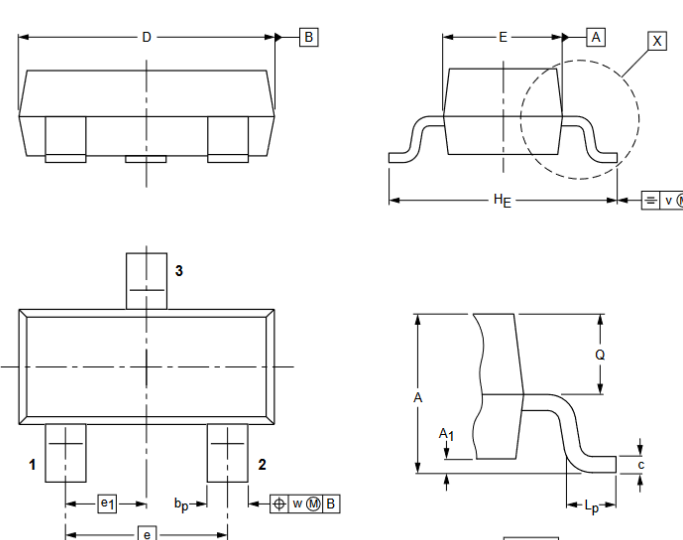


Silicon SMD Voltage Regulator Zener Diodes

| Primary characteristics | | |
|---------------------------|-----------|------|
| Parameter | Value | Unit |
| V _Z range nom. | 2.4 to 43 | V |
| Power rating | 300 | mW |

Features

- SOT-23 (TO-236AB) case for easy automatic insertion.
- Pb-Free and RoHS Compliant

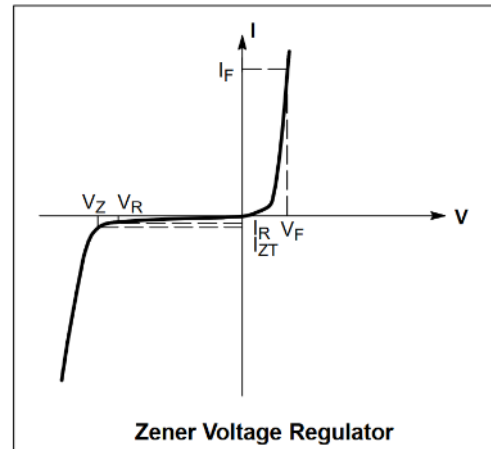
| Case dimensions | | | | | | | | | | | | | |
|---|-------------|--------------------|----------------|---------------|-------------|-------------|-----|----------------|----------------|----------------|--------------|-----|-----|
|  <p style="text-align: center;">1 – Anode; 2 – NC; 3 – Cathode</p> | | | | | | | | | | | | | |
| SOT-23 (TO-236AB) | | | | | | | | | | | | | |
| Unit | A | A ₁ max | b _p | c | D | E | e | e ₁ | H _ε | L _p | Q | v | w |
| mm | 1.0 ±0.1 | 0.1 | 0.43 ±0.05 | 0.12 ±0.03 | 2.9 ±0.1 | 1.3 ±0.1 | 1.9 | 0.95 | 2.3 ±0.2 | 0.3 ±0.15 | 0.5 ±0.05 | 0.2 | 0.1 |

| Part numbering system | |
|----------------------------|--|
| BZX84C ↓ Series code | 8V2 ↓ Reverse Zener Voltage (see: Characteristics table) |

| Absolute maximum ratings (T _a = 25°C) | | | |
|--|------------------|------------|------|
| Parameter | Symbol | Value | Unit |
| Forward Voltage @I _F =10mA | V _F | 0.9 | V |
| Power Dissipation ¹⁾ | P _D | 300 | mW |
| Junction Temperature | T _j | 150 | °C |
| Storage Temperature Range | T _s | -65 to 155 | °C |
| Thermal Resistance Junction to Ambient Air ¹⁾ | R _{thA} | 417 | °C/W |

¹⁾Device mounted on FR-4 PCB with recommended pad layout

| Parameters list | |
|-----------------|----------------------------------|
| Symbol | Parameter |
| V_Z | Reverse Zener Voltage @ I_{ZT} |
| I_{ZT} | Reverse Current |
| I_R | Reverse Leakage Current @ V_R |
| V_R | Reverse Voltage |
| I_F | Forward Current |
| V_F | Forward Voltage @ I_F |



