

Features

- Fast Switching Speed
- Small Surface Mount Package
- For General Purpose Switching Applications
- High Conductance
- Two "BAV99" Circuits In One Package
- **Lead Free/RoHS Compliant (Note 1)**
- **Qualified to AEC-Q101 Standards for High Reliability**
- **"Green" Device (Notes 2 & 3)**

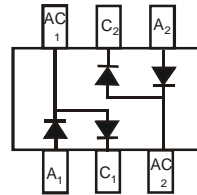
Mechanical Data

- Case: SOT363
- Case Material: Molded Plastic, "Green" Molding Compound (Note 3). UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish annealed over Alloy 42 leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208
- Polarity: See Diagram
- Weight: 0.006 grams (approximate)

SOT363



Top View



Top View
Internal Schematic

Ordering Information (Note 4)

| Part Number | Case | Packaging |
|-------------|--------|------------------|
| BAV99DW-7-F | SOT363 | 3000/Tape & Reel |

- Notes:
1. No purposefully added lead.
 2. Diodes Inc.'s "Green" policy can be found on our website at <http://www.diodes.com>.
 3. Product manufactured with Date Code UO (week 40, 2007) and newer are built with Green Molding Compound. Product manufactured prior to Date Code UO are built with Non-Green Molding Compound and may contain Halogens or Sb2O3 Fire Retardants.
 4. For packaging details, go to our website at <http://www.diodes.com>.

Marking Information



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

Date Code Key

| Year | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Code | M | N | P | R | S | T | U | V | W | X | Y | Z | A | B | C |

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

Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

| Characteristic | Symbol | Value | Unit |
|---|------------------------|-------|------|
| Non-Repetitive Peak Reverse Voltage | V_{RM} | 100 | V |
| Peak Repetitive Reverse Voltage | V_{RRM} | 75 | V |
| Working Peak Reverse Voltage | V_{RWM} | | |
| DC Blocking Voltage | V_R | | |
| RMS Reverse Voltage | $V_{R(RMS)}$ | 53 | V |
| Forward Continuous Current (Note 5) | I_{FM} | 215 | mA |
| Non-Repetitive Peak Forward Surge Current | @ $t = 1.0\mu\text{s}$ | 2.0 | A |
| | @ $t = 1.0\text{ms}$ | 1.0 | |
| | @ $t = 1.0\text{s}$ | 0.5 | |

Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|---|-----------------|-------------|--------------------|
| Power Dissipation (Note 5) | P_D | 200 | mW |
| Power Dissipation (Note 6) | P_D | 300 | mW |
| Thermal Resistance Junction to Ambient Air (Note 5) | $R_{\theta JA}$ | 625 | $^\circ\text{C/W}$ |
| Thermal Resistance Junction to Ambient Air (Note 6) | $R_{\theta JA}$ | 417 | $^\circ\text{C/W}$ |
| Operating and Storage Temperature Range | T_J, T_{STG} | -65 to +150 | $^\circ\text{C}$ |

Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

| Characteristic | Symbol | Min | Max | Unit | Test Condition |
|------------------------------------|-------------|-----|-------|---------------|---|
| Reverse Breakdown Voltage (Note 7) | $V_{(BR)R}$ | 75 | — | V | $I_R = 2.5\mu\text{A}$ |
| Forward Voltage | V_F | — | 0.715 | V | $I_F = 1.0\text{mA}$ |
| | | — | 0.855 | | $I_F = 10\text{mA}$ |
| | | — | 1.0 | | $I_F = 50\text{mA}$ |
| | | — | 1.25 | | $I_F = 150\text{mA}$ |
| Reverse Current (Note 7) | I_R | — | 2.5 | μA | $V_R = 75\text{V}$ |
| | | — | 50 | μA | $V_R = 75\text{V}, T_J = 150^\circ\text{C}$ |
| | | — | 30 | μA | $V_R = 25\text{V}, T_J = 150^\circ\text{C}$ |
| | | — | 25 | nA | $V_R = 20\text{V}$ |
| Total Capacitance | C_T | — | 2.0 | pF | $V_R = 0, f = 1.0\text{MHz}$ |
| Reverse Recovery Time | t_{rr} | — | 4.0 | ns | $I_F = I_R = 10\text{mA}, I_{rr} = 0.1 \times I_R, R_L = 100\Omega$ |

- Notes:
- Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch; pad layout as shown on Diodes Inc. suggested pad layout document AP02001, which can be found on our website at <http://www.diodes.com>.
 - Device mounted on Alumina PCB, 0.4 inch x 0.3 inch x 0.024 inch; pad layout as shown on Diodes Inc. suggested pad layout document AP02001, which can be found on our website at <http://www.diodes.com>.
 - Short duration pulse test used to minimize self-heating effect.

