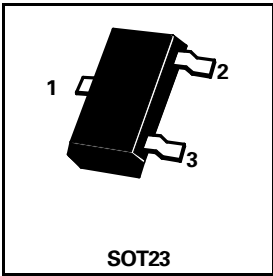
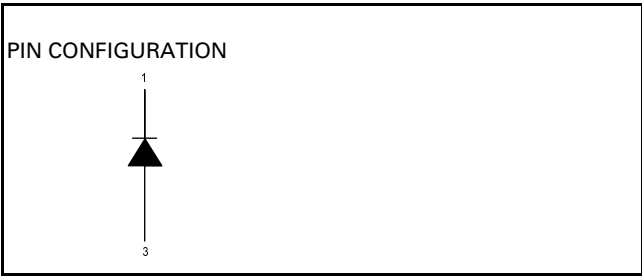


SOT23 SILICON PLANAR  
VOLTAGE REGULATOR DIODES

BZX84  
SERIES  
C2V7 to C47

ISSUE 3 - NOVEMBER 1995



ABSOLUTE MAXIMUM RATINGS (as per Electron Coding Sytem).

| PARAMETER                                  | SYMBOL        | VALUE       | UNIT        |
|--------------------------------------------|---------------|-------------|-------------|
| Voltage Range                              | $V_Z$         | 2.7 to 47   | V           |
| Nominal Tolerance                          | C             | $\pm 5$     | %           |
| Maximum Forward Current                    | $I_F$         | 250         | mA          |
| Power Dissipation at $T_{amb}=25^{\circ}C$ | $P_{tot}$     | 330         | mW          |
| Operating and Storage Temperature Range    | $T_j:T_{stg}$ | -55 to +150 | $^{\circ}C$ |

ELECTRICAL CHARACTERISTICS (at  $T_{amb} = 25^{\circ}C$ ).

| Type   | Zener Voltage<br>$V_Z$ at $I_Z=5mA$<br>V |      |      | Differential<br>Resistance<br>$r_z$ at $I_Z=5mA$<br>$\Omega$ | Temperature<br>Coefficient<br>$S_Z$ at $I_Z=5mA$<br>$mV/^{\circ}C$ |     | Reverse Current<br>$I_R$ at $V_R$<br>$\mu A$ |     |
|--------|------------------------------------------|------|------|--------------------------------------------------------------|--------------------------------------------------------------------|-----|----------------------------------------------|-----|
|        | Nom.                                     | Min. | Max. | Max.                                                         | Min                                                                | Max | Max                                          | Max |
| BZX84: |                                          |      |      |                                                              |                                                                    |     |                                              |     |
| C2V7   | 2.7                                      | 2.5  | 2.9  | 100                                                          | -3.5                                                               | 0   | 20                                           | 1   |
| C3V0   | 3.0                                      | 2.8  | 3.2  | 100                                                          | -3.5                                                               | 0   | 10                                           | 1   |
| C3V3   | 3.3                                      | 3.1  | 3.5  | 100                                                          | -3.5                                                               | 0   | 5                                            | 1   |
| C3V6   | 3.6                                      | 3.4  | 3.8  | 100                                                          | -3.5                                                               | 0   | 5                                            | 1   |
| C3V9   | 3.9                                      | 3.7  | 4.1  | 100                                                          | -3.5                                                               | 0   | 3                                            | 1   |
| C4V3   | 4.3                                      | 4.0  | 4.6  | 90                                                           | -3.5                                                               | 0   | 3                                            | 1   |
| C4V7   | 4.7                                      | 4.4  | 5.0  | 80                                                           | -3.5                                                               | 0.2 | 3                                            | 2   |
| C5V1   | 5.1                                      | 4.8  | 5.4  | 60                                                           | -2.7                                                               | 1.2 | 2                                            | 2   |
| C5V6   | 5.6                                      | 5.2  | 6.0  | 40                                                           | -2.0                                                               | 2.5 | 1                                            | 2   |
| C6V2   | 6.2                                      | 5.8  | 6.6  | 10                                                           | 0.4                                                                | 3.7 | 3                                            | 4   |
| C6V8   | 6.8                                      | 6.4  | 7.2  | 15                                                           | 1.2                                                                | 4.5 | 2                                            | 4   |
| C7V5   | 7.5                                      | 7.0  | 7.9  | 15                                                           | 2.5                                                                | 5.3 | 1                                            | 5   |
| C8V2   | 8.2                                      | 7.7  | 8.7  | 15                                                           | 3.2                                                                | 6.2 | 0.7                                          | 5   |

