

## BZX84C...Series

### Silicon Planar Zener Diodes

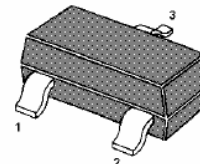
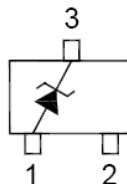
#### FEATURES

Zener breakdown voltage range - 2.0 V to 75 V

Package designed for optimal automated board assembly

Small package size for high density applications

This series of Zener diodes is offered in the convenient, surface mount plastic SOT-23 package. These devices are designed to provide voltage regulation with minimum space requirement. They are well suited for applications such as cellular phones, hand held portables, and high density PC boards.



1. Anode 3. Cathode  
SOT-23 Plastic Package

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

#### Absolute Maximum Ratings (Ta = 25°C)

| PARAMETER                                             | SYMBOL                            | VALUE         | UNIT |
|-------------------------------------------------------|-----------------------------------|---------------|------|
| Power Dissipation                                     | P <sub>D</sub>                    | 350           | mW   |
| Thermal Resistance, Junction to Ambient <sup>1)</sup> | R <sub>θJA</sub>                  | 417           | °C/W |
| Junction and Storage Temperature Range                | T <sub>j</sub> , T <sub>stg</sub> | - 65 to + 150 | °C   |

## RATINGS AND CHARACTERISTIC CURVES BZX84C...Series

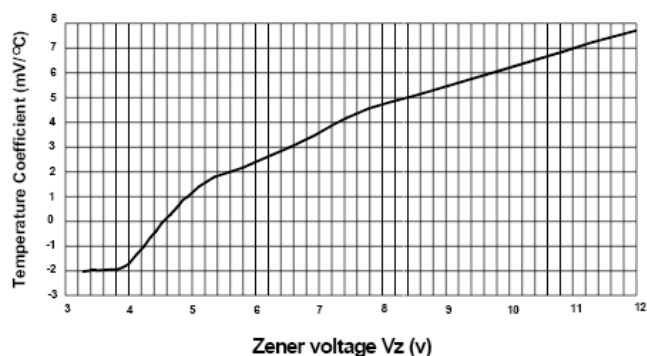
**Electrical Characteristics** (  $T_a = 25^\circ\text{C}$  unless otherwise noted,  $V_F < 0.9\text{ V}$  at  $I_F = 10\text{ mA}$  )

