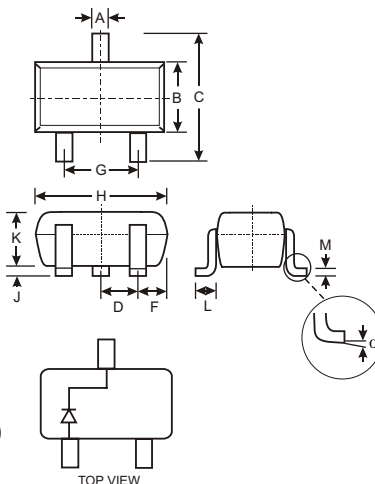


### Features

- Fast Switching Speed
- Surface Mount Package Ideally Suited for Automatic Insertion
- For General Purpose Switching Applications
- High Conductance

### Mechanical Data

- Case: SOT-323, Molded Plastic
- Case Material - UL Flammability Rating Classification 94V-0
- Moisture sensitivity: Level 1 per J-STD-020A
- Terminals: Solderable per MIL-STD-202, Method 208
- Terminal Connections: See Diagram
- BAS19W Marking: KA8 or KT2 or KT3 (See Page 3)
- BAS20W Marking: KT2 or KT3 (See Page 3)
- BAS21W Marking: KT3 (See Page 3)
- Weight: 0.006 grams (approx.)



| SOT-323              |              |      |
|----------------------|--------------|------|
| Dim                  | Min          | Max  |
| A                    | 0.25         | 0.40 |
| B                    | 1.15         | 1.35 |
| C                    | 2.00         | 2.20 |
| D                    | 0.65 Nominal |      |
| E                    | 0.30         | 0.40 |
| G                    | 1.20         | 1.40 |
| H                    | 1.80         | 2.20 |
| J                    | 0.0          | 0.10 |
| K                    | 0.90         | 1.00 |
| L                    | 0.25         | 0.40 |
| M                    | 0.10         | 0.18 |
| α                    | 0°           | 8°   |
| All Dimensions in mm |              |      |

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

| Characteristic  | Symbol                             | BAS19W      | BAS20W | BAS21W | Unit |
|---|------------------------------------|-------------|--------|--------|------|
| Repetitive Peak Reverse Voltage                                     | V <sub>RRM</sub>                   | 120         | 200    | 250    | V    |
| Working Peak Reverse Voltage<br>DC Blocking Voltage                 | V <sub>RWM</sub><br>V <sub>R</sub> | 100         | 150    | 200    | V    |
| RMS Reverse Voltage   | V <sub>R(RMS)</sub>                | 71          | 106    | 141    | V    |
| Forward Continuous Current (Note 1)                                 | I <sub>FM</sub>                    | 400         |        |        | mA   |
| Average Rectified Output Current (Note 1)                           | I <sub>O</sub>                     | 200         |        |        | mA   |
| Non-Repetitive Peak Forward Surge Current @ t = 1.0μs<br>@ t = 1.0s | I <sub>FSM</sub>                   | 2.5<br>0.5  |        |        | A    |
| Repetitive Peak Forward Surge Current                               | I <sub>FRM</sub>                   | 625         |        |        | mA   |
| Power Dissipation   | P <sub>d</sub>                     | 200         |        |        | mW   |
| Thermal Resistance Junction to Ambient Air (Note 1)                 | R <sub>θJA</sub>                   | 625         |        |        | °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 2)                   | V <sub>(BR)R</sub> | 120<br>200<br>250 | —<br>—<br>— | V        | I <sub>R</sub> = 100μA  |
| Forward Voltage (Note 2)                             | V <sub>F</sub>     | —                 | 1.0<br>1.25 | V        | I <sub>F</sub> = 100mA<br>I <sub>F</sub> = 200mA  |
| Reverse Current @ Rated DC Blocking Voltage (Note 2) | I <sub>R</sub>     | —                 | 100<br>15   | nA<br>μA | T <sub>j</sub> = 25°C<br>T <sub>j</sub> = 100°C   |
| Total Capacitance                                    | C <sub>T</sub>     | —                 | 5.0         | 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,<br>I <sub>rr</sub> = 0.1 x I <sub>R</sub> , R <sub>L</sub> = 100Ω |

- Notes: 1. Part mounted on FR-4 PC board with minimum recommended pad layout, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.
2. Short duration test pulse used to minimize self-heating effect.

