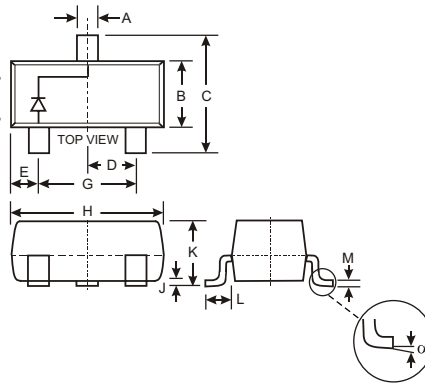


### Features

- Very Low Forward Voltage Drop
- High Conductance
- For Use in DC-DC Converter, PCMCIA, and Mobile Telecommunications Applications

### Mechanical Data

- Case: SOT-23, Molded Plastic
- UL Flammability Classification Rating 94V-0
- Moisture sensitivity: Level 1 per J-STD-020A
- Terminals: Solderable per MIL-STD-202, Method 208
- Also Available in Lead Free Plating (Matte Tin Finish). Please see Ordering Information, Note 4, on Page 3
- Polarity: See Diagram
- Weight: 0.008 grams (approx.)
- Marking: K77 or K79 and Date Code, See Page 3



| SOT-23               |       |       |
|----------------------|-------|-------|
| Dim                  | Min   | Max   |
| A                    | 0.37  | 0.51  |
| B                    | 1.20  | 1.40  |
| C                    | 2.30  | 2.50  |
| D                    | 0.89  | 1.03  |
| E                    | 0.45  | 0.60  |
| G                    | 1.78  | 2.05  |
| H                    | 2.80  | 3.00  |
| J                    | 0.013 | 0.10  |
| K                    | 0.903 | 1.10  |
| L                    | 0.45  | 0.61  |
| M                    | 0.085 | 0.180 |
| α                    | 0°    | 8°    |
| All Dimensions in mm |       |       |

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

| Characteristic                                                                                                        | Symbol                                                 | Value       | Unit |
|-----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|-------------|------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage                                | V <sub>RRM</sub><br>V <sub>RWM</sub><br>V <sub>R</sub> | 40          | V    |
| RMS Reverse Voltage                                                                                                   | V <sub>R(RMS)</sub>                                    | 28          | V    |
| Average Rectified Current (Note 1)                                                                                    | I <sub>O</sub>                                         | 0.75        | A    |
| Non-Repetitive Peak Forward Surge Current<br>8.3ms Single half sine-wave superimposed on rated load<br>(JEDEC Method) | I <sub>FSM</sub>                                       | 5.5         | A    |
| Power Dissipation (Note 1)                                                                                            | P <sub>d</sub>                                         | 350         | mW   |
| Typical Thermal Resistance, Junction to Ambient Air (Note 1)                                                          | R <sub>θJA</sub>                                       | 286         | °C/W |
| Operating and Storage Temperature Range                                                                               | T <sub>J</sub> , T <sub>STG</sub>                      | -40 to +125 | °C   |

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

| Characteristic                     | Symbol             | Min | Typ                                           | Max                                           | Unit     | Test Condition                                                                                                                                                                      |
|------------------------------------|--------------------|-----|-----------------------------------------------|-----------------------------------------------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Reverse Breakdown Voltage (Note 2) | V <sub>(BR)R</sub> | 40  | 45                                            | —                                             | V        | I <sub>R</sub> = 300uA                                                                                                                                                              |
| Forward Voltage (Note 2)           | V <sub>F</sub>     | —   | 225<br>235<br>290<br>340<br>390<br>420<br>475 | 280<br>310<br>350<br>420<br>490<br>540<br>650 | mV       | I <sub>F</sub> = 50mA<br>I <sub>F</sub> = 100mA<br>I <sub>F</sub> = 250mA<br>I <sub>F</sub> = 500mA<br>I <sub>F</sub> = 750mA<br>I <sub>F</sub> = 1000mA<br>I <sub>F</sub> = 1500mA |
| Reverse Current (Note 2)           | I <sub>R</sub>     | —   | 50                                            | 100                                           | μA       | V <sub>R</sub> = 30V                                                                                                                                                                |
| Total Capacitance                  | C <sub>T</sub>     | —   | 175<br>25                                     | —                                             | pF<br>pF | V <sub>R</sub> = 0V, f = 1.0MHz<br>V <sub>R</sub> = 25V, f = 1.0MHz                                                                                                                 |

- Notes:
1. Part 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. Short duration test pulse used to minimize self-heating effect.