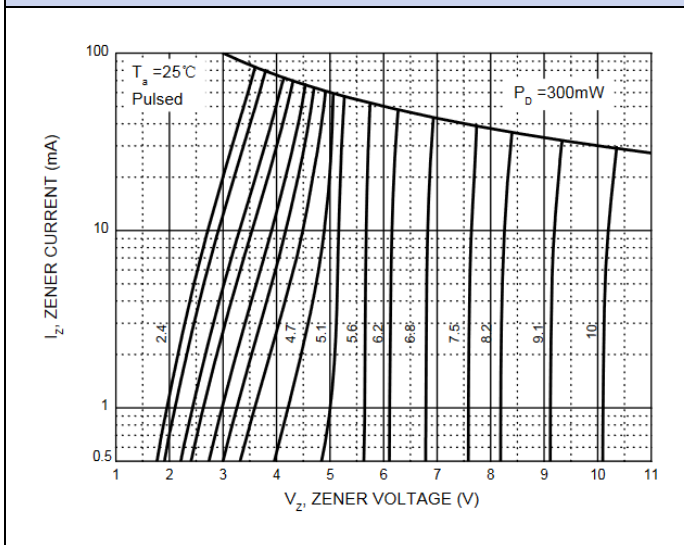
Characteristics table ($T_a = 25^\circ\text{C}$)

| Type | Code | Zener Voltage Range ¹⁾ | | | Dynamic Resistance | | | Reverse Leakage Current | | Temperature coefficient of Zener Voltage @ $I_{ZT}=5\text{mA}$ |
|-----------|------|-----------------------------------|----------------|---------------|----------------------|----------------------|----------------|---|---------------------|--|
| | | V_Z nom. V | I_{ZT} mA | V_{ZT} V | r_{ZT} Ω | r_{ZK} Ω | I_{ZK} mA | $T_a = 25^\circ\text{C}$ μA | I_R at V_R V | TKvz mV/ $^\circ\text{C}$ |
| BZX84C2V4 | Z11 | 2.4 | 5.0 | 2.2 ~ 2.6 | <100 | <600 | 1.0 | <50 | 1.0 | -3.5 ~ 0 |
| BZX84C2V7 | Z12 | 2.7 | 5.0 | 2.5 ~ 2.9 | <100 | <600 | 1.0 | <20 | 1.0 | -3.5 ~ 0 |
| BZX84C3V0 | Z13 | 3.0 | 5.0 | 2.8 ~ 3.2 | <95 | <600 | 1.0 | <10 | 1.0 | -3.5 ~ 0 |
| BZX84C3V3 | Z14 | 3.3 | 5.0 | 3.1 ~ 3.5 | <95 | <600 | 1.0 | <5.0 | 1.0 | -3.5 ~ 0 |
| BZX84C3V6 | Z15 | 3.6 | 5.0 | 3.4 ~ 3.8 | <90 | <600 | 1.0 | <5.0 | 1.0 | -3.5 ~ 0 |
| BZX84C3V9 | Z16 | 3.9 | 5.0 | 3.7 ~ 4.1 | <90 | <600 | 1.0 | <3.0 | 1.0 | -3.5 ~ 0 |
| BZX84C4V3 | Z17 | 4.3 | 5.0 | 4.0 ~ 4.6 | <90 | <600 | 1.0 | <3.0 | 1.0 | -3.5 ~ 0 |
| BZX84C4V7 | Z1 | 4.7 | 5.0 | 4.4 ~ 5.0 | <80 | <500 | 1.0 | <3.0 | 2.0 | -3.5 ~ 0.2 |
