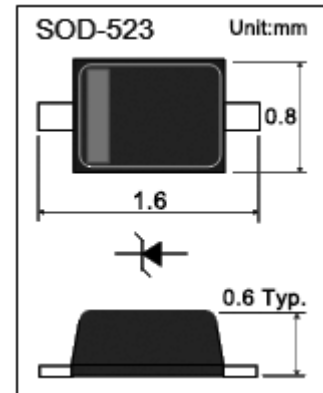


Zener Diodes / DATA SHEET

BZX584C Series

- ◇ Constant Voltage control
 - ◇ Wide Voltage Range Selection 2.4V to 75V
 - ◇ **SOD523 Thin** SMD package
 - ◇ RoHS compliant / Green EMC
 - ◇ Matte Tin (Sn) Lead finish
 - ◇ Cathode Band / Device marking
- Refer to table list



Maximum Ratings (Ta = 25 °C)

| Symbol | Parameter | Value | Units |
|-----------|---------------------------|-------------|-------|
| P_D | Power Dissipation | 200 | mW |
| T_J | Junction Temperature | 150 | °C |
| T_{STG} | Storage Temperature | -55 to +150 | °C |
| I_{ZM} | Maximum Regulator Current | P_D/V_Z | mA |

Electrical Characteristics (Ta = 25 °C)

| Type Number | Device Marking | V_Z (V) *1 | | | I_{ZT} mA | $Z_{ZT}@I_{ZT}$ Ω | $Z_{ZK}@I_{ZK}$ Ω | I_{ZK} (mA) | I_R (μ A) | V_R (V) |
|-------------|----------------|--------------|--------|--------|----------------|-----------------------------|-----------------------------|------------------|---------------------|--------------|
| | | Nom(V) | Min(V) | Max(V) | | | | | | |
| BZX584C2V4 | Z11 | 2.4 | 2.20 | 2.60 | 5 | 100 | 600 | 1.0 | 50 | 1.0 |
| BZX584C2V7 | Z12 | 2.7 | 2.5 | 2.9 | 5 | 100 | 600 | 1.0 | 20 | 1.0 |
| BZX584C3V0 | Z13 | 3.0 | 2.8 | 3.2 | 5 | 95 | 600 | 1.0 | 10 | 1.0 |
| BZX584C3V3 | Z14 | 3.3 | 3.1 | 3.5 | 5 | 95 | 600 | 1.0 | 5 | 1.0 |
| BZX584C3V6 | Z15 | 3.6 | 3.4 | 3.8 | 5 | 90 | 600 | 1.0 | 5 | 1.0 |
| BZX584C3V9 | Z16 | 3.9 | 3.7 | 4.1 | 5 | 90 | 600 | 1.0 | 3 | 1.0 |
| BZX584C4V3 | Z17 | 4.3 | 4.0 | 4.6 | 5 | 90 | 600 | 1.0 | 3 | 1.0 |
| BZX584C4V7 | Z1 | 4.7 | 4.4 | 5.0 | 5 | 80 | 500 | 1.0 | 3 | 2.0 |
| BZX584C5V1 | Z2 | 5.1 | 4.8 | 5.4 | 5 | 60 | 480 | 1.0 | 2 | 2.0 |
| BZX584C5V6 | Z3 | 5.6 | 5.2 | 6.0 | 5 | 40 | 400 | 1.0 | 1 | 2.0 |
| BZX584C6V2 | Z4 | 6.2 | 5.8 | 6.6 | 5 | 10 | 150 | 1.0 | 3 | 4.0 |

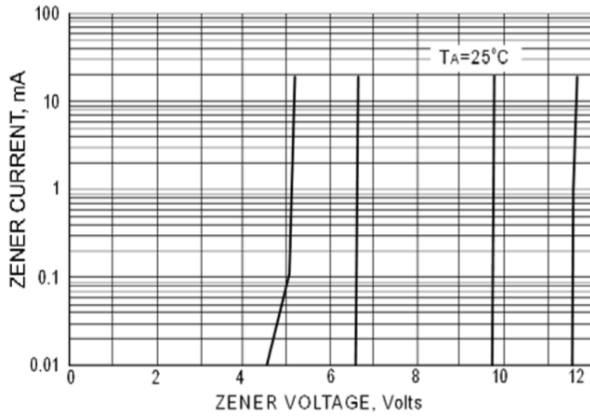
Continued next page

Electrical Characteristics (Ta = 25 °C)