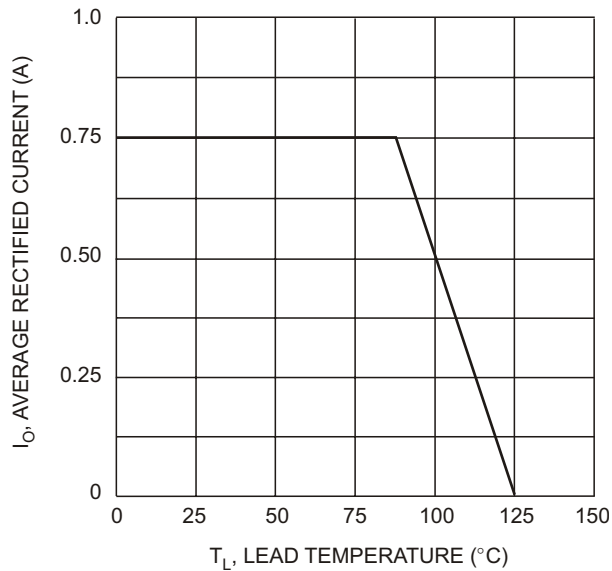


Fig. 1 Forward Current Derating Curve

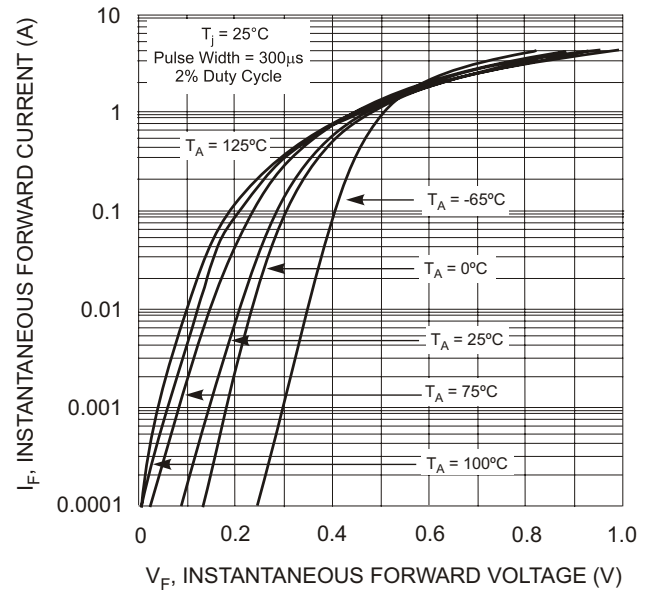


Fig. 2 Typical Forward Characteristics

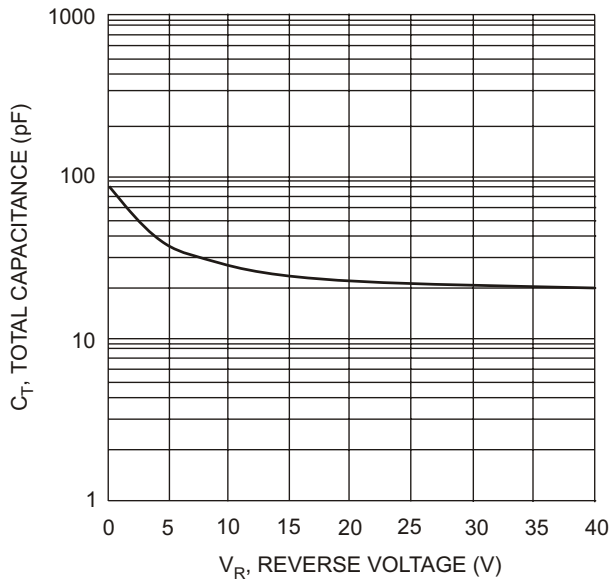


Fig. 3 Total Capacitance vs Reverse Voltage

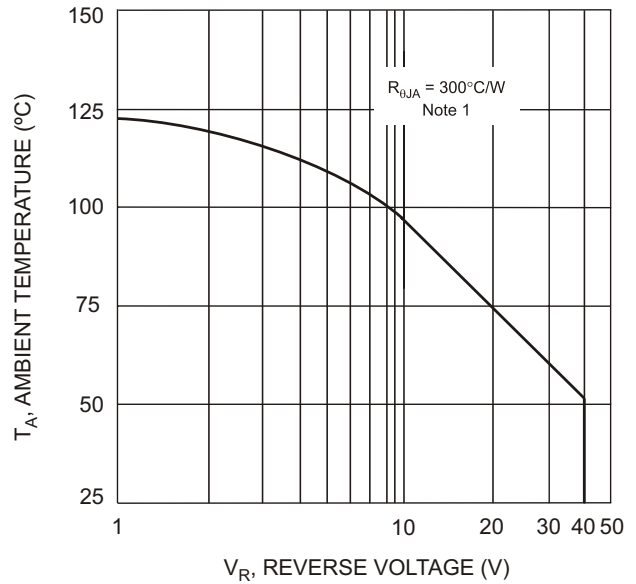


Fig. 4 Typical Safe Operating Area

Note: 1. Assumed application thermal conditions.  
 $R_{\theta JA}$  varies depending on application.

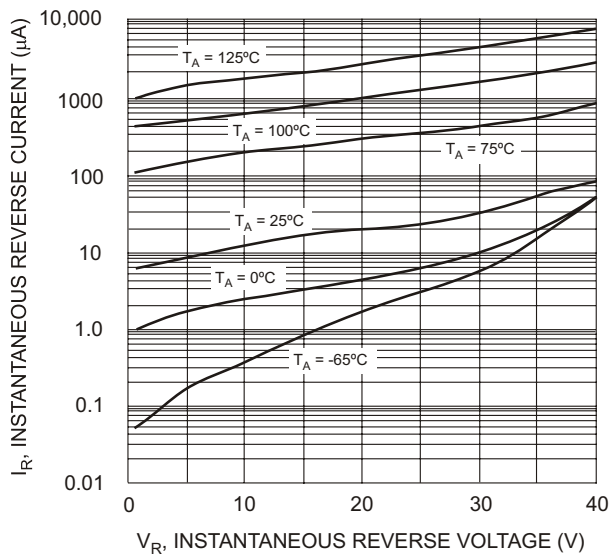


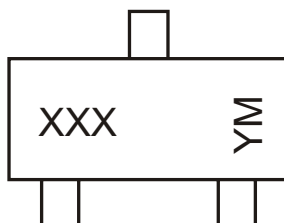
Fig. 5 Typical Reverse Characteristics

## Ordering Information (Note 3)

| Device   | Packaging | Shipping         |
|----------|-----------|------------------|
| BAT750-7 | SOT-23    | 3000/Tape & Reel |

- Notes:
- For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.
  - For Lead Free version (with Lead Free terminal finish) part number, please add "-F" suffix to part number above.  
Example: BAT750-7-F.

## Marking Information



XXX = 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 |
|------|------|------|------|------|------|------|------|------|------|
| Code | 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   |