| BZX84C5V1 | Z2 | 5.1 | 5.0 | 4.8 ~ 5.4 | <60 | <480 | 1.0 | <2.0 | 2.0 | -2.7 ~ 1.2 |
| BZX84C5V6 | Z3 | 5.6 | 5.0 | 5.2 ~ 6.0 | <40 | <400 | 1.0 | <1.0 | 2.0 | -2.0 ~ 2.5 |
| BZX84C6V2 | Z4 | 6.2 | 5.0 | 5.8 ~ 6.6 | <10 | <150 | 1.0 | <3.0 | 4.0 | 0.4 ~ 3.7 |
| BZX84C6V8 | Z5 | 6.8 | 5.0 | 6.4 ~ 7.2 | <15 | <80 | 1.0 | <2.0 | 4.0 | 1.2 ~ 4.5 |
| BZX84C7V5 | Z6 | 7.5 | 5.0 | 7.0 ~ 7.9 | <15 | <80 | 1.0 | <1.0 | 5.0 | 2.5 ~ 5.3 |
| BZX84C8V2 | Z7 | 8.2 | 5.0 | 7.7 ~ 8.7 | <15 | <80 | 1.0 | <0.7 | 5.0 | 3.2 ~ 6.2 |
| BZX84C9V1 | Z8 | 9.1 | 5.0 | 8.5 ~ 9.6 | <15 | <100 | 1.0 | <0.5 | 6.0 | 3.8 ~ 7.0 |
| BZX84C10 | Z9 | 10 | 5.0 | 9.4 ~ 10.6 | <20 | <150 | 1.0 | <0.2 | 7.0 | 4.5 ~ 8.0 |
| BZX84C11 | Y1 | 11 | 5.0 | 10.4 ~ 11.6 | <20 | <150 | 1.0 | <0.1 | 8.0 | 5.4 ~ 9.0 |
| BZX84C12 | Y2 | 12 | 5.0 | 11.4 ~ 12.7 | <25 | <150 | 1.0 | <0.1 | 8.0 | 6.0 ~ 10.0 |
| BZX84C13 | Y3 | 13 | 5.0 | 12.4 ~ 14.1 | <30 | <170 | 1.0 | <0.1 | 8.0 | 7.0 ~ 11.0 |
| BZX84C15 | Y4 | 15 | 5.0 | 13.8 ~ 15.6 | <30 | <200 | 1.0 | <0.1 | 10.5 | 9.2 ~ 13.0 |
| BZX84C16 | Y5 | 16 | 5.0 | 15.3 ~ 17.1 | <40 | <200 | 1.0 | <0.1 | 11.2 | 10.4 ~ 14.0 |
| BZX84C18 | Y6 | 18 | 5.0 | 16.8 ~ 19.1 | <45 | <225 | 1.0 | <0.1 | 12.6 | 12.4 ~ 16.0 |
| BZX84C20 | Y7 | 20 | 5.0 | 18.8 ~ 21.2 | <55 | <225 | 1.0 | <0.1 | 14.0 | 14.4 ~ 18.0 |

