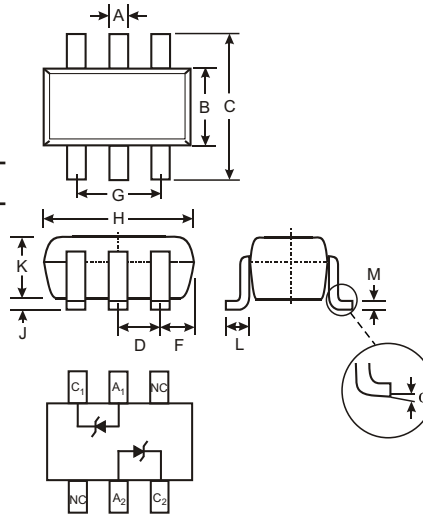


Features

- Planar Die Construction
- 200mW Power Dissipation
- Zener Voltages from 2.4V - 39V
- Ultra-Small Surface Mount Package
- Lead Free/RoHS Compliant (Note 5)

Mechanical Data

- Case: SOT-363
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).
- Polarity: See Diagram
- Marking: See Table page 2
- Weight: 0.006 grams (approximate)



| SOT-363 | | |
|----------------------|--------------|------|
| Dim | Min | Max |
| A | 0.10 | 0.30 |
| B | 1.15 | 1.35 |
| C | 2.00 | 2.20 |
| D | 0.65 Nominal | |
| F | 0.30 | 0.40 |
| H | 1.80 | 2.20 |
| J | | 0.10 |
| K | 0.90 | 1.00 |
| L | 0.25 | 0.40 |
| M | 0.10 | 0.25 |
| | 0 | 8° |
| All Dimensions in mm | | |

Maximum Ratings @ T_A = 25 C unless otherwise specified

| Characteristic | Symbol | Value | Unit |
|--|-----------------------------------|-------------|------|
| Forward Voltage @ I _F = 10mA | V _F | 0.9 | V |
| Power Dissipation (Note 1) | P _d | 200 | mW |
| Thermal Resistance, Junction to Ambient Air (Note 1) | R _{JA} | 625 | C/W |
| Operating and Storage Temperature Range | T _J , T _{STG} | -65 to +150 | C |

Ordering Information (Note 4)

| Device | Packaging | Shipping |
|-------------------|-----------|------------------|
| (Type Number)-7-F | SOT-363 | 3000/Tape & Reel |

* Add "-7-F" to the appropriate type number in Table 1 from Sheet 2 example: 6.2V Zener = BZX84C6V2S-7-F.

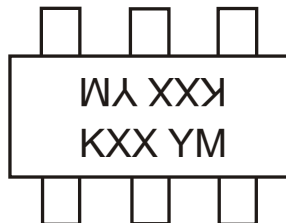
- Notes:
- Mounted on FR4 PC Board with recommended pad layout which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.
 - Short duration test pulse used to minimize self-heating effect.
 - f = 1KHz.
 - For Packaging Details, got to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.
 - No purposefully added lead.

