

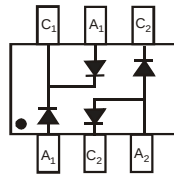
## Features

- Fast Switching Speed
- Ultra-Small Surface Mount Package
- For General Purpose Switching Applications
- High Conductance
- One BAV70 Circuit and One BAV56 Circuit In One Package
- Easily Connected As Full Wave Bridge
- **Lead Free/RoHS Compliant (Note 3)**
- **"Green" Device (Notes 4 and 5)**



TOP VIEW

SOT-363


 TOP VIEW  
 Internal Schematic

## Mechanical Data

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

## Maximum Ratings @T<sub>A</sub> = 25°C unless otherwise specified

| Characteristic                                        | Symbol              | Value | Unit |
|-------------------------------------------------------|---------------------|-------|------|
| Non-Repetitive Peak Reverse Voltage                   | V <sub>RM</sub>     | 100   | V    |
| Peak Repetitive Reverse Voltage                       | V <sub>RRM</sub>    | 75    | V    |
| Working Peak Reverse Voltage                          | V <sub>RWM</sub>    |       |      |
| DC Blocking Voltage                                   | V <sub>R</sub>      |       |      |
| RMS Reverse Voltage                                   | V <sub>R(RMS)</sub> | 53    | V    |
| Forward Continuous Current (Notes 1 and 2)            | I <sub>FM</sub>     | 300   | mA   |
| Average Rectified Output Current (Notes 1 and 2)      | I <sub>O</sub>      | 150   | mA   |
| Non-Repetitive Peak Forward Surge Current @ t = 1.0μs | I <sub>FSM</sub>    | 2.0   | A    |
|                                                       |                     | 1.0   |      |

## Thermal Characteristics

| Characteristic                                             | Symbol                            | Value       | Unit |
|------------------------------------------------------------|-----------------------------------|-------------|------|
| Power Dissipation (Notes 1 and 2)                          | P <sub>D</sub>                    | 200         | mW   |
| Power Dissipation T <sub>S</sub> = 60°C (Note 2)           | P <sub>D</sub>                    | 300         | mW   |
| Thermal Resistance Junction to Ambient Air (Notes 1 and 2) | R <sub>θJA</sub>                  | 625         | °C/W |
| Thermal Resistance Junction to Soldering Point (Note 2)    | R <sub>θJS</sub>                  | 275         | °C/W |
| Operating and Storage Temperature Range                    | T <sub>J</sub> , T <sub>STG</sub> | -65 to +150 | °C   |

## Electrical Characteristics @T<sub>A</sub> = 25°C unless otherwise specified

| Characteristic                     | Symbol             | Min | Max   | Unit | Test Condition                                                                                         |
|------------------------------------|--------------------|-----|-------|------|--------------------------------------------------------------------------------------------------------|
| Reverse Breakdown Voltage (Note 6) | V <sub>(BR)R</sub> | 75  | —     | V    | I <sub>R</sub> = 2.5μA                                                                                 |
| Forward Voltage                    | V <sub>F</sub>     | —   | 0.715 | V    | I <sub>F</sub> = 1.0mA                                                                                 |
|                                    |                    |     | 0.855 |      | I <sub>F</sub> = 10mA                                                                                  |
|                                    |                    |     | 1.0   |      | I <sub>F</sub> = 50mA                                                                                  |
|                                    |                    |     | 1.25  |      | I <sub>F</sub> = 150mA                                                                                 |
| Reverse Current (Note 6)           | I <sub>R</sub>     | —   | 2.5   | μA   | V <sub>R</sub> = 75V                                                                                   |
|                                    |                    |     | 50    | μA   | V <sub>R</sub> = 75V, T <sub>J</sub> = 150°C                                                           |
|                                    |                    |     | 30    | μA   | V <sub>R</sub> = 25V, T <sub>J</sub> = 150°C                                                           |
|                                    |                    |     | 25    | nA   | V <sub>R</sub> = 20V                                                                                   |
| Total Capacitance                  | C <sub>T</sub>     | —   | 2.0   | pF   | V <sub>R</sub> = 0, f = 1.0MHz                                                                         |
| Reverse Recovery Time              | t <sub>rr</sub>    | —   | 4.0   | ns   | I <sub>F</sub> = I <sub>R</sub> = 10mA, I <sub>rr</sub> = 0.1 x I <sub>R</sub> , R <sub>L</sub> = 100Ω |

- Notes:
1. Device mounted on FR-4 PC board with recommended pad layout, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.
  2. One or more diodes loaded.
  3. No purposefully added lead.
  4. Diodes Inc.'s "Green" policy can be found on our website at [http://www.diodes.com/products/lead\\_free/index.php](http://www.diodes.com/products/lead_free/index.php).
  5. 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 Sb<sub>2</sub>O<sub>3</sub> Fire Retardants.
  6. Short duration pulse test used to minimize self-heating effect.

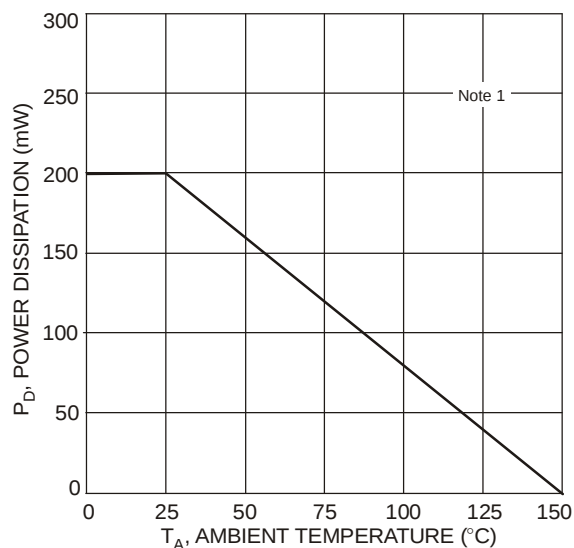


Fig. 1 Power Derating Curve, Total Package

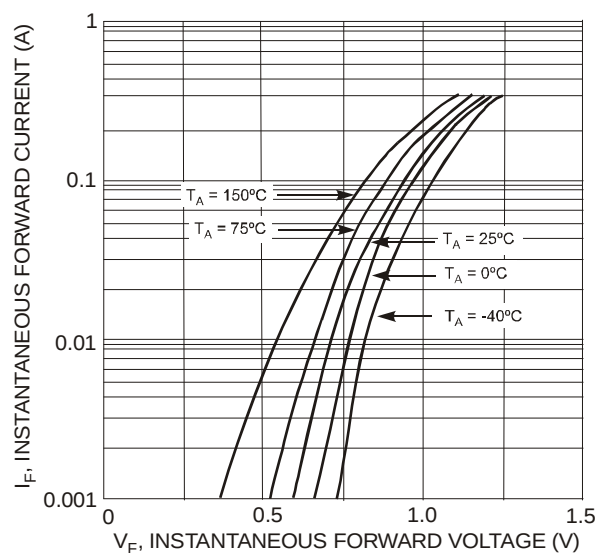


Fig. 2 Typical Forward Characteristics, Per Element

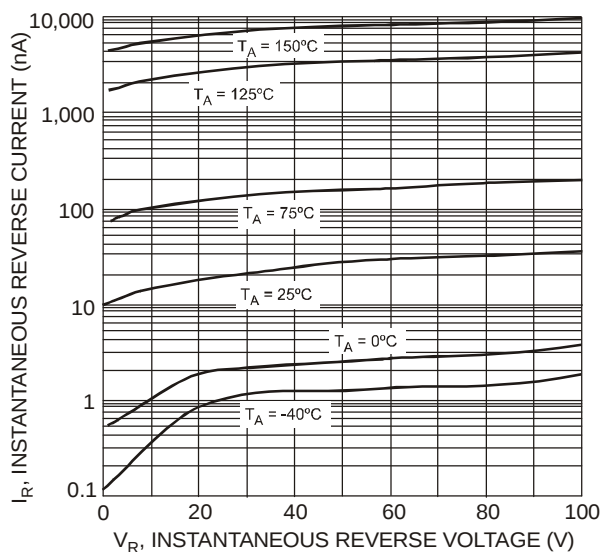


Fig. 3 Typical Reverse Characteristics, Per Element

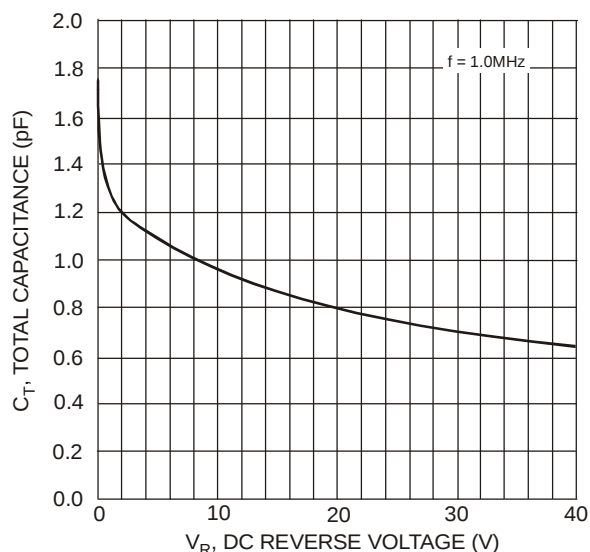


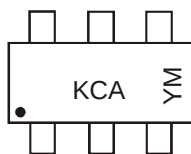
Fig. 4 Total Capacitance vs. Reverse Voltage, Per Element

## Ordering Information (Notes 5 & 7)

| Part Number  | Case    | Packaging        |
|--------------|---------|------------------|
| BAV756DW-7-F | SOT-363 | 3000/Tape & Reel |

Notes: 7. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

## Marking Information



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

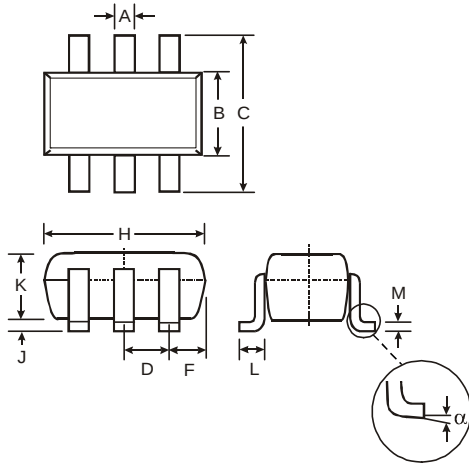
### Date Code Key

| Year | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2111 | 2012 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Code | M    | N    | P    | R    | S    | T    | U    | V    | W    | X    | Y    | Z    |

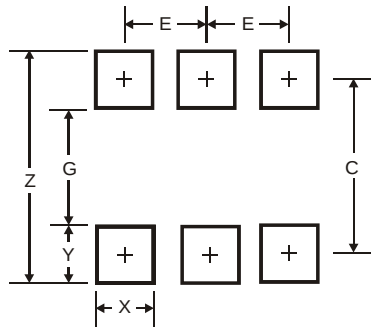
| Month | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Code  | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | O   | N   | D   |

## Package Outline Dimensions



| 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 |
| $\alpha$             | 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           |
| C          | 1.9           |
| E          | 0.65          |

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