| Type      | Marking Code | Zener Voltage Range <sup>1)</sup> |         |         |             | Dynamic Impedance |             | Reverse Current        |          |
|-----------|--------------|-----------------------------------|---------|---------|-------------|-------------------|-------------|------------------------|----------|
|           |              | $V_{ZT}$                          |         |         | at $I_{ZT}$ | $Z_{ZT}$          | at $I_{ZT}$ | $I_R$                  | at $V_R$ |
|           |              | Nom.(V)                           | Min.(V) | Max.(V) | (mA)        | Max.( $\Omega$ )  | ( mA )      | Max. ( $\mu\text{A}$ ) | (V)      |
| BZX84C2V0 | A8           | 2                                 | 1.8     | 2.15    | 5           | 100               | 5           | 120                    | 0.5      |
| BZX84C2V2 | B8           | 2.2                               | 2.08    | 2.33    | 5           | 100               | 5           | 120                    | 0.7      |
| BZX84C2V4 | C8           | 2.4                               | 2.2     | 2.6     | 5           | 100               | 5           | 50                     | 1        |
| BZX84C2V7 | D8           | 2.7                               | 2.5     | 2.9     | 5           | 100               | 5           | 20                     | 1        |
| BZX84C3V0 | E8           | 3                                 | 2.8     | 3.2     | 5           | 95                | 5           | 10                     | 1        |
| BZX84C3V3 | F8           | 3.3                               | 3.1     | 3.5     | 5           | 95                | 5           | 5                      | 1        |
| BZX84C3V6 | H8           | 3.6                               | 3.4     | 3.8     | 5           | 90                | 5           | 5                      | 1        |
| BZX84C3V9 | J8           | 3.9                               | 3.7     | 4.1     | 5           | 90                | 5           | 3                      | 1        |
| BZX84C4V3 | K8           | 4.3                               | 4       | 4.6     | 5           | 90                | 5           | 3                      | 1        |
| BZX84C4V7 | M8           | 4.7                               | 4.4     | 5       | 5           | 80                | 5           | 3                      | 2        |
| BZX84C5V1 | N8           | 5.1                               | 4.8     | 5.4     | 5           | 60                | 5           | 2                      | 2        |
| BZX84C5V6 | P8           | 5.6                               | 5.2     | 6       | 5           | 40                | 5           | 1                      | 2        |
| BZX84C6V2 | R8           | 6.2                               | 5.8     | 6.6     | 5           | 10                | 5           | 3                      | 4        |
| BZX84C6V8 | X8           | 6.8                               | 6.4     | 7.2     | 5           | 15                | 5           | 2                      | 4        |
| BZX84C7V5 | Y8           | 7.5                               | 7       | 7.9     | 5           | 15                | 5           | 1                      | 5        |
| BZX84C8V2 | Z8           | 8.2                               | 7.7     | 8.7     | 5           | 15                | 5           | 0.7                    | 5        |
| BZX84C9V1 | A9           | 9.1                               | 8.5     | 9.6     | 5           | 15                | 5           | 0.5                    | 6        |
| BZX84C10  | B9           | 10                                | 9.4     | 10.6    | 5           | 20                | 5           | 0.2                    | 7        |
| BZX84C11  | C9           | 11                                | 10.4    | 11.6    | 5           | 20                | 5           | 0.1                    | 8        |
| BZX84C12  | D9           | 12                                | 11.4    | 12.7    | 5           | 25                | 5           | 0.1                    | 8        |
| BZX84C13  | E9           | 13                                | 12.4    | 14.1    | 5           | 30                | 5           | 0.1                    | 8        |
| BZX84C15  | F9           | 15                                | 13.8    | 15.6    | 5           | 30                | 5           | 0.05                   | 10.5     |
| BZX84C16  | H9           | 16                                | 15.3    | 17.1    | 5           | 40                | 5           | 0.05                   | 11.2     |
| BZX84C18  | J9           | 18                                | 16.8    | 19.1    | 5           | 45                | 5           | 0.05                   | 12.6     |
| BZX84C20  | K9           | 20                                | 18.8    | 21.2    | 5           | 55                | 5           | 0.05                   | 14       |
| BZX84C22  | M9           | 22                                | 20.8    | 23.3    | 5           | 55                | 5           | 0.05                   | 15.4     |
| BZX84C24  | N9           | 24                                | 22.8    | 25.6    | 5           | 70                | 5           | 0.05                   | 16.8     |
| BZX84C27  | P9           | 27                                | 25.1    | 28.9    | 2           | 80                | 2           | 0.05                   | 18.9     |
| BZX84C30  | R9           | 30                                | 28      | 32      | 2           | 80                | 2           | 0.05                   | 21       |
| BZX84C33  | X9           | 33                                | 31      | 35      | 2           | 80                | 2           | 0.05                   | 23.1     |
| BZX84C36  | Y9           | 36                                | 34      | 38      | 2           | 90                | 2           | 0.05                   | 25.2     |
| BZX84C39  | Z9           | 39                                | 37      | 41      | 2           | 130               | 2           | 0.05                   | 27.3     |
| BZX84C43  | A0           | 43                                | 40      | 46      | 2           | 150               | 2           | 0.05                   | 30.1     |
| BZX84C47  | B0           | 47                                | 44      | 50      | 2           | 170               | 2           | 0.05                   | 32.9     |
| BZX84C51  | C0           | 51                                | 48      | 54      | 2           | 180               | 2           | 0.05                   | 35.7     |
| BZX84C56  | D0           | 56                                | 52      | 60      | 2           | 200               | 2           | 0.05                   | 39.2     |
| BZX84C62  | E0           | 62                                | 58      | 66      | 2           | 215               | 2           | 0.05                   | 43.4     |
| BZX84C68  | F0           | 68                                | 64      | 72      | 2           | 240               | 2           | 0.05                   | 47.6     |
| BZX84C75  | H0           | 75                                | 70      | 79      | 2           | 255               | 2           | 0.05                   | 52.5     |

