX84C3V9A | CHA     | BZX84C3V9CA | CHCA    | 3.7                                   | 3.9     | 4.1     | 5               | 130                                   | 5               | 1                 |
| BZX84C4V3A | CJA     | BZX84C4V3CA | CJCA    | 4                                     | 4.3     | 4.6     | 5               | 130                                   | 5               | 1                 |
| BZX84C4V7A | CKA     | BZX84C4V7CA | CKCA    | 4.4                                   | 4.7     | 5       | 5               | 130                                   | 2               | 1                 |
| BZX84C5V1A | CLA     | BZX84C5V1CA | CLCA    | 4.8                                   | 5.1     | 5.4     | 5               | 130                                   | 2               | 1.5               |
| BZX84C5V6A | CMA     | BZX84C5V6CA | CMCA    | 5.2                                   | 5.6     | 6       | 5               | 80                                    | 1               | 2.5               |
| BZX84C6V2A | CNA     | BZX84C6V2CA | CNCA    | 5.8                                   | 6.2     | 6.6     | 5               | 50                                    | 1               | 3                 |
| BZX84C6V8A | CPA     | BZX84C6V8CA | CPCA    | 6.4                                   | 6.8     | 7.2     | 5               | 30                                    | 0.5             | 3.5               |
| BZX84C7V5A | CRA     | BZX84C7V5CA | CRCA    | 7                                     | 7.5     | 7.9     | 5               | 30                                    | 0.5             | 4                 |
| BZX84C8V2A | CSA     | BZX84C8V2CA | CSCA    | 7.7                                   | 8.2     | 8.7     | 5               | 30                                    | 0.5             | 5                 |
| BZX84C9V1A | CTA     | BZX84C9V1CA | CTCA    | 8.5                                   | 9.1     | 9.6     | 5               | 30                                    | 0.5             | 6                 |
| BZX84C10A  | CUA     | BZX84C10CA  | CUCA    | 9.4                                   | 10      | 10.6    | 5               | 30                                    | 0.1             | 7                 |
| BZX84C11A  | CVA     | BZX84C11CA  | CVCA    | 10.4                                  | 11      | 11.6    | 5               | 30                                    | 0.1             | 8                 |
| BZX84C12A  | CWA     | BZX84C12CA  | CWCA    | 11.4                                  | 12      | 12.7    | 5               | 35                                    | 0.1             | 9                 |
| BZX84C13A  | CXA     | BZX84C13CA  | CXCA    | 12.4                                  | 13      | 14.1    | 5               | 35                                    | 0.1             | 10                |
| BZX84C15A  | CYA     | BZX84C15CA  | CYCA    | 13.8                                  | 15      | 15.6    | 5               | 40                                    | 0.1             | 11                |
| BZX84C16A  | CZA     | BZX84C16CA  | CZCA    | 15.3                                  | 16      | 17.1    | 5               | 40                                    | 0.1             | 12                |
| BZX84C18A  | C1A     | BZX84C18CA  | C1CA    | 16.8                                  | 18      | 19.1    | 5               | 45                                    | 0.1             | 13                |
| BZX84C20A  | C2A     | BZX84C20CA  | C2CA    | 18.8                                  | 20      | 21.2    | 5               | 50                                    | 0.1             | 15                |
| BZX84C22A  | C3A     | BZX84C22CA  | C3CA    | 20.8                                  | 22      | 23.3    | 5               | 55                                    | 0.1             | 17                |
| BZX84C24A  | C4A     | BZX84C24CA  | C4CA    | 22.8                                  | 24      | 25.6    | 5               | 60                                    | 0.1             | 19                |
| BZX84C27A  | C5A     | BZX84C27CA  | C5CA    | 25.1                                  | 27      | 28.9    | 5               | 70                                    | 0.1             | 21                |
| BZX84C30A  | C6A     | BZX84C30CA  | C6CA    | 28                                    | 30      | 32      | 5               | 80                                    | 0.1             | 23                |
| BZX84C33A  | C7A     | BZX84C33CA  | C7CA    | 31                                    | 33      | 35      | 5               | 80                                    | 0.1             | 25                |
| BZX84C36A  | C8A     | BZX84C36CA  | C8CA    | 34                                    | 36      | 38      | 5               | 90                                    | 0.1             | 27                |
| BZX84C39A  | C9A     | BZX84C39CA  | C9CA    | 37                                    | 39      | 41      | 2.5             | 100                                   | 2               | 30                |
| BZX84C43A  | 4AA     | BZX84C43CA  | 4ACA    | 40                                    | 43      | 46      | 2.5             | 130                                   | 2               | 33                |
| BZX84C47A  | 4BA     | BZX84C47CA  | 4BCA    | 44                                    | 47      | 50      | 2.5             | 150                                   | 2               | 36                |
| BZX84C51A  | 4CA     | BZX84C51CA  | 4CCA    | 48                                    | 51      | 54      | 2.5             | 180                                   | 1               | 39                |
| BZX84C56A  | 4DA     | BZX84C56CA  | 4DCA    | 52                                    | 56      | 60      | 2.5             | 180                                   | 1               | 43                |
| BZX84C62A  | 4EA     | BZX84C62CA  | 4ECA    | 58                                    | 62      | 66      | 2.5             | 200                                   | 0.2             | 47                |
| BZX84C68A  | 4FA     | BZX84C68CA  | 4FCA    | 64                                    | 68      | 72      | 2.5             | 250                                   | 0.2             | 52                |
| BZX84C75A  | 4HA     | BZX84C75CA  | 4HCA    | 70                                    | 75      | 79      | 2.5             | 300                                   | 0.2             | 57                |

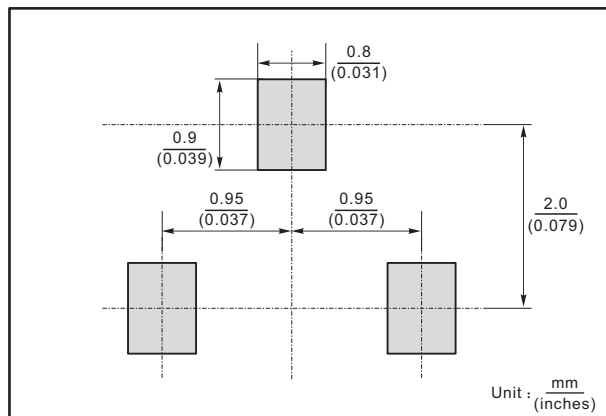
(1) V<sub>ZT</sub> is tested with pulses (20 ms)  
(2) B:±2%  
(3) C:±5%



### SOT-23 Package Outline Dimensions



#### The recommended mounting pad size



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