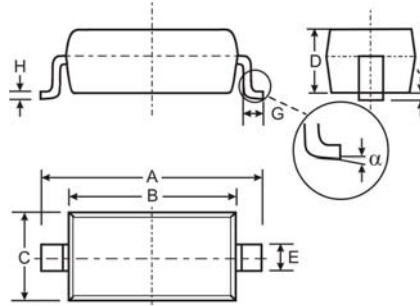


**Features**

- Low Forward Voltage Drop
- Fast Switching Time
- Surface Mount Package Ideally Suited for Automatic Insertion
- **Lead Free/RoHS Compliant Version (Note 3)**

**Mechanical Data**

- Case: SOD-123
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).
- Polarity: Cathode Band
- Marking Information: See Page 3
- Type Codes: BAT42W S7  
BAT43W S8
- Ordering Information: See Page 3
- Weight: 0.01 grams (approximate)



| SOD-123              |              |      |
|----------------------|--------------|------|
| Dim                  | Min          | Max  |
| A                    | 3.55         | 3.85 |
| B                    | 2.55         | 2.85 |
| C                    | 1.40         | 1.70 |
| D                    | —            | 1.35 |
| E                    | 0.45         | 0.65 |
|                      | 0.55 Typical |      |
| G                    | 0.25         | —    |
| H                    | 0.11 Typical |      |
| J                    | —            | 0.10 |
| α                    | 0°           | 8°   |
| All Dimensions in mm |              |      |

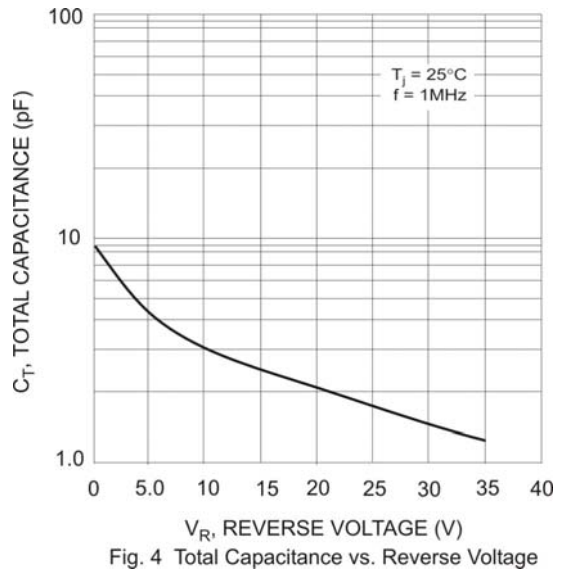
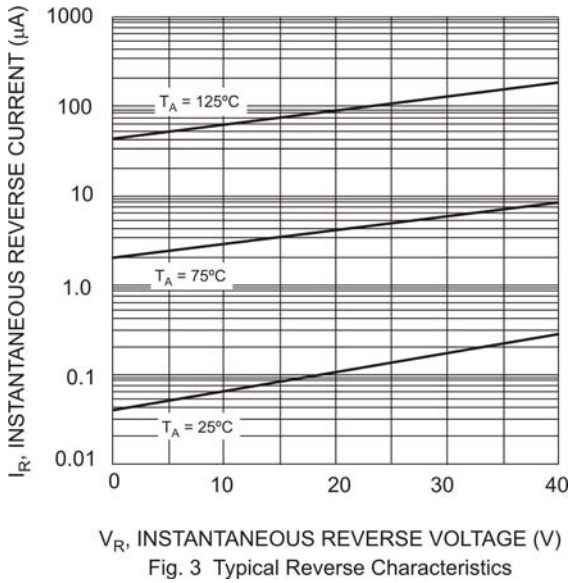
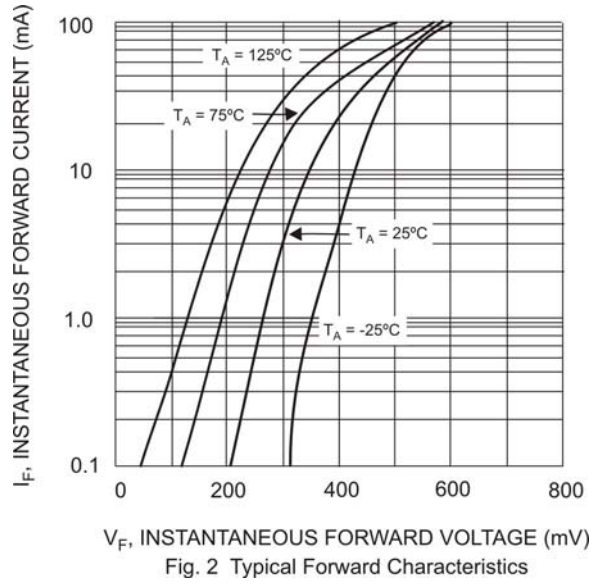
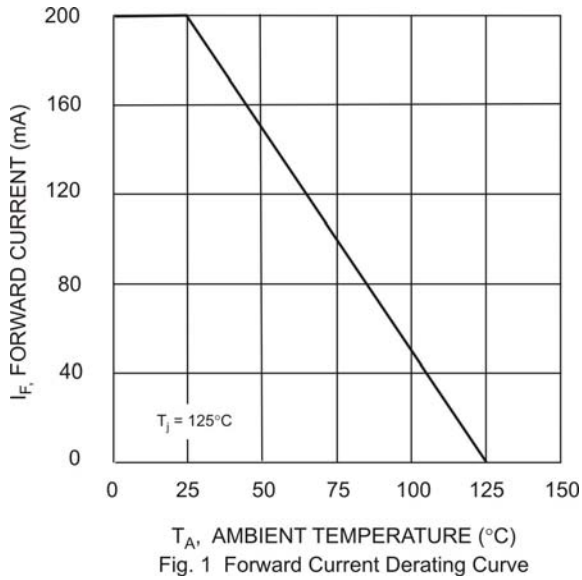
**Maximum Ratings** @T<sub>A</sub> = 25°C unless otherwise specified

