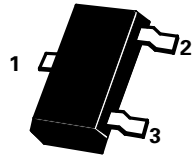


# SOT23 SILICON PLANAR VOLTAGE REGULATOR DIODES

**BZX84  
SERIES  
C2V7 to C47**

ISSUE 3 - NOVEMBER 1995 ♻

PIN CONFIGURATION



SOT23

## ABSOLUTE MAXIMUM RATINGS (as per Electron Coding System).

| 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 $T_{amb}=25^\circ\text{C}$ | $P_{tot}$     | 330         | mW               |
| Operating and Storage Temperature Range         | $T_j:T_{stg}$ | -55 to +150 | $^\circ\text{C}$ |

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

| Type          | Zener Voltage<br>$V_Z$ at $I_Z=5\text{mA}$<br>V |      |      | Differential<br>Resistance<br>$r_z$ at $I_Z=5\text{mA}$<br>$\Omega$ | Temperature<br>Coefficient<br>$S_Z$ at $I_Z=5\text{mA}$<br>$\text{mV}/^\circ\text{C}$ |     | Reverse Current<br>$I_R$ at $V_R$<br>$\mu\text{A}$ |     |
|---------------|---|------|------|---|---|-----|--|-----|
|               | Nom.  | Min. | Max. |   | Max.  | Min | Max  | Max |
| <b>BZX84:</b> |   |      |      |   |   |     |  |     |
| 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>$\mu\text{A}$ $\text{V}$ |     |     |
|---------------|---|------|------|---|---|------|---|-----|-----|
|               | Nom.  | Min. | Max. |   | 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  |     |