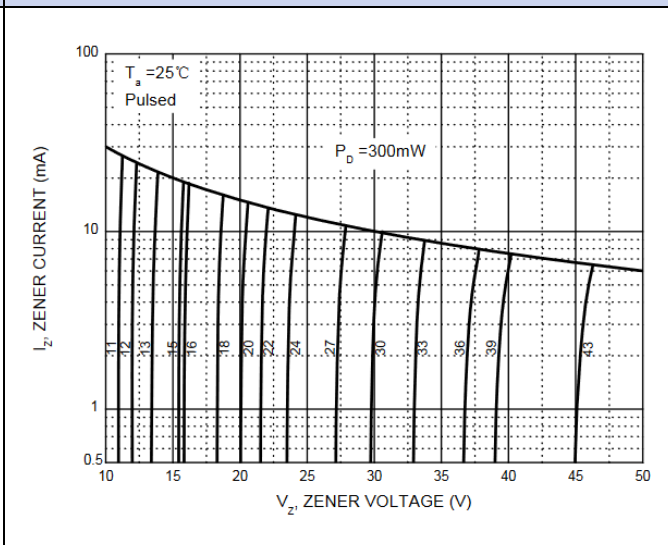
Characteristics table ($T_a = 25^\circ\text{C}$)

| Type | Code | Zener Voltage Range ¹⁾ | | | Dynamic Resistance | | | Reverse Leakage Current | | Temperature coefficient of Zener Voltage @ $I_{ZT}=5\text{mA}$ |
|----------|------|-----------------------------------|----------------|---------------|----------------------|----------------------|----------------|---|---------------------|--|
| | | V_Z nom. V | I_{ZT} mA | V_{ZT} V | r_{ZT} Ω | r_{ZK} Ω | I_{ZK} mA | $T_a = 25^\circ\text{C}$ μA | I_R at V_R V | TKvz mV/ $^\circ\text{C}$ |
| BZX84C22 | Y8 | 22 | 5.0 | 20.8 ~ 23.3 | <55 | <250 | 1.0 | <0.1 | 15.4 | 16.4 ~ 20.0 |
| BZX84C24 | Y9 | 24 | 5.0 | 22.8 ~ 25.6 | <70 | <250 | 1.0 | <0.1 | 16.8 | 18.4 ~ 22.0 |
| BZX84C27 | Y10 | 27 | 2.0 | 25.1 ~ 28.9 | <80 | <300 | 0.5 | <0.1 | 18.9 | 21.4 ~ 25.3 |
| BZX84C30 | Y11 | 30 | 2.0 | 28.0 ~ 32.0 | <80 | <300 | 0.5 | <0.1 | 21.0 | 24.4 ~ 29.4 |
| BZX84C33 | Y12 | 33 | 2.0 | 31.0 ~ 35.0 | <80 | <325 | 0.5 | <0.1 | 23.1 | 27.4 ~ 33.4 |
| BZX84C36 | Y13 | 36 | 2.0 | 34.0 ~ 38.0 | <90 | <350 | 0.5 | <0.1 | 25.2 | 30.4 ~ 37.4 |
| BZX84C39 | Y14 | 39 | 2.0 | 37.0 ~ 41.0 | <130 | <350 | 0.5 | <0.1 | 27.3 | 33.4 ~ 41.2 |
| BZX84C43 | Y15 | 43 | 2.0 | 40.0 ~ 46.0 | <100 | <700 | 1.0 | <0.1 | 32.0 | 10 ~ 12 |

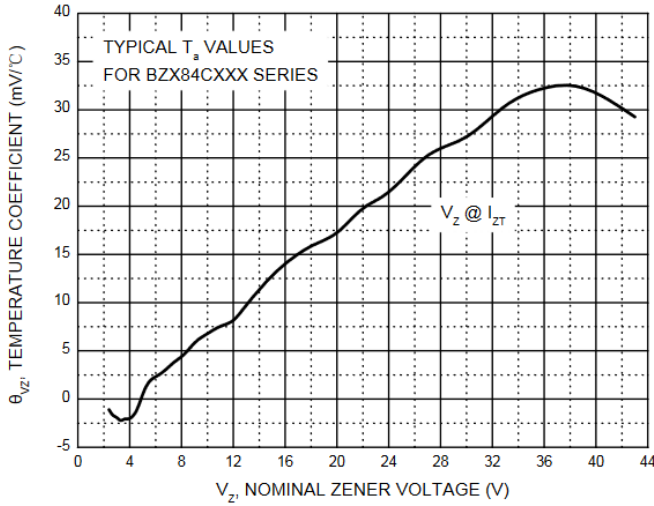
Zener characteristics (V_Z up to 10V)



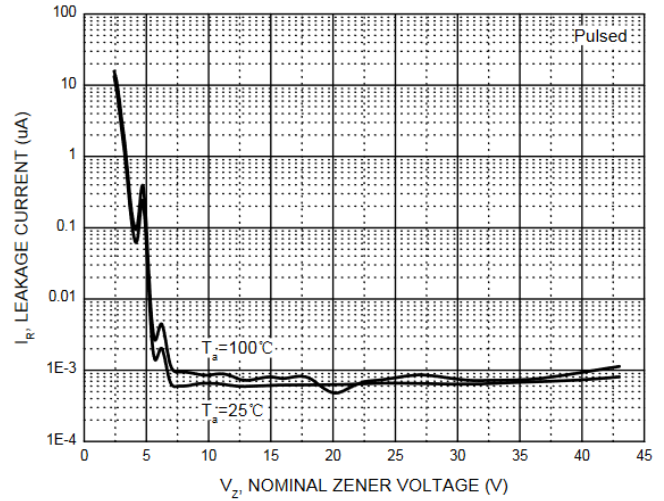
Zener characteristics (11V to 43V)



