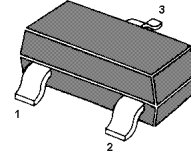
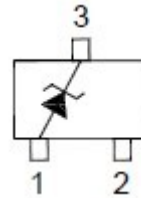


## BZX84C...Series Silicon Planar Zener Diodes

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

### 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

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

| Parameter   | Symbol          | Value         | Unit               |
|---|-----------------|---------------|--------------------|
| Power Dissipation                                     | $P_D$           | 350           | mW                 |
| Thermal Resistance, Junction to Ambient <sup>1)</sup> | $R_{\theta JA}$ | 417           | $^\circ\text{C/W}$ |
| Junction and Storage Temperature Range                | $T_j, T_{stg}$  | - 65 to + 150 | $^\circ\text{C}$   |

<sup>1)</sup> Alumina = 0.4 X 0.3 X 0.024 in, 99.5% alumina



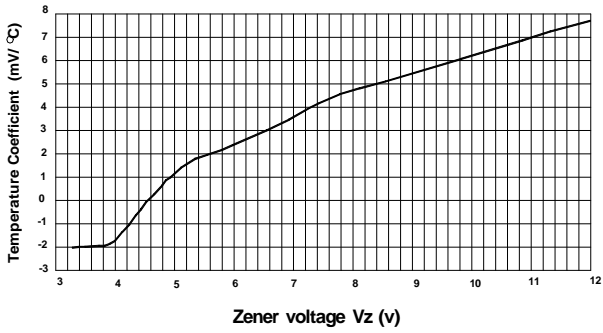
**Electrical Characteristics** (  $T_a = 25\text{ }^\circ\text{C}$  unless otherwise noted,  $V_F < 0.9\text{ V}$  at  $I_F = 10\text{ mA}$ )

| 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     |

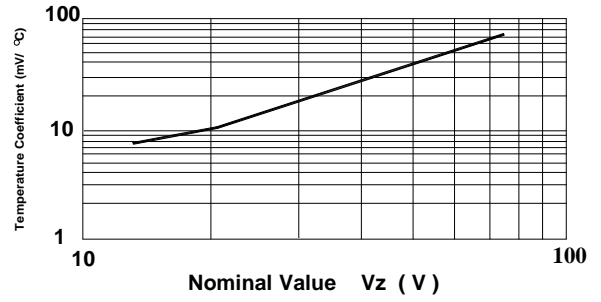
<sup>1)</sup> Tested with pulses  $t_p = 20\text{ ms}$ .