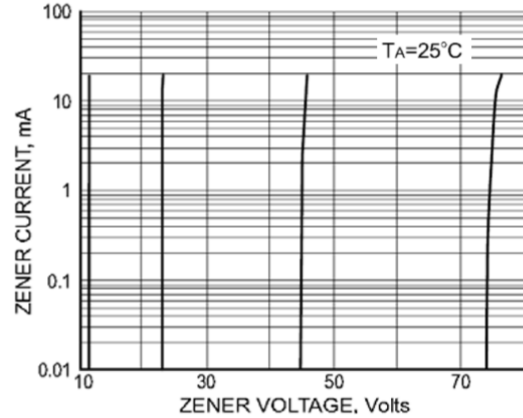
| Type Number | Device Marking | Vz (V) *1 | | | I _{ZT} mA | Z _{zT} @I _{ZT} Ω | Z _{zK} @I _{ZK} Ω | I _{zk} (mA) | I _R (uA) | V _R (V) |
|-------------|----------------|-----------|--------|--------|-----------------------|---------------------------------------|---------------------------------------|-------------------------|------------------------|-----------------------|
| | | Nom(V) | Min(V) | Max(V) | | | | | | |
| BZX584C6V8 | Z5 | 6.8 | 6.4 | 7.2 | 5 | 15 | 80 | 1.0 | 2 | 4.0 |
| BZX584C7V5 | Z6 | 7.5 | 7.0 | 7.9 | 5 | 15 | 80 | 1.0 | 1 | 5.0 |
| BZX584C8V2 | Z7 | 8.2 | 7.7 | 8.7 | 5 | 15 | 80 | 1.0 | 0.7 | 5.0 |
| BZX584C9V1 | Z8 | 9.1 | 8.5 | 9.6 | 5 | 15 | 100 | 1.0 | 0.5 | 6.0 |
| BZX584C10 | Z9 | 10.0 | 9.4 | 10.6 | 5 | 20 | 150 | 1.0 | 0.2 | 7.0 |
| BZX584C11 | Y1 | 11.0 | 10.4 | 11.6 | 5 | 20 | 150 | 1.0 | 0.1 | 8.0 |
| BZX584C12 | Y2 | 12.0 | 11.40 | 12.7 | 5 | 25 | 150 | 1.0 | 0.1 | 8.0 |
| BZX584C13 | Y3 | 13.0 | 12.40 | 14.10 | 5 | 30 | 170 | 1.0 | 0.1 | 8.0 |
| BZX584C15 | Y4 | 15.0 | 13.8 | 15.6 | 5 | 30 | 200 | 1.0 | 0.1 | 10.5 |
| BZX584C16 | Y5 | 16.0 | 15.3 | 17.1 | 5 | 40 | 200 | 1.0 | 0.1 | 11.2 |
| BZX584C18 | Y6 | 18.0 | 16.8 | 19.1 | 5 | 45 | 225 | 1.0 | 0.1 | 12.6 |
| BZX584C20 | Y7 | 20.0 | 18.8 | 21.2 | 5 | 55 | 225 | 1.0 | 0.1 | 14.0 |
| BZX584C22 | Y8 | 22.0 | 20.8 | 23.3 | 5 | 55 | 250 | 1.0 | 0.1 | 15.4 |
| BZX584C24 | Y9 | 24.0 | 22.80 | 25.6 | 5 | 70 | 250 | 1.0 | 0.1 | 16.8 |
| BZX584C27 | Y10 | 27.0 | 25.1 | 28.9 | 2 | 80 | 300 | 0.5 | 0.1 | 18.9 |
| BZX584C30 | Y11 | 30.0 | 28.0 | 32.0 | 2 | 80 | 300 | 0.5 | 0.1 | 21.0 |
| BZX584C33 | Y12 | 33.0 | 31.0 | 35.0 | 2 | 80 | 325 | 0.5 | 0.1 | 23.1 |
| BZX584C36 | Y13 | 36.0 | 34.0 | 38.0 | 2 | 90 | 350 | 0.5 | 0.1 | 25.2 |
| BZX584C39 | Y14 | 39.0 | 37.0 | 41.0 | 2 | 130 | 350 | 0.5 | 0.1 | 27.3 |
| BZX584C43 | Y15 | 43.0 | 40.0 | 46.0 | 2 | 100 | 700 | 1 | 0.1 | 32 |
| BZX584C47 | V1 | 47.0 | 44.65 | 49.35 | 2 | 170 | 1000 | 0.25 | 0.1 | 36 |
| BZX584C51 | V2 | 51 | 48.45 | 53.55 | 2 | 180 | 1300 | 0.25 | 0.1 | 39 |
| BZX584C56 | V3 | 56 | 53.20 | 58.80 | 2 | 200 | 1400 | 0.25 | 0.1 | 43 |
| BZX584C62 | V4 | 62 | 58.90 | 65.10 | 2 | 225 | 1400 | 0.25 | 0.1 | 47 |
| BZX584C68 | V5 | 68 | 64.60 | 71.40 | 2 | 240 | 1600 | 0.25 | 0.1 | 52 |
| BZX584C75 | V6 | 75 | 71.25 | 78.75 | 2 | 265 | 1700 | 0.25 | 0.1 | 56 |