# BZX84 SERIES C2V7 to C47

## ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^{\circ}\text{C}$ ).

| Type          | Zener Voltage (V)<br>$V_Z$ at $I_Z=1\text{mA}$ | Differential Resistance ( $\Omega$ )<br>$r_z$ at $I_Z=1\text{mA}$ | Partmarking |
|---------------|------------------------------------------------|-------------------------------------------------------------------|-------------|
| <b>BZX84:</b> | Min.                                           | Max.                                                              |             |
| C2V7          | 1.9                                            | 600                                                               | W4          |
| C3V0          | 2.1                                            | 600                                                               | W5          |
| C3V3          | 2.4                                            | 600                                                               | W6          |
| C3V6          | 2.7                                            | 600                                                               | W7          |
| C3V9          | 3.0                                            | 600                                                               | W8          |
| C4V3          | 3.3                                            | 600                                                               | W9          |
| C4V7          | 3.7                                            | 500                                                               | Z1          |
| C5V1          | 4.2                                            | 480                                                               | Z2          |
| C5V6          | 4.8                                            | 400                                                               | Z3          |
| C6V2          | 5.6                                            | 150                                                               | Z4          |
| C6V8          | 6.3                                            | 80                                                                | Z5          |
| C7V5          | 6.9                                            | 80                                                                | Z6          |
| C8V2          | 7.6                                            | 80                                                                | Z7          |
| C9V1          | 8.4                                            | 100                                                               | Z8          |
| C10           | 9.3                                            | 150                                                               | Z9          |
| C11           | 10.2                                           | 150                                                               | Y1          |
| C12           | 11.2                                           | 150                                                               | Y2          |
| C13           | 12.3                                           | 170                                                               | Y3          |
| C13V6         | 12.3                                           | 170                                                               | Y36         |
| C15           | 13.7                                           | 200                                                               | Y4          |
| C16           | 15.2                                           | 200                                                               | Y5          |
| C18           | 16.7                                           | 225                                                               | Y6          |
| C20           | 18.7                                           | 225                                                               | Y7          |
| C22           | 20.7                                           | 250                                                               | Y8          |
| C24           | 22.7                                           | 250                                                               | Y9          |
|               | $V_Z$ at $I_Z=0.5\text{mA}$                    | $r_z$ at $I_Z=0.5\text{mA}$                                       |             |
| C27           | 25.0                                           | 300                                                               | X1          |
| C30           | 27.8                                           | 300                                                               | X2          |
| C33           | 30.8                                           | 325                                                               | X3          |
| C36           | 33.8                                           | 350                                                               | X4          |
| C39           | 36.7                                           | 350                                                               | X5          |
| C43           | 39.7                                           | 375                                                               | X6          |
| C47           | 43.7                                           | 375                                                               | X7          |

# BZX84 SERIES C2V7 to C47

## ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^{\circ}\text{C}$ ).

| Type          | Zener Voltage<br>$V_Z$ at $I_Z=2\text{mA}$<br>VOLTS |      |      | Differential<br>Resistance<br>$r_Z$ at $I_Z=2\text{mA}$<br>$\Omega$ | Temperature<br>Coefficient<br>$S_Z$ at $I_Z=2\text{mA}$<br>$\text{mV}/^{\circ}\text{C}$ |      | Reverse Current<br>$I_R$ at $V_R$<br>$\mu\text{A}$ |     |
|---------------|-----------------------------------------------------|------|------|---------------------------------------------------------------------|-----------------------------------------------------------------------------------------|------|----------------------------------------------------|-----|
|               | Nom.                                                | Min. | Max. |                                                                     | Min                                                                                     | Max  | Max                                                | Max |
| <b>BZX84:</b> |                                                     |      |      |                                                                     |                                                                                         |      |                                                    |     |
| C10           | 10                                                  | 9.4  | 10.6 | 20                                                                  | 4.5                                                                                     | 8.0  | 0.2                                                | 7   |
| C11           | 11                                                  | 10.4 | 11.6 | 20                                                                  | 5.4                                                                                     | 9.0  | 0.1                                                | 8   |
| C12           | 12                                                  | 11.4 | 12.7 | 25                                                                  | 6.0                                                                                     | 10.0 | 0.1                                                | 8   |
| C13           | 13                                                  | 12.4 | 14.1 | 30                                                                  | 7.0                                                                                     | 11.0 | 0.1                                                | 9   |
| C13V6         | 13.6                                                | 12.9 | 14.3 | 30                                                                  | 7.0                                                                                     | 11.0 | 0.1                                                | 9   |
| C15           | 15                                                  | 13.8 | 15.6 | 30                                                                  | 9.2                                                                                     | 13.0 | 0.05                                               | 10  |
| C16           | 16                                                  | 15.3 | 17.1 | 40                                                                  | 10.4                                                                                    | 14.0 | 0.05                                               | 11  |
| C18           | 18                                                  | 16.8 | 19.1 | 45                                                                  | 12.4                                                                                    | 16.0 | 0.05                                               | 13  |
| C20           | 20                                                  | 18.8 | 21.2 | 55                                                                  | 14.4                                                                                    | 18.0 | 0.05                                               | 14  |
| C22           | 22                                                  | 20.8 | 23.3 | 55                                                                  | 16.4                                                                                    | 20.0 | 0.05                                               | 15  |
| C24           | 24                                                  | 22.8 | 25.6 | 70                                                                  | 18.4                                                                                    | 22.0 | 0.05                                               | 17  |
| C27           | 27                                                  | 25.1 | 28.9 | 80                                                                  | 21.4                                                                                    | 25.3 | 0.05                                               | 19  |
| C30           | 30                                                  | 28.0 | 32.0 | 80                                                                  | 24.4                                                                                    | 29.4 | 0.05                                               | 21  |
| C33           | 33                                                  | 31.0 | 35.0 | 80                                                                  | 27.4                                                                                    | 33.4 | 0.05                                               | 23  |
| C36           | 36                                                  | 34.0 | 38.0 | 90                                                                  | 30.4                                                                                    | 37.4 | 0.05                                               | 25  |
| C39           | 39                                                  | 37.0 | 41.0 | 130                                                                 | 33.4                                                                                    | 41.2 | 0.05                                               | 27  |
| C43           | 43                                                  | 40.0 | 46.0 | 150                                                                 | 37.6                                                                                    | 46.6 | 0.05                                               | 30  |
| C47           | 47                                                  | 44.0 | 50.0 | 170                                                                 | 42.0                                                                                    | 51.8 | 0.05                                               | 33  |