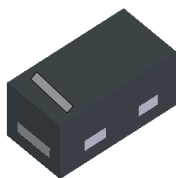


## Features

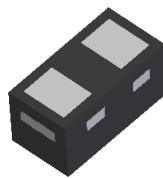
- Ultra-Small Leadless Surface Mount Package (0.6 x 0.3mm)
- Ultra-Low Profile Package (0.3mm)
- Very Low Leakage Current
- Low Capacitance
- Ideal for Compact Battery Powered Portable Electronics
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

## Mechanical Data

- Case: X3-DFN0603-2
- Case Material: Molded Plastic, "Green" Molding Compound.  
UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections: Cathode Bar
- Terminals: Finish Matte Tin Finish over Copper Leadframe  
(Lead Free Plating). Solderable per MIL-STD-202, Method 208 
- Weight: 0.2mg (Approximate)



Top View



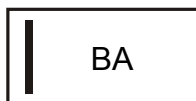
Bottom View

## Ordering Information (Note 4)

| Part Number | Case         | Packaging          |
|-------------|--------------|--------------------|
| BAS116LP3-7 | X3-DFN0603-2 | 10,000/Tape & Reel |

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
  2. See [http://www.diodes.com/quality/lead\\_free.html](http://www.diodes.com/quality/lead_free.html) for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
  3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
  4. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

## Marking Information



BA = Product Type Marking Code  
Bar Denotes Cathode Side

**Maximum Ratings** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

| Characteristic                            | Symbol              | Value | Unit |
|-------------------------------------------|---------------------|-------|------|
| Peak Repetitive Reverse Voltage           | V <sub>RRM</sub>    | 85    | V    |
| Working Peak Reverse Voltage              | V <sub>RWM</sub>    |       |      |
| DC Blocking Voltage                       | V <sub>R</sub>      |       |      |
| RMS Reverse Voltage                       | V <sub>R(RMS)</sub> | 60    | V    |
| Forward Continuous Current (Note 5)       | I <sub>FM</sub>     | 215   | mA   |
| Repetitive Peak Forward Current           | I <sub>FRM</sub>    | 500   | mA   |
| Non-Repetitive Peak Forward Surge Current | I <sub>FSM</sub>    | 4.0   | A    |
|                                           |                     | 1.0   |      |
|                                           |                     | 0.5   |      |

**Thermal Characteristics**

| Characteristic                                      | Symbol                            | Value       | Unit |
|-----------------------------------------------------|-----------------------------------|-------------|------|
| Power Dissipation (Note 5)                          | P <sub>D</sub>                    | 250         | mW   |
| Thermal Resistance Junction to Ambient Air (Note 6) | R <sub>θJA</sub>                  | 500         | °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 | Typ  | Max  | Unit | Test Condition                                                                                         |
|------------------------------------|--------------------|-----|------|------|------|--------------------------------------------------------------------------------------------------------|
| Reverse Breakdown Voltage (Note 6) | V <sub>(BR)R</sub> | 85  | —    | —    | V    | I <sub>R</sub> = 100μA                                                                                 |
| Forward Voltage                    | V <sub>F</sub>     | —   | 0.75 | 0.95 | V    | I <sub>F</sub> = 1.0mA                                                                                 |
|                                    |                    |     | 0.9  | 1.10 |      | I <sub>F</sub> = 10mA                                                                                  |
|                                    |                    |     | 1.0  | 1.20 |      | I <sub>F</sub> = 50mA                                                                                  |
|                                    |                    |     | 1.15 | 1.35 |      | I <sub>F</sub> = 150mA                                                                                 |
| Leakage Current (Note 6)           | I <sub>R</sub>     | —   | —    | 10.0 | nA   | V <sub>R</sub> = 75V                                                                                   |
|                                    |                    |     |      | 100  |      | V <sub>R</sub> = 1V, T <sub>J</sub> = +150°C                                                           |
|                                    |                    |     |      | 500  |      | V <sub>R</sub> = 75V, T <sub>J</sub> = +150°C                                                          |
| Total Capacitance                  | C <sub>T</sub>     | —   | 1.6  | 3.0  | pF   | V <sub>R</sub> = 0, f = 1.0MHz                                                                         |
| Reverse Recovery Time              | t <sub>rr</sub>    | —   | 120  | 3000 | 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: 5. Part mounted on FR-4 PC board with recommended pad layout, which can be found on our website at <http://www.diodes.com>.  
 6. Short duration pulse test used to minimize self-heating effect.

