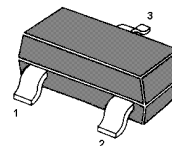


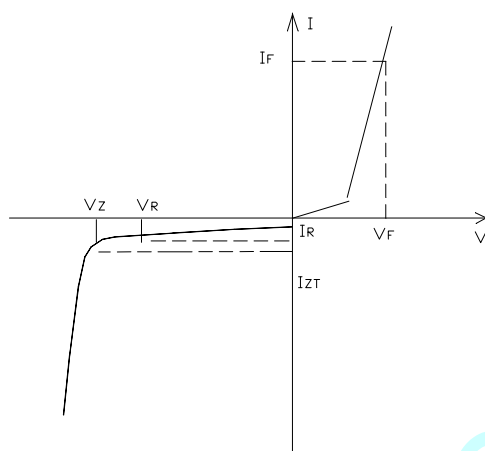
BZX84C...CA Series SILICON PLANAR ZENER DIODES

Features

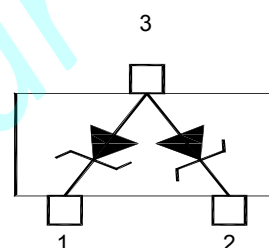
- Zener breakdown voltage range - 2.4 V to 75 V
- Package designed for optimal automated board assembly
- Small package size for high density applications



1. Cathode 2. Cathode 3. Anode
SOT-23 Plastic Package



Zener Voltage Regulator



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

| Parameter | Symbol | Value | Unit |
|---|-----------------|---------------|--------------------|
| Power Dissipation | P_D | 300 | mW |
| Thermal Resistance, Junction to Ambient ¹⁾ | $R_{\theta JA}$ | 417 | $^\circ\text{C/W}$ |
| Junction and Storage Temperature Range | T_j, T_s | - 65 to + 150 | $^\circ\text{C}$ |

¹⁾ Alumina = 0.4 X 0.3 X 0.024 in, 99.5% alumina

Characteristics at $T_a = 25\text{ }^\circ\text{C}$

| Parameter | Symbol | Max. | Unit |
|--|--------|------|------|
| Forward Voltage at $I_F = 10\text{ mA}$ | V_F | 0.9 | V |

Electrical Characteristics ($T_a = 25\text{ }^\circ\text{C}$ unless otherwise noted)