| Characteristic                                      | Symbol                            | BAT42W / BAT43W | Unit |
|-----------------------------------------------------|-----------------------------------|-----------------|------|
| Peak Repetitive Reverse Voltage                     | V <sub>RRM</sub>                  | 30              | V    |
| Working Peak Reverse Voltage                        | V <sub>RWM</sub>                  |                 |      |
| DC Blocking Voltage                                 | V <sub>R</sub>                    |                 |      |
| RMS Reverse Voltage                                 | V <sub>R(RMS)</sub>               | 21              | V    |
| Forward Continuous Current (Note 1)                 | I <sub>FM</sub>                   | 200             | mA   |
| Repetitive Peak Forward Current (Note 1)            | I <sub>FRM</sub>                  | 500             | mA   |
| Non-Repetitive Peak Forward Surge Current           | I <sub>FSM</sub>                  | 4.0             | A    |
| Power Dissipation                                   | P <sub>d</sub>                    | 200             | mW   |
| Thermal Resistance Junction to Ambient Air (Note 1) | R <sub>θJA</sub>                  | 500             | °C/W |
| Operating and Storage Temperature Range             | T <sub>J</sub> , T <sub>STG</sub> | -55 to +125     | °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> | 30   | —    | V    | I <sub>R</sub> = 100μA                                                                                    |
| Forward Voltage Drop               | V <sub>FM</sub>    | —    | 1.0  | V    | I <sub>F</sub> = 200mA                                                                                    |
|                                    |                    | —    | 0.40 |      | I <sub>F</sub> = 10mA                                                                                     |
|                                    |                    | —    | 0.65 |      | I <sub>F</sub> = 50mA                                                                                     |
|                                    |                    | 0.26 | 0.33 |      | I <sub>F</sub> = 2.0mA                                                                                    |
|                                    |                    | —    | 0.45 |      | I <sub>F</sub> = 15mA                                                                                     |
| Peak Reverse Current (Note 2)      | I <sub>RM</sub>    | —    | 500  | nA   | V <sub>R</sub> = 25V                                                                                      |
|                                    |                    | —    | 100  | μA   | V <sub>R</sub> = 25V, T <sub>J</sub> = 100°C                                                              |
| Total Capacitance                  | C <sub>T</sub>     | —    | 10   | pF   | V <sub>R</sub> = 1.0V, f = 1.0MHz                                                                         |
| Reverse Recovery Time              | t <sub>rr</sub>    | —    | 5.0  | ns   | I <sub>F</sub> = I <sub>R</sub> = 10mA,<br>I <sub>tr</sub> = 0.1 x I <sub>R</sub> , R <sub>L</sub> = 100Ω |

- Notes:
1. 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>.
  2. Short duration pulse test used to minimize self-heating effect.
  3. No purposefully added lead.



## Ordering Information (Note 4)

| Device     | Packaging | Shipping         |
|------------|-----------|------------------|
| BAT42W-7-F | SOD-123   | 3000/Tape & Reel |
| BAT43W-7-F | SOD-123   | 3000/Tape & Reel |

Notes: 4. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

## Marking Information



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

### Data Code Key

| Year | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 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   |

### IMPORTANT NOTICE

Diodes Incorporated and its subsidiaries reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to any product herein. Diodes Incorporated does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others. The user of products in such applications shall assume all risks of such use and will agree to hold Diodes Incorporated and all the companies whose products are represented on our website, harmless against all damages.

### LIFE SUPPORT

Diodes Incorporated products are not authorized for use as critical components in life support devices or systems without the expressed written approval of the President of Diodes Incorporated.