Electrical Characteristics @ T_A = 25 C unless otherwise specified

| Type Number | Marking Code | Zener Voltage Range (Note 6) | | | | Maximum Zener Impedance (Note 7) | | | Maximum Reverse Current (Note 6) | | Temperature Coefficient of Zener Voltage @ I _{ZT} = 5mA mV/ C | |
|-------------|--------------|----------------------------------|---------|---------|-----------------|-----------------------------------|-----------------------------------|-----------------|----------------------------------|----------------|--|------|
| | | V _Z @ I _{ZT} | | | I _{ZT} | Z _{ZT} @ I _{ZT} | Z _{ZK} @ I _{ZK} | I _{ZK} | I _R | V _R | Min | Max |
| | | Nom (V) | Min (V) | Max (V) | mA | | | mA | uA | V | | |
| BZX84C2V4S | KZB | 2.4 | 2.2 | 2.6 | 5.0 | 100 | 600 | 1.0 | 50 | 1.0 | -3.5 | 0 |
| BZX84C2V7S | KZC | 2.7 | 2.5 | 2.9 | 5.0 | 100 | 600 | 1.0 | 20 | 1.0 | -3.5 | 0 |
| BZX84C3V0S | KZD | 3.0 | 2.8 | 3.2 | 5.0 | 95 | 600 | 1.0 | 10 | 1.0 | -3.5 | 0 |
| BZX84C3V3S | KZE | 3.3 | 3.1 | 3.5 | 5.0 | 95 | 600 | 1.0 | 5.0 | 1.0 | -3.5 | 0 |
| BZX84C3V6S | KZF | 3.6 | 3.4 | 3.8 | 5.0 | 90 | 600 | 1.0 | 5.0 | 1.0 | -3.5 | 0 |
| BZX84C3V9S | KZG | 3.9 | 3.7 | 4.1 | 5.0 | 90 | 600 | 1.0 | 3.0 | 1.0 | -3.5 | 0 |
| BZX84C4V3S | KZH | 4.3 | 4.0 | 4.6 | 5.0 | 90 | 600 | 1.0 | 3.0 | 1.0 | -3.5 | 0 |
| BZX84C4V7S | KZ1 | 4.7 | 4.4 | 5.0 | 5.0 | 80 | 500 | 1.0 | 3.0 | 2.0 | -3.5 | 0.2 |
| BZX84C5V1S | KZ2 | 5.1 | 4.8 | 5.4 | 5.0 | 60 | 480 | 1.0 | 2.0 | 2.0 | -2.7 | 1.2 |
| BZX84C5V6S | KZ3 | 5.6 | 5.2 | 6.0 | 5.0 | 40 | 400 | 1.0 | 1.0 | 2.0 | -2.0 | -2.5 |
| BZX84C6V2S | KZ4 | 6.2 | 5.8 | 6.6 | 5.0 | 10 | 150 | 1.0 | 3.0 | 4.0 | 0.4 | 3.7 |
| BZX84C6V8S | KZ5 | 6.8 | 6.4 | 7.2 | 5.0 | 15 | 80 | 1.0 | 2.0 | 4.0 | 1.2 | 4.5 |
| BZX84C7V5S | KZ6 | 7.5 | 7.0 | 7.9 | 5.0 | 15 | 80 | 1.0 | 1.0 | 5.0 | 2.5 | 5.3 |
| BZX84C8V2S | KZ7 | 8.2 | 7.7 | 8.7 | 5.0 | 15 | 80 | 1.0 | 0.7 | 5.0 | 3.2 | 6.2 |
| BZX84C9V1S | KZ8 | 9.1 | 8.5 | 9.6 | 5.0 | 15 | 100 | 1.0 | 0.5 | 6.0 | 3.8 | 7.0 |
| BZX84C10S | KZ9 | 10 | 9.4 | 10.6 | 5.0 | 20 | 150 | 1.0 | 0.2 | 7.0 | 4.5 | 8.0 |
| BZX84C11S | KY1 | 11 | 10.4 | 11.6 | 5.0 | 20 | 150 | 1.0 | 0.1 | 8.0 | 5.4 | 9.0 |
| BZX84C12S | KY2 | 12 | 11.4 | 12.7 | 5.0 | 25 | 150 | 1.0 | 0.1 | 8.0 | 6.0 | 10.0 |
| BZX84C13S | KY3 | 13 | 12.4 | 14.1 | 5.0 | 30 | 170 | 1.0 | 0.1 | 8.0 | 7.0 | 11.0 |
| BZX84C15S | KY4 | 15 | 13.8 | 15.6 | 5.0 | 30 | 200 | 1.0 | 0.1 | 10.5 | 9.2 | 13.0 |
| BZX84C16S | KY5 | 16 | 15.3 | 17.1 | 5.0 | 40 | 200 | 1.0 | 0.1 | 11.2 | 10.4 | 14.0 |
| BZX84C18S | KY6 | 18 | 16.8 | 19.1 | 5.0 | 45 | 225 | 1.0 | 0.1 | 12.6 | 12.4 | 16.0 |
| BZX84C20S | KY7 | 20 | 18.8 | 21.2 | 5.0 | 55 | 225 | 1.0 | 0.1 | 14.0 | 14.4 | 18.0 |
| BZX84C22S | KY8 | 22 | 20.8 | 23.3 | 5.0 | 55 | 250 | 1.0 | 0.1 | 15.4 | 16.4 | 20.0 |
| BZX84C24S | KY9 | 24 | 22.8 | 25.6 | 5.0 | 70 | 250 | 1.0 | 0.1 | 16.8 | 18.4 | 22.0 |
| BZX84C27S | KYA | 27 | 25.1 | 28.9 | 2.0 | 80 | 300 | 0.5 | 0.1 | 18.9 | 21.4 | 25.3 |
| BZX84C30S | KYB | 30 | 28.0 | 32.0 | 2.0 | 80 | 300 | 0.5 | 0.1 | 21.0 | 24.4 | 29.4 |
| BZX84C33S | KYC | 33 | 31.0 | 35.0 | 2.0 | 80 | 325 | 0.5 | 0.1 | 23.1 | 27.4 | 33.4 |
| BZX84C36S | KYD | 36 | 34.0 | 38.0 | 2.0 | 90 | 350 | 0.5 | 0.1 | 25.2 | 30.4 | 37.4 |
| BZX84C39S | KYE | 39 | 37.0 | 41.0 | 2.0 | 130 | 350 | 0.5 | 0.1 | 27.3 | 33.4 | 41.2 |

Notes: 6. Short duration test pulse used to minimize self-heating effect.
7. f = 1KHz.