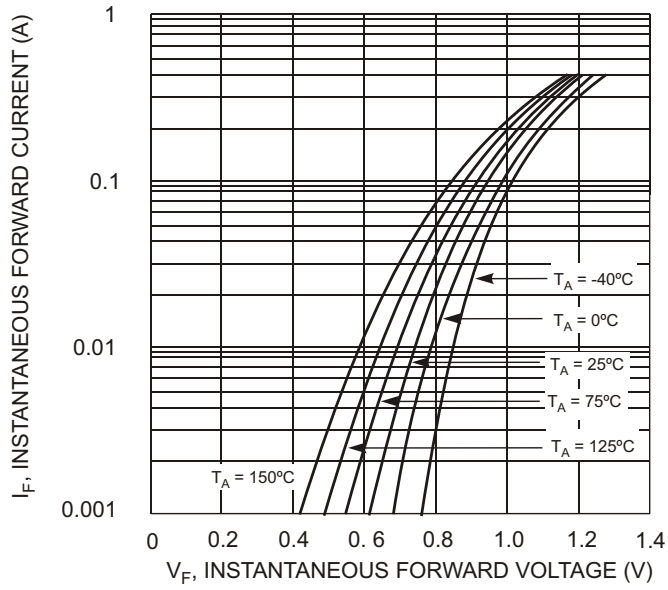


Fig. 1 Typical Forward Characteristics

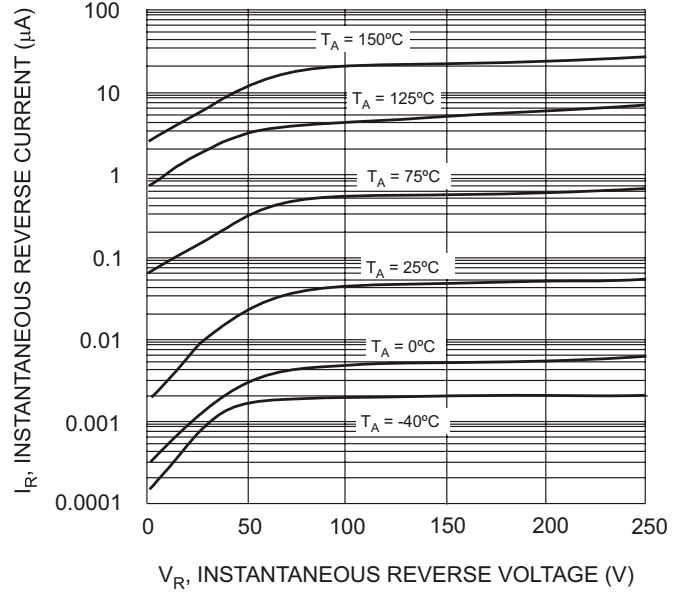


Fig. 2 Typical Reverse Characteristics

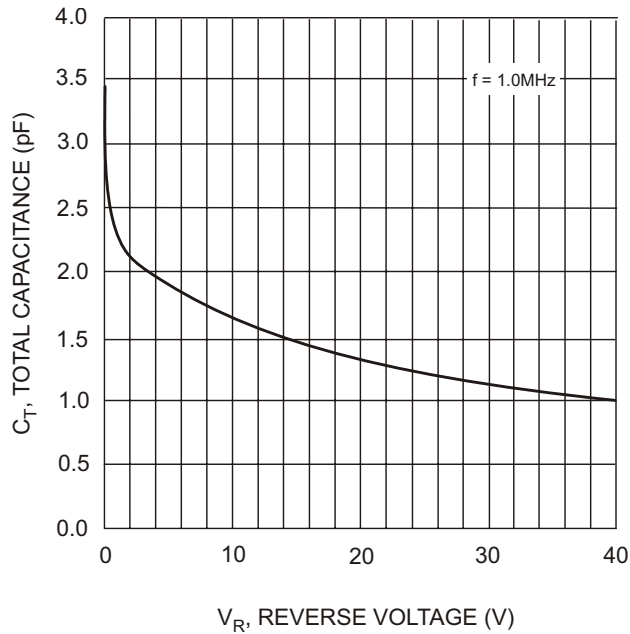


Fig. 3 Typical Capacitance vs. Reverse Voltage

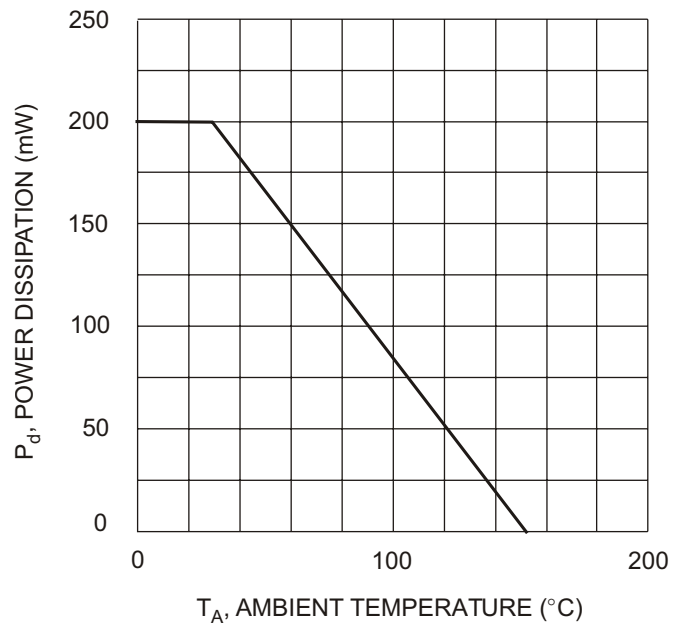


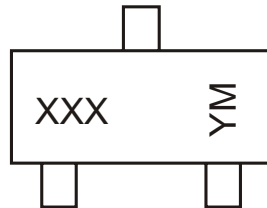
Fig. 4 Power Derating Curve, Total Package

## Ordering Information (Note 3)

| Device   | Packaging | Shipping         |
|----------|-----------|------------------|
| BAS19W-7 | SOT-323   | 3000/Tape & Reel |
| BAS20W-7 | SOT-323   | 3000/Tape & Reel |
| BAS21W-7 | SOT-323   | 3000/Tape & Reel |

Notes: 3. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

## Marking Information



XXX = Product Type Marking Code (See Page 1 Diagrams)  
 YM = Date Code Marking  
 Y = Year ex: N = 2002  
 M = Month ex: 9 = September

### Date Code Key

| Year | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|------|------|------|------|------|------|------|------|------|------|------|
| Code | L    | M    | 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   |