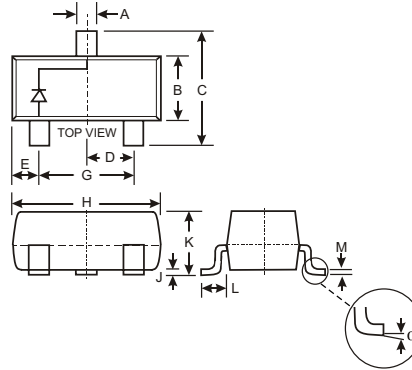


### Features

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

### Mechanical Data

- Case: SOT-23, 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
- Polarity: See Diagram
- Marking: KA3 (See Page 2)
- Weight: 0.008 grams (approx.)



| 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 |
| $\alpha$             | 0°    | 8°    |
| All Dimensions in mm |       |       |

### Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

| Characteristic                                                                          | Symbol                          | MMBD4448    | Unit               |
|-----------------------------------------------------------------------------------------|---------------------------------|-------------|--------------------|
| Non-Repetitive Peak Reverse Voltage                                                     | $V_{RM}$                        | 100         | V                  |
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage  | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | 75          | V                  |
| RMS Reverse Voltage                                                                     | $V_{R(RMS)}$                    | 53          | V                  |
| Forward Continuous Current (Note 1)                                                     | $I_{FM}$                        | 500         | mA                 |
| Average Rectified Output Current (Note 1)                                               | $I_O$                           | 250         | mA                 |
| Non-Repetitive Peak Forward Surge Current @ $t = 1.0\mu\text{s}$<br>@ $t = 1.0\text{s}$ | $I_{FSM}$                       | 4.0<br>2.0  | A                  |
| Power Dissipation (Note 1)                                                              | $P_d$                           | 350         | mW                 |
| Thermal Resistance Junction to Ambient Air (Note 1)                                     | $R_{\theta JA}$                 | 357         | $^\circ\text{C/W}$ |
| Operating and Storage Temperature Range                                                 | $T_j, T_{STG}$                  | -65 to +150 | $^\circ\text{C}$   |

### Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

| Characteristic                     | Symbol      | Min                 | Max                          | Unit                                                  | Test Condition                                                                                                                         |
|------------------------------------|-------------|---------------------|------------------------------|-------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| Reverse Breakdown Voltage (Note 2) | $V_{(BR)R}$ | 75                  | —                            | V                                                     | $I_R = 2.5\mu\text{A}$                                                                                                                 |
| Forward Voltage (Note 2)           | $V_F$       | 0.62<br>—<br>—<br>— | 0.72<br>0.855<br>1.0<br>1.25 | V                                                     | $I_F = 5.0\text{mA}$<br>$I_F = 10\text{mA}$<br>$I_F = 100\text{mA}$<br>$I_F = 150\text{mA}$                                            |
| Reverse Current (Note 2)           | $I_R$       | —                   | 2.5<br>50<br>30<br>25        | $\mu\text{A}$<br>$\mu\text{A}$<br>$\mu\text{A}$<br>nA | $V_R = 75\text{V}$<br>$V_R = 75\text{V}, T_j = 150^\circ\text{C}$<br>$V_R = 25\text{V}, T_j = 150^\circ\text{C}$<br>$V_R = 20\text{V}$ |
| Total Capacitance                  | $C_T$       | —                   | 4.0                          | pF                                                    | $V_R = 0, f = 1.0\text{MHz}$                                                                                                           |
| Reverse Recovery Time              | $t_{rr}$    | —                   | 4.0                          | ns                                                    | $I_F = I_R = 10\text{mA}$ ,<br>$I_{rr} = 0.1 \times I_R, R_L = 100\Omega$                                                              |

- 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 test pulse used to minimize self-heating effect.

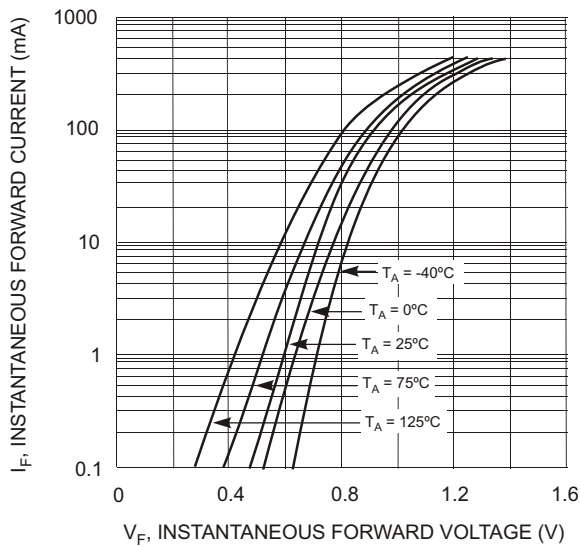


Fig