| Type | Marking Code | Zener Voltage Range ¹⁾ | | | | Dynamic Resistance | | | | Reverse Leakage Current | |
|-------------|--------------|-----------------------------------|----------|----------|-------------|--------------------|-------------|-------------------|-------------|-------------------------|----------|
| | | V_Z | | | at I_{ZT} | Z_{ZT} | at I_{ZT} | Z_{ZK} | at I_{ZK} | I_R | at V_R |
| | | Nom. (V) | Min. (V) | Max. (V) | mA | Max. (Ω) | mA | Max. (Ω) | mA | Max. (μA) | V |
| BZX84C2V4CA | 7H | 2.4 | 2.2 | 2.6 | 5 | 100 | 5 | 600 | 1 | 50 | 1 |
| BZX84C2V7CA | 7J | 2.7 | 2.5 | 2.9 | 5 | 100 | 5 | 600 | 1 | 20 | 1 |
| BZX84C3V0CA | MR | 3.0 | 2.8 | 3.2 | 5 | 95 | 5 | 600 | 1 | 10 | 1 |
| BZX84C3V3CA | MX | 3.3 | 3.1 | 3.5 | 5 | 95 | 5 | 600 | 1 | 5 | 1 |
| BZX84C3V6CA | MY | 3.6 | 3.4 | 3.8 | 5 | 90 | 5 | 600 | 1 | 5 | 1 |
| BZX84C3V9CA | MZ | 3.9 | 3.7 | 4.1 | 5 | 90 | 5 | 600 | 1 | 3 | 1 |
| BZX84C4V3CA | NA | 4.3 | 4 | 4.6 | 5 | 90 | 5 | 600 | 1 | 3 | 1 |
| BZX84C4V7CA | NB | 4.7 | 4.4 | 5 | 5 | 80 | 5 | 500 | 1 | 3 | 2 |
| BZX84C5V1CA | NC | 5.1 | 4.8 | 5.4 | 5 | 60 | 5 | 480 | 1 | 2 | 2 |
| BZX84C5V6CA | ND | 5.6 | 5.2 | 6 | 5 | 40 | 5 | 400 | 1 | 1 | 2 |
| BZX84C6V2CA | NE | 6.2 | 5.8 | 6.6 | 5 | 10 | 5 | 150 | 1 | 3 | 4 |
| BZX84C6V8CA | NF | 6.8 | 6.4 | 7.2 | 5 | 15 | 5 | 80 | 1 | 2 | 4 |
| BZX84C7V5CA | NH | 7.5 | 7 | 7.9 | 5 | 15 | 5 | 80 | 1 | 1 | 5 |
| BZX84C8V2CA | NJ | 8.2 | 7.7 | 8.7 | 5 | 15 | 5 | 80 | 1 | 0.7 | 5 |
| BZX84C9V1CA | NK | 9.1 | 8.5 | 9.6 | 5 | 15 | 5 | 100 | 1 | 0.5 | 6 |
| BZX84C10CA | NM | 10 | 9.4 | 10.6 | 5 | 20 | 5 | 150 | 1 | 0.2 | 7 |
| BZX84C11CA | NN | 11 | 10.4 | 11.6 | 5 | 20 | 5 | 150 | 1 | 0.1 | 8 |
| BZX84C12CA | NP | 12 | 11.4 | 12.7 | 5 | 25 | 5 | 150 | 1 | 0.1 | 8 |
| BZX84C13CA | NX | 13 | 12.4 | 14.1 | 5 | 30 | 5 | 170 | 1 | 0.1 | 8 |
| BZX84C15CA | NY | 15 | 14.3 | 15.8 | 5 | 30 | 5 | 200 | 1 | 0.05 | 10.5 |
| BZX84C16CA | NZ | 16 | 15.3 | 17.1 | 5 | 40 | 5 | 200 | 1 | 0.05 | 11.2 |
| BZX84C18CA | PA | 18 | 16.8 | 19.1 | 5 | 45 | 5 | 225 | 1 | 0.05 | 12.6 |
| BZX84C20CA | PB | 20 | 18.8 | 21.2 | 5 | 55 | 5 | 225 | 1 | 0.05 | 14 |
| BZX84C22CA | PC | 22 | 20.8 | 23.3 | 5 | 55 | 5 | 250 | 1 | 0.05 | 15.4 |
| BZX84C24CA | PD | 24 | 22.8 | 25.6 | 5 | 70 | 5 | 250 | 1 | 0.05 | 16.8 |
| BZX84C27CA | PE | 27 | 25.1 | 28.9 | 2 | 80 | 2 | 300 | 0.5 | 0.05 | 18.9 |
| BZX84C30CA | PF | 30 | 28 | 32 | 2 | 80 | 2 | 325 | 0.5 | 0.05 | 21 |
| BZX84C33CA | PH | 33 | 31 | 35 | 2 | 80 | 2 | 350 | 0.5 | 0.05 | 23.1 |
| BZX84C36CA | PJ | 36 | 34 | 38 | 2 | 90 | 2 | 350 | 0.5 | 0.05 | 25.2 |
| BZX84C39CA | PM | 39 | 37 | 41 | 2 | 130 | 2 | 375 | 0.5 | 0.05 | 27.3 |
| BZX84C43CA | PN | 43 | 40 | 46 | 2 | 150 | 2 | 375 | 0.5 | 0.05 | 30.1 |
| BZX84C47CA | PP | 47 | 44 | 50 | 2 | 170 | 2 | 375 | 0.5 | 0.05 | 32.9 |
| BZX84C51CA | 7K | 51 | 48 | 54 | 2 | 180 | 2 | 400 | 0.5 | 0.05 | 35.7 |
| BZX84C56CA | 7M | 56 | 52 | 60 | 2 | 200 | 2 | 425 | 0.5 | 0.05 | 39.2 |
| BZX84C62CA | 7N | 62 | 58 | 66 | 2 | 215 | 2 | 450 | 0.5 | 0.05 | 43.4 |
| BZX84C68CA | 7P | 68 | 64 | 72 | 2 | 240 | 2 | 475 | 0.5 | 0.05 | 47.6 |
| BZX84C75CA | 7R | 75 | 70 | 79 | 2 | 255 | 2 | 500 | 0.5 | 0.05 | 52.5 |

¹⁾ Tested with pulses $t_p = 20\text{ ms}$.