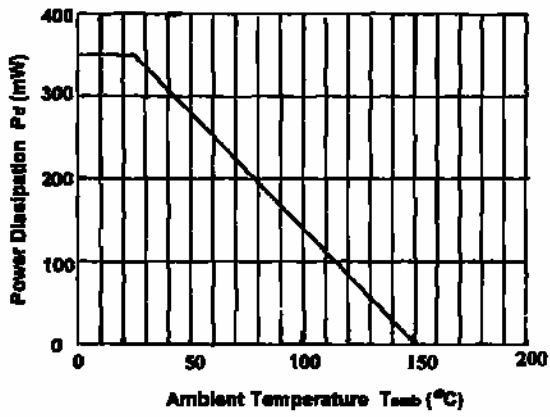
Temperature Coefficient



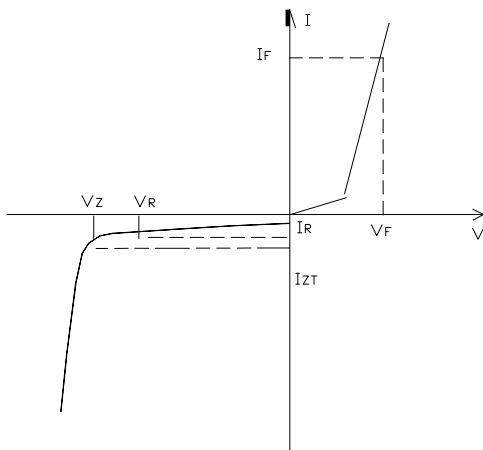
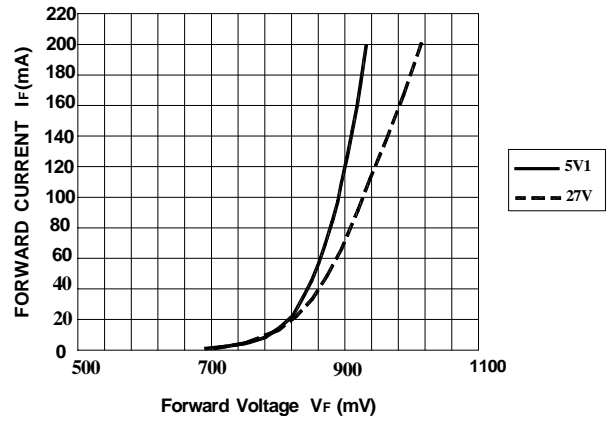
Temperature Coefficient



Power Derating Curve



Typical Forward Voltage



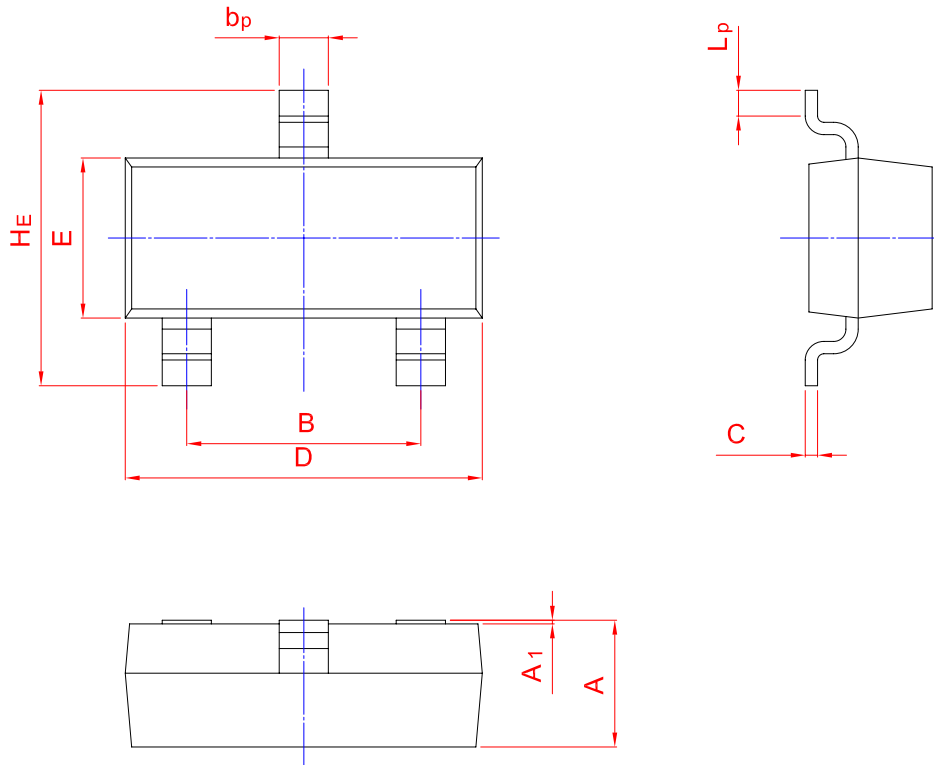
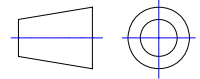
Zener Voltage Regulator



# PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT-23



| UNIT | A    | B    | bp   | C    | D    | E    | Hε   | A1    | Lp   |
|------|------|------|------|------|------|------|------|-------|------|
| mm   | 1.40 | 2.04 | 0.50 | 0.19 | 3.10 | 1.65 | 3.00 | 0.100 | 0.50 |
|      | 0.95 | 1.78 | 0.35 | 0.08 | 2.70 | 1.20 | 2.20 | 0.013 | 0.20 |

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