*1 Pulse width = 10 ms

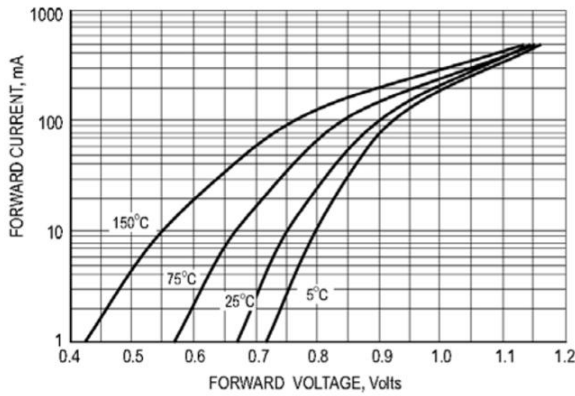
Typical Characteristics



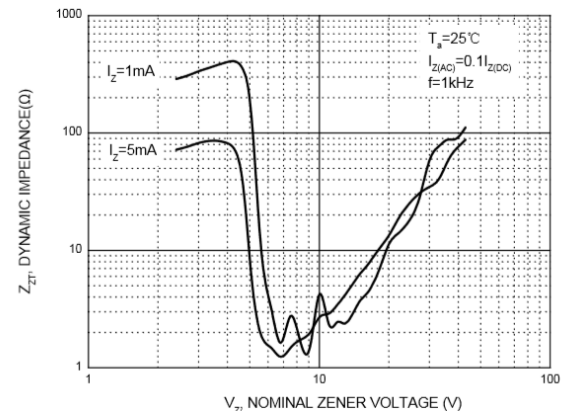
ZENER BREAKDOWN CHARACTERISTIC



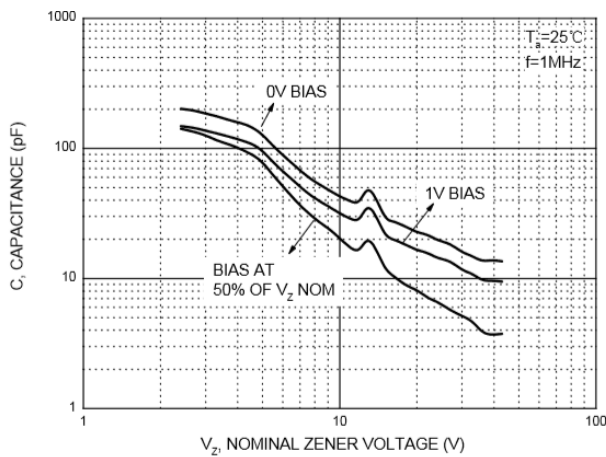
ZENER BREAKDOWN CHARACTERISTICS



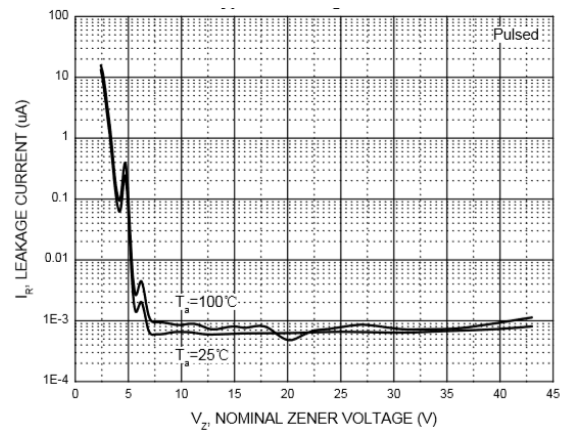
TYPICAL FORWARD VOLTAGE



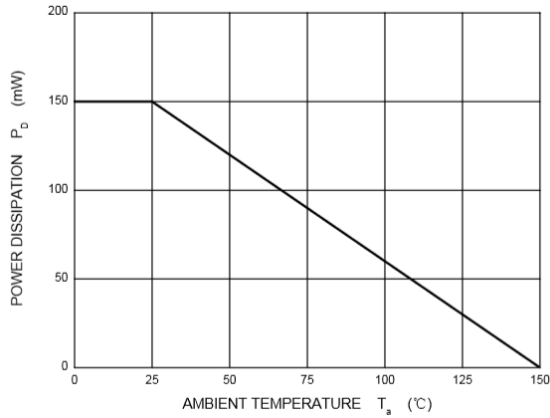
Effect of Zener Voltage on Zener Impedance



Typical Capacitance



Typical Leakage Current



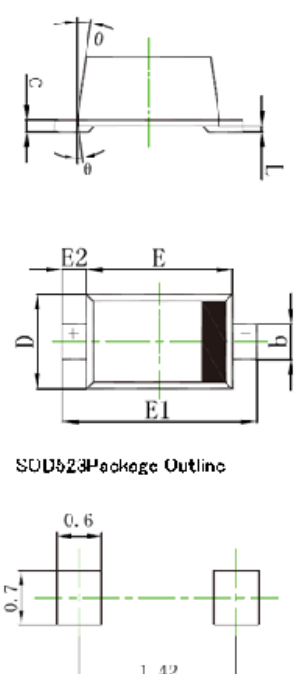
Power Derating Curve

Ordering Information

| Device | Package | Shipping | Tape wide | Emboss pitch | Tape specification | Notes |
|----------------|---------|---------------------------------|-----------|--------------|--------------------|-------|
| BZX584C Series | SOD523 | Tape & Reel 8000pcs /7" Reel | 8 mm | 4 mm | Conductive | |

Package Dimensions

Package outline : SOD-523



| Unit | A | A1 | b | c | D | E | E1 | E2 | L | θ |
|------|------|------|------|------|------|------|------|------|------|----------|
| Max. | 0.77 | 0.70 | 0.35 | 0.15 | 0.85 | 1.30 | 1.70 | 0.20 | 0.07 | 7° |
| Min. | 0.51 | 0.50 | 0.25 | 0.08 | 0.75 | 1.10 | 1.50 | REF. | 0.01 | REF. |

SOD523 Package Outline

Lead Pattern Recommendation

Note:
 1. Halogen free, EMC
 2. Pb free solder
 3. Lead thickness includes solder plating
 4. Lead frame: Cu
 5. Other Tolerance: ± 0.05
 6. Dimensions are exclusive of Burrs, Mold Flash and Tie Bar extrusions
 7. Unit: mm

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