Marking Information



KXX = Product Type Marking Code
YM = Date Code Marking
Y = Year ex: N = 2002
M = Month ex: 9 = September

Date Code Key

| Year | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|------|------|------|------|------|------|------|------|------|
| Code | N | P | R | S | T | U | V | W |

| Month | Jan | Feb | March | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|-------|-----|-----|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Code | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | O | N | D |

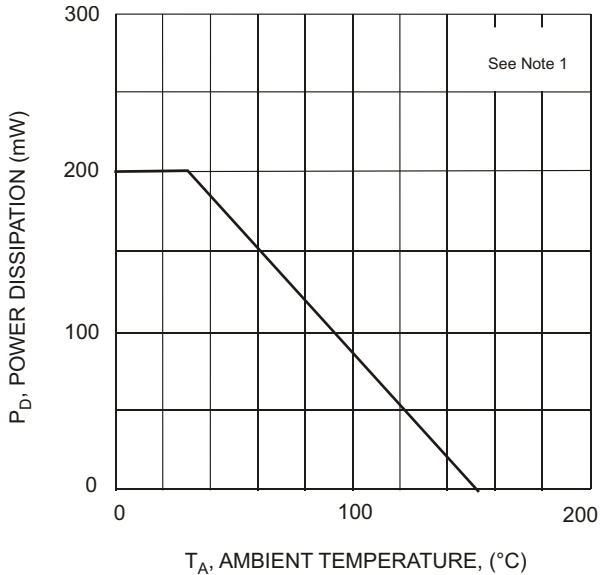


Fig. 1. Power Derating Curve

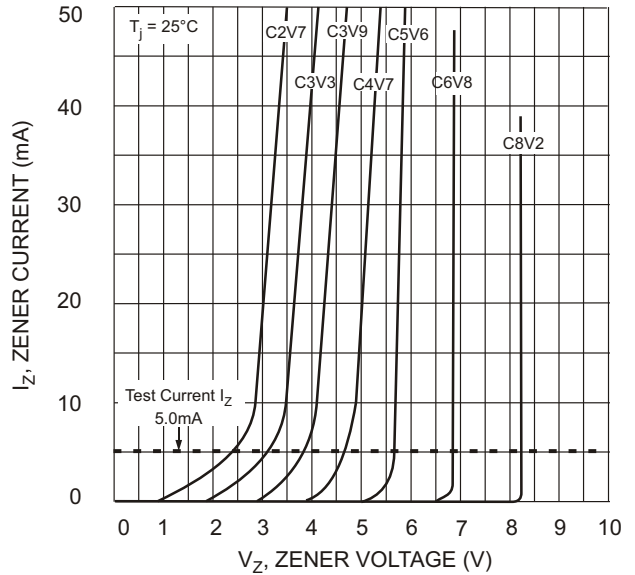


Fig. 2. Zener Breakdown Characteristics

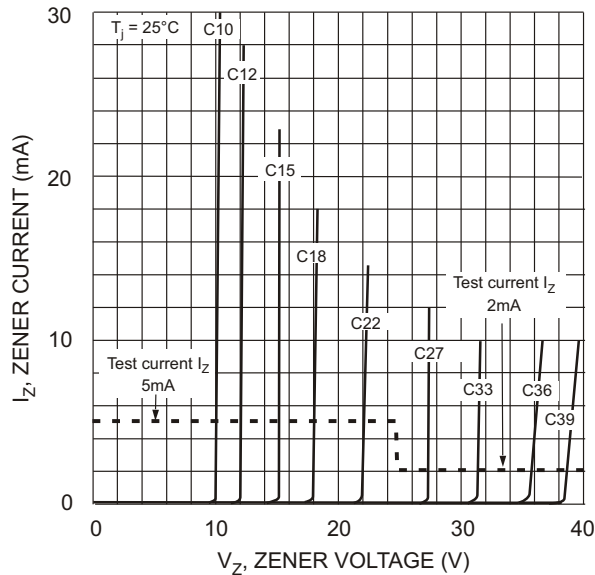


Fig. 3. Zener Breakdown Characteristics

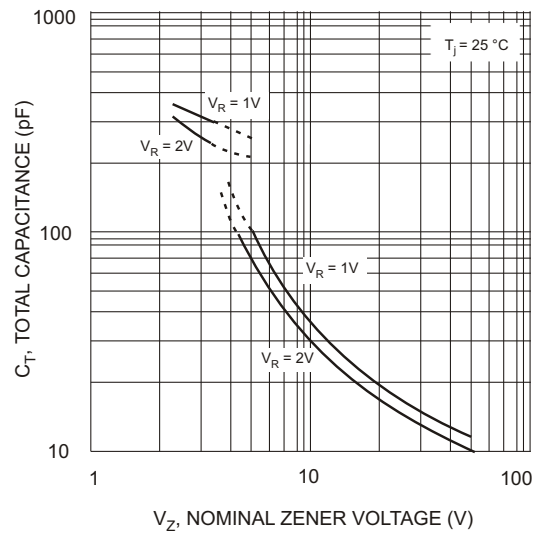


Fig. 4. Total Capacitance vs Nominal Zener Voltage

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