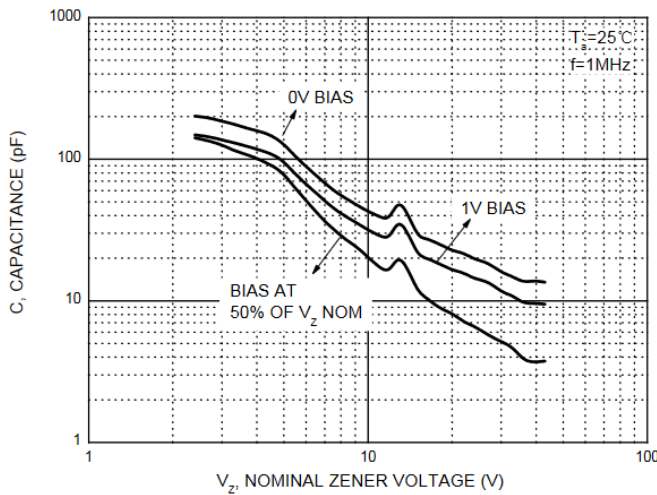
Temperature coefficients



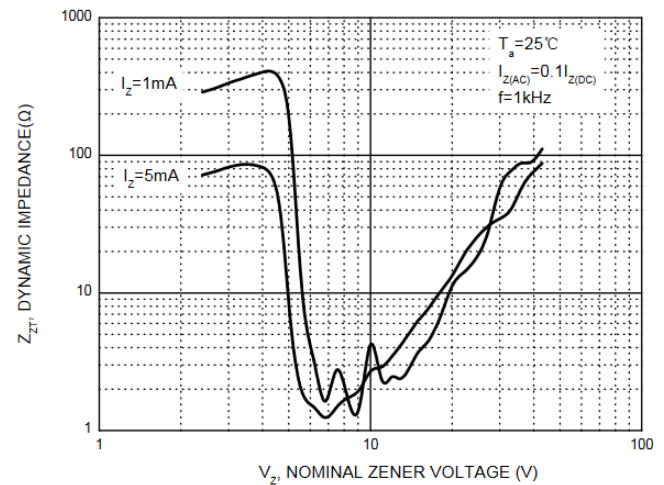
Typical leakage current



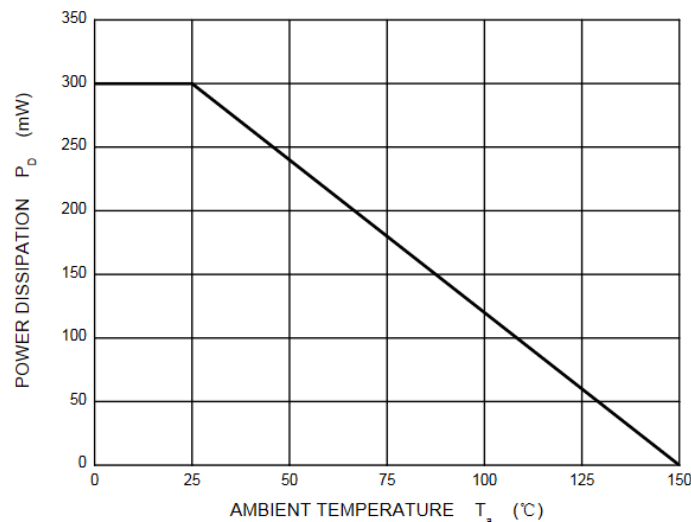
Typical capacitance

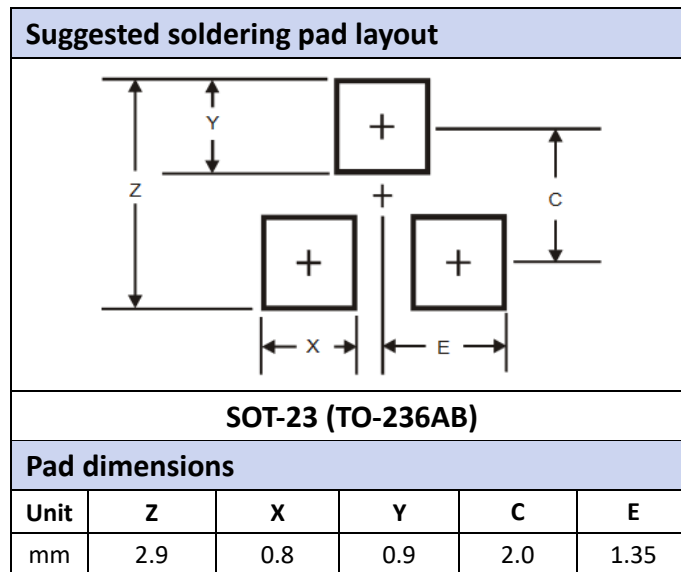


Effect of Zener Voltage on Zener Impedance



Power derating curve





| Ordering information | | | |
|----------------------|-------------------|-------------------|------------|
| Part Number | Package | Shipping Quantity | Dimensions |
| BZX84C2V4 ~ BZX84C43 | SOT-23 (TO-236AB) | 3000 pcs / reel | --- |

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