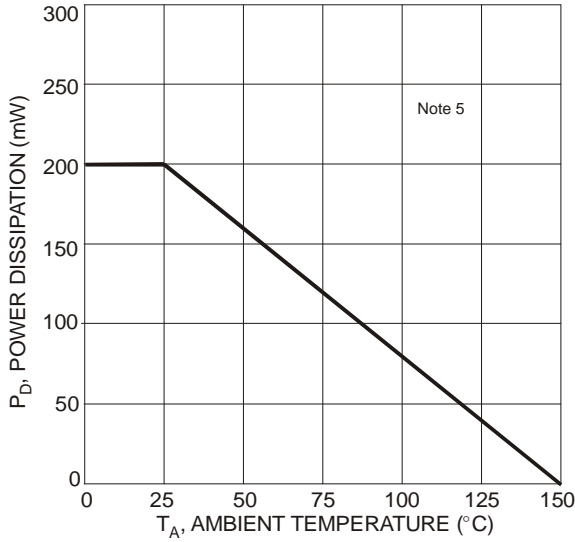


Fig. 1 Power Derating Curve, Total Package

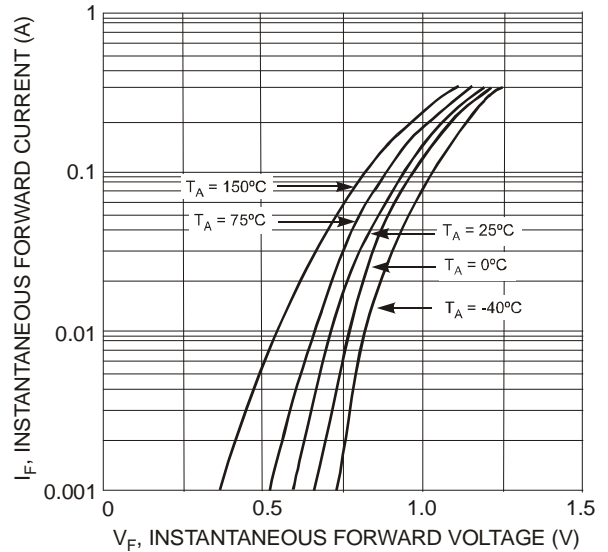


Fig. 2 Typical Forward Characteristics, Per Element

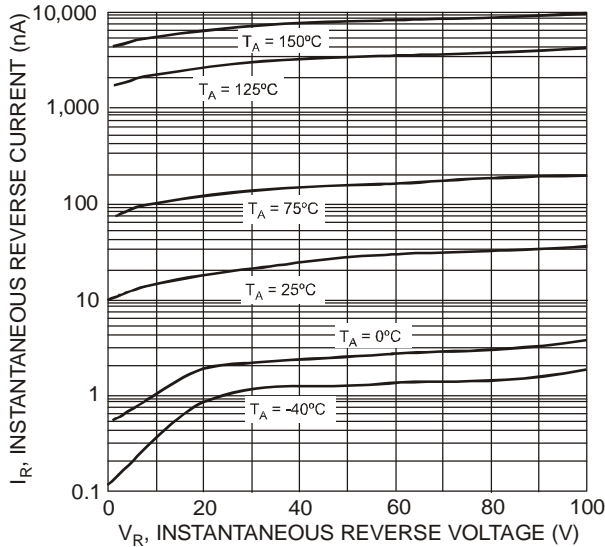


Fig. 3 Typical Reverse Characteristics, Per Element

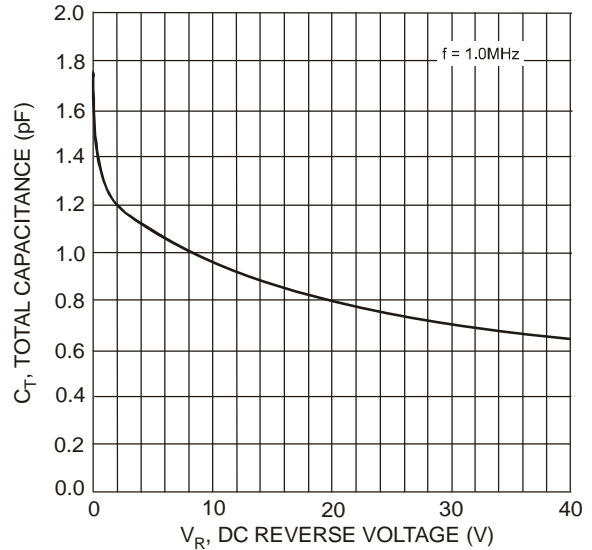
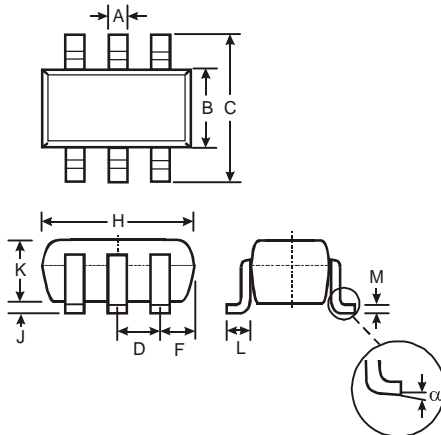


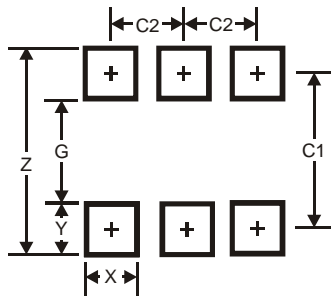
Fig. 4 Total Capacitance vs. Reverse Voltage, Per Element

Package Outline Dimensions



| SOT363 | | |
|-----------------------------|----------|------|
| Dim | Min | Max |
| A | 0.10 | 0.30 |
| B | 1.15 | 1.35 |
| C | 2.00 | 2.20 |
| D | 0.65 Typ | |
| F | 0.40 | 0.45 |
| H | 1.80 | 2.20 |
| J | 0 | 0.10 |
| K | 0.90 | 1.00 |
| L | 0.25 | 0.40 |
| M | 0.10 | 0.22 |
| α | 0° | 8° |
| All Dimensions in mm | | |

Suggested Pad Layout



| Dimensions | Value (in mm) |
|------------|---------------|
| Z | 2.5 |
| G | 1.3 |
| X | 0.42 |
| Y | 0.6 |
| C1 | 1.9 |
| C2 | 0.65 |

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