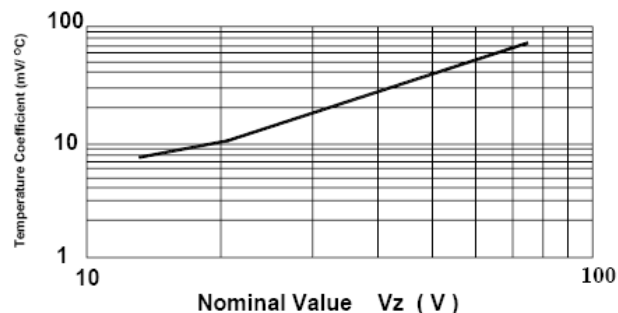
<sup>1)</sup> Tested with pulses  $t_p = 20\text{ ms}$ .

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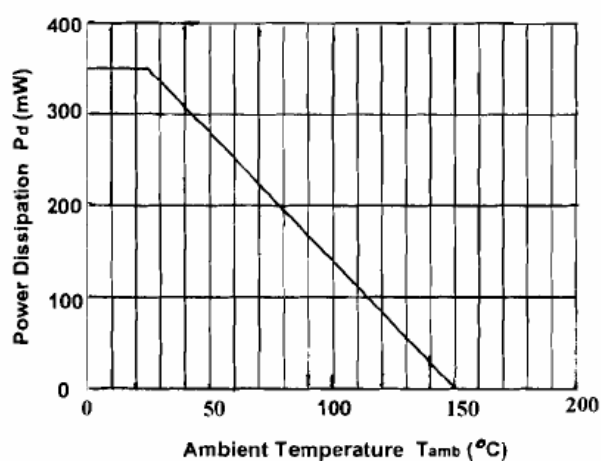
## Temperature Coefficient



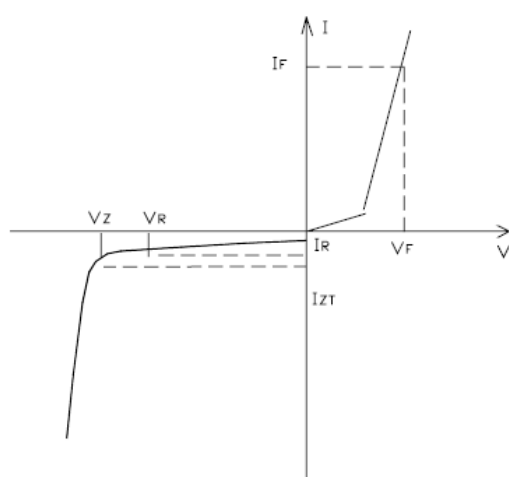
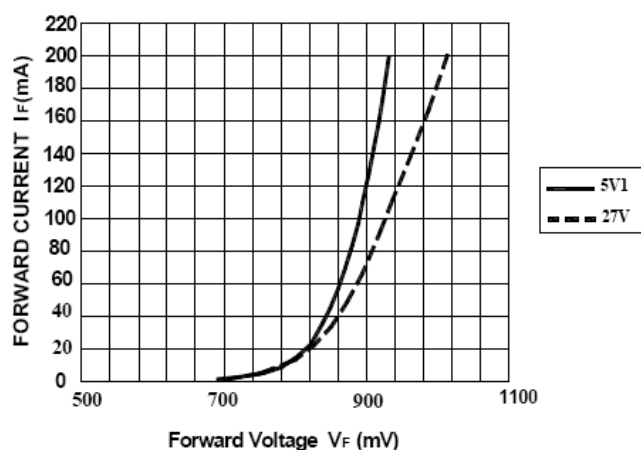
## Temperature Coefficient



## Power Derating Curve



## Typical Forward Voltage



## Zener Voltage Regulator