Typical Characteristics

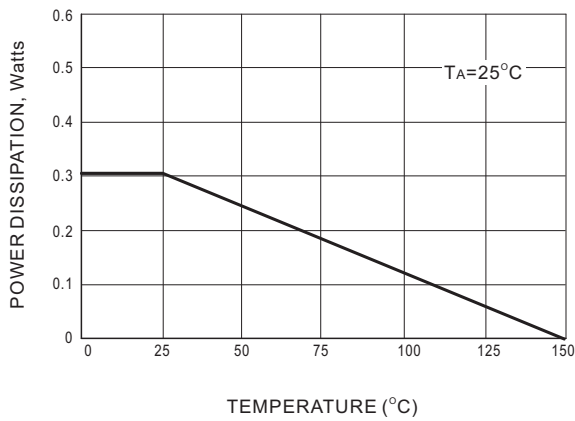


Fig.1 STEADY STATE POWER DERATING

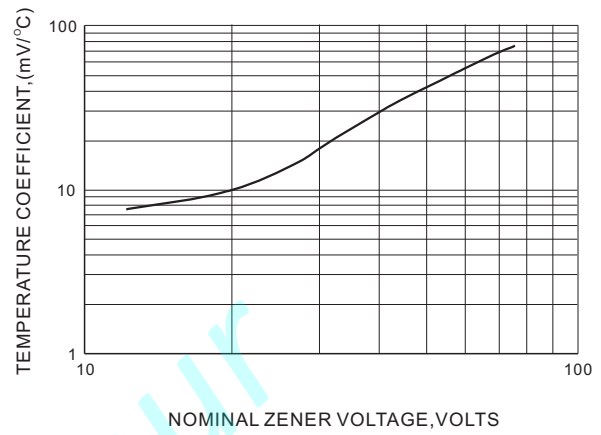


Fig.2 TEMPERATURE COEFFICIENTS

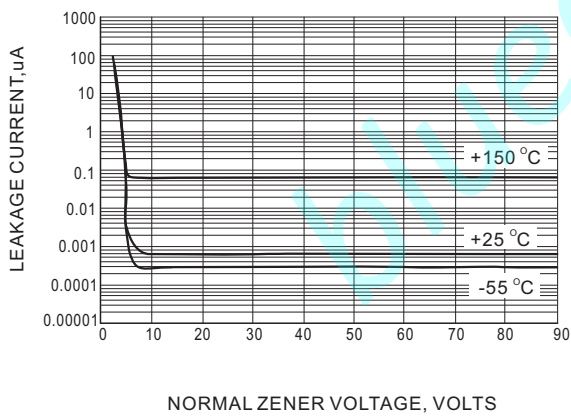


Fig.3 TYPICAL LEAKAGE CURRENT

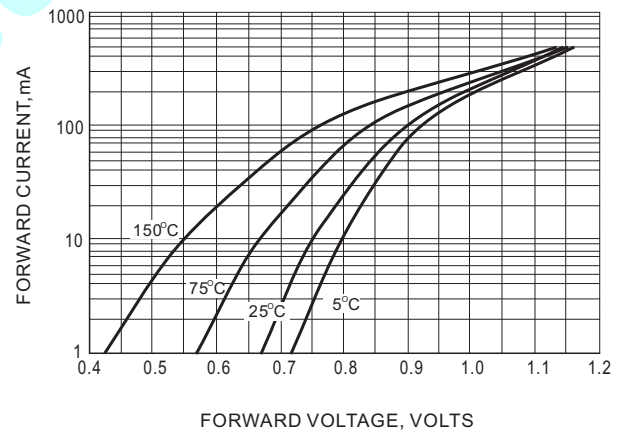
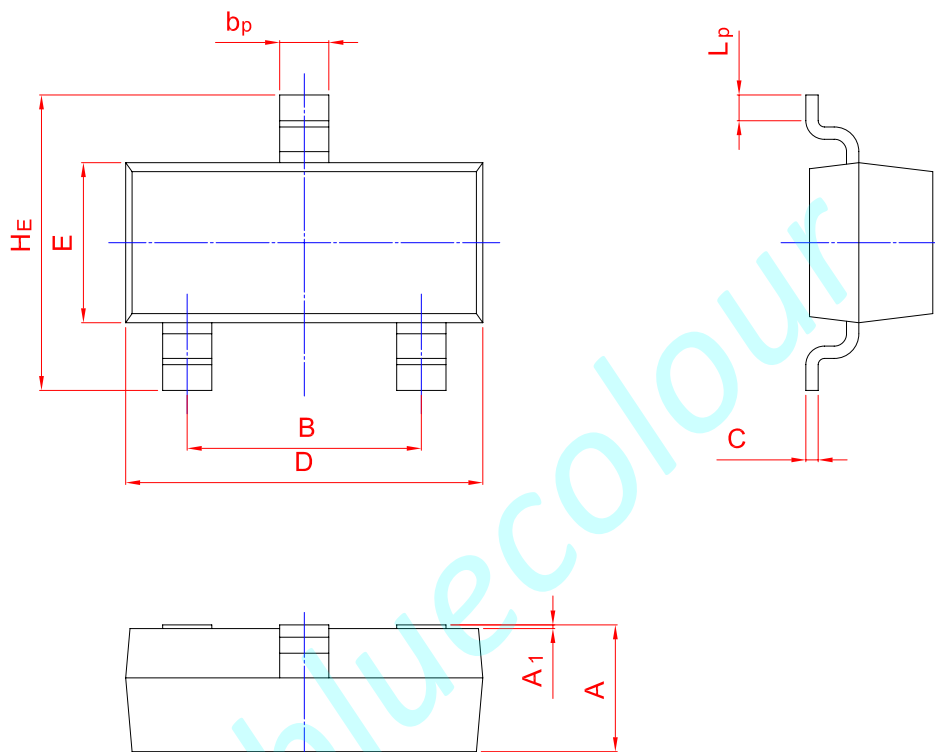
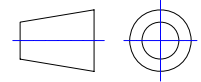


Fig.4 TYPICAL FORWARD VOLTAGE

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT-23



| UNIT | A | B | bp | C | D | E | HE | 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 |