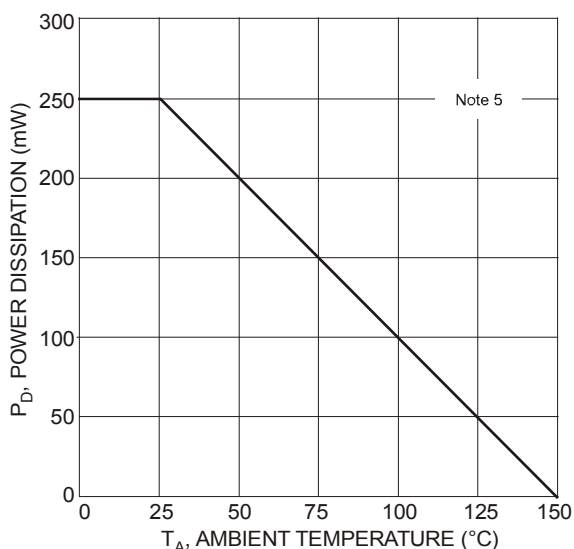


Figure 1 Power Derating Curve, Total Package

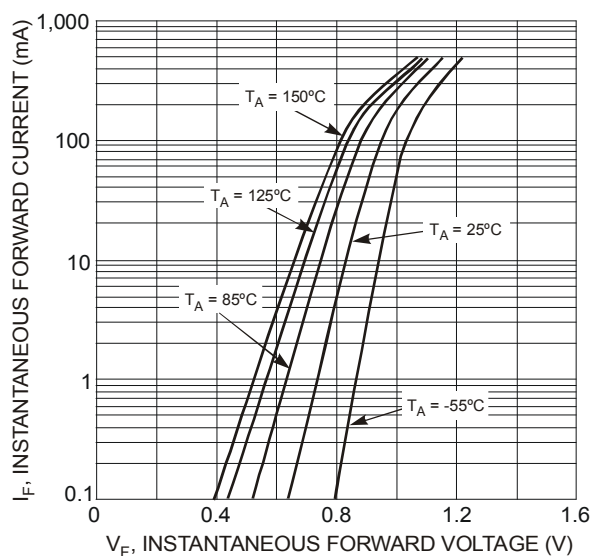


Figure 2 Typical Forward Characteristics

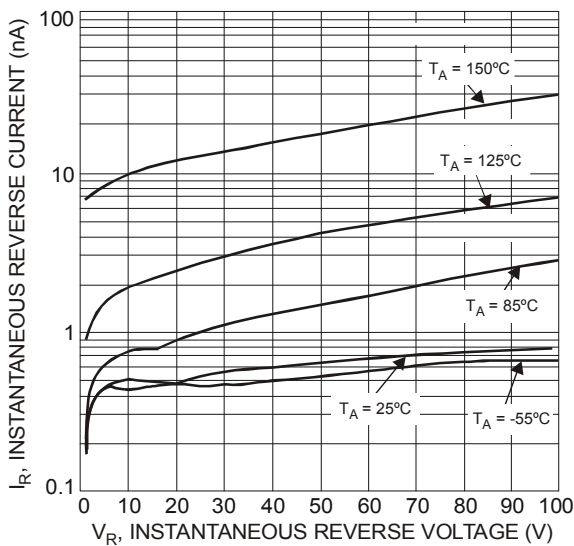


Figure 3 Typical Reverse Characteristics

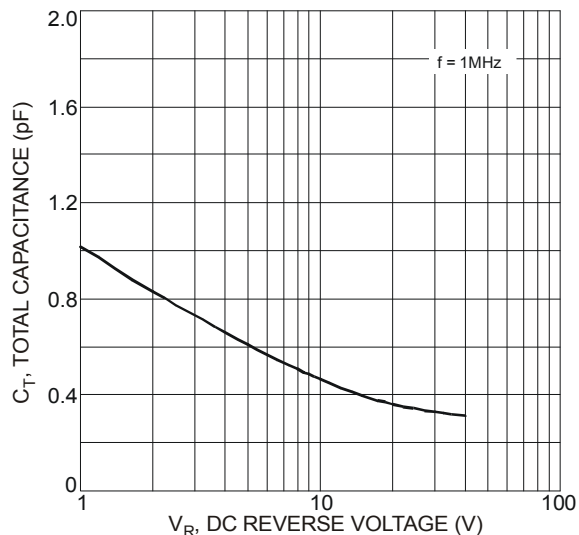
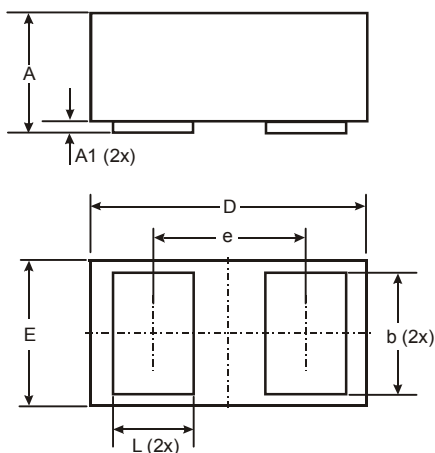


Figure 4 Typical Total Capacitance vs. Reverse Voltage

## Package Outline Dimensions

Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.

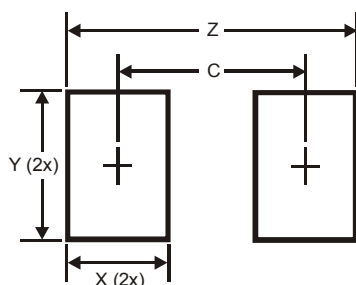


Bottom View

| X3-DFN0603-2         |       |       |       |
|----------------------|-------|-------|-------|
| Dim                  | Min   | Max   | Typ   |
| A                    | 0.27  | 0.35  | 0.30  |
| A1                   | 0.00  | 0.03  | 0.02  |
| b                    | 0.19  | 0.29  | 0.24  |
| D                    | 0.595 | 0.645 | 0.62  |
| E                    | 0.295 | 0.345 | 0.32  |
| e                    | -     | -     | 0.355 |
| L                    | 0.14  | 0.24  | 0.19  |
| All Dimensions in mm |       |       |       |

## Suggested Pad Layout

Please see AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for the latest version.



| Dimensions | Value (in mm) |
|------------|---------------|
| C          | 0.380         |
| X          | 0.230         |
| Y          | 0.300         |
| Z          | 0.610         |

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