

## Features

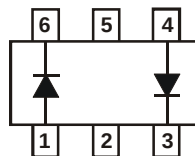
- Fast Switching Speed: max. 50ns
- High Reverse Breakdown Voltage: 300V
- Two Electrically Isolated Elements in a Single Compact Package
- Low Leakage Current: 150nA at Room Temperature
- Lead, Halogen and Antimony Free, RoHS Compliant (Note 3)**
- "Green" Device (Note 4)**



Top View

## 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-020
- Terminals: Finish – Matte Tin annealed over Alloy 42 leadframe. Solderable per MIL-STD-202, Method 208
- Marking Information: See Page 2
- Ordering Information: See Page 2
- Weight: 0.006 grams (approximate)



Device Schematic

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

| Characteristic                                        | Symbol              | Value | Unit |
|-------------------------------------------------------|---------------------|-------|------|
| Repetitive Peak Reverse Voltage                       | Single Diode        | 300   | V    |
|                                                       | Series Connection   | 600   |      |
| Working Peak Reverse Voltage                          | Single Diode        | 300   | V    |
|                                                       | Series Connection   | 600   |      |
| DC Blocking Voltage                                   | V <sub>R</sub>      | 600   | V    |
| RMS Reverse Voltage                                   | V <sub>R(RMS)</sub> | 212   | V    |
| Forward Current (Note 2)                              | Single Diode Loaded | 250   | mA   |
|                                                       | Double Diode Loaded | 140   |      |
| Non-Repetitive Peak Forward Surge Current @ t = 1.0μs | I <sub>FSM</sub>    | 4.5   | A    |
| Repetitive Peak Forward Current @ t = 8.3ms (Note 2)  | I <sub>FRM</sub>    | 625   | mA   |

## Thermal Characteristics

| Characteristic                                      | Symbol                            | Value       | Unit |
|-----------------------------------------------------|-----------------------------------|-------------|------|
| Power Dissipation (Note 2)                          | P <sub>D</sub>                    | 300         | mW   |
| Thermal Resistance Junction to Ambient Air (Note 2) | R <sub>θJA</sub>                  | 417         | °C/W |
| Operating and Storage Temperature Range             | T <sub>J</sub> , T <sub>STG</sub> | -55 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 1) | V <sub>(BR)R</sub> | 300 | —   | V    | I <sub>R</sub> = 100μA                                                                                 |
| Forward Voltage                    | V <sub>F</sub>     | —   | 1.1 | V    | I <sub>F</sub> = 100mA                                                                                 |
| Reverse Current (Note 1)           | I <sub>R</sub>     | —   | 50  | nA   | V <sub>R</sub> = 5V                                                                                    |
|                                    |                    | —   | 150 | nA   | V <sub>R</sub> = 250V                                                                                  |
|                                    |                    | —   | 75  | μA   | V <sub>R</sub> = 250V, T <sub>J</sub> = 150°C                                                          |
| Total Capacitance                  | C <sub>T</sub>     | —   | 2.0 | pF   | V <sub>R</sub> = 0, f = 1.0MHz                                                                         |
| Reverse Recovery Time              | t <sub>rr</sub>    | —   | 50  | ns   | I <sub>F</sub> = I <sub>R</sub> = 30mA, I <sub>rr</sub> = 0.1 x I <sub>R</sub> , R <sub>L</sub> = 100Ω |

- Notes:
- Short duration pulse test used to minimize self-heating effect.
  - Part mounted on FR-4 board with recommended pad layout, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.
  - No purposefully added lead. Halogen and Antimony Free.
  - 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).

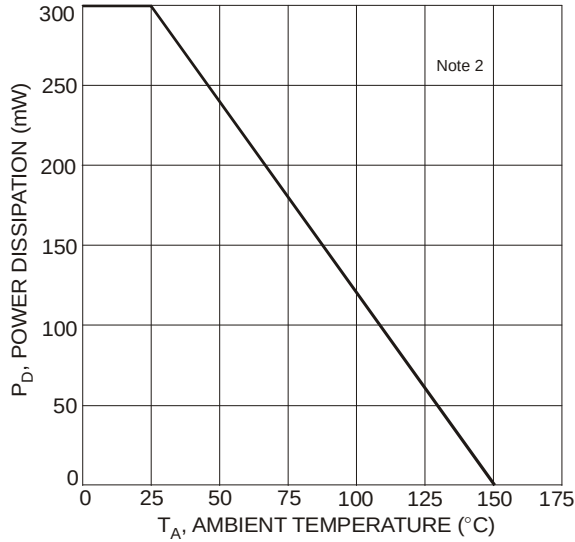


Fig. 1 Power Derating Curve, Total Package

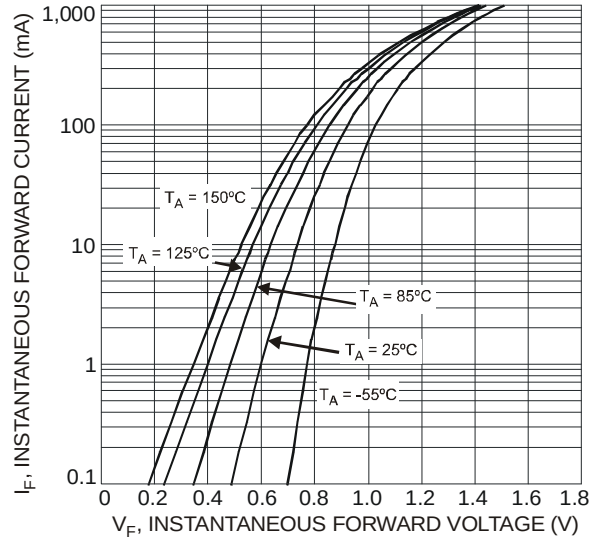


Fig. 2 Typical Forward Characteristics, Per Element

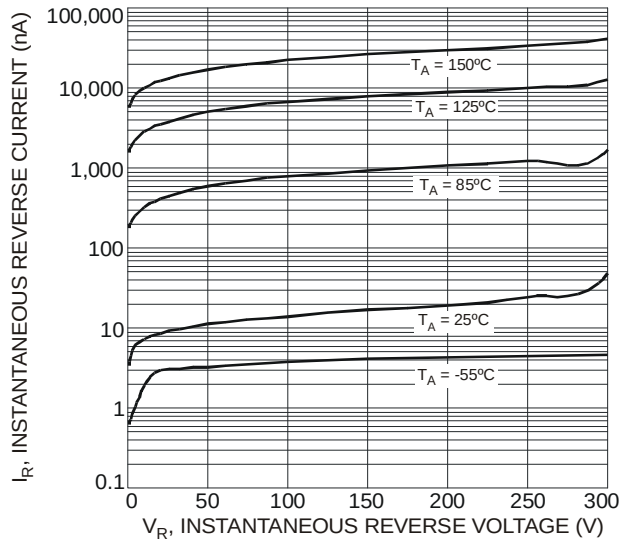


Fig. 3 Typical Reverse Characteristics, Per Element

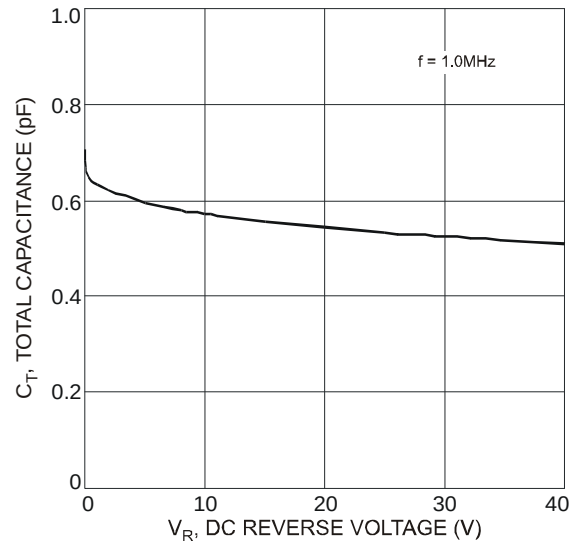


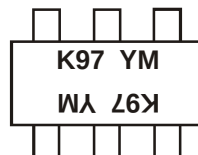
Fig. 4 Total Capacitance vs. Reverse Voltage, Per Element

## Ordering Information (Note 5)

| Part Number | Case    | Packaging        |
|-------------|---------|------------------|
| BAW101S-7   | SOT-363 | 3000/Tape & Reel |

Notes: 5. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

## Marking Information



K97 = Product Type Marking Code  
 YM = Date Code Marking  
 Y = Year (ex: X = 2010)  
 M = Month (ex: 9 = September)

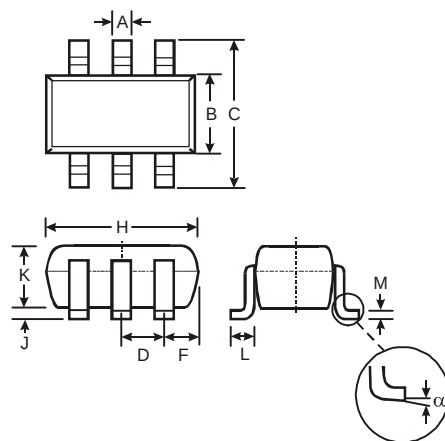
### Date Code Key

| Year | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|------|------|------|------|------|------|------|------|
| Code | X    | Y    | Z    | A    | B    | C    | D    |

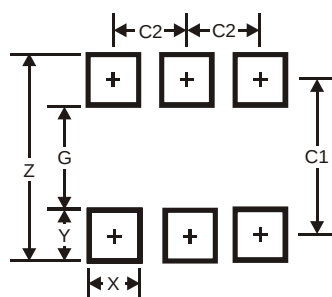
| Month | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Code  | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | O   | N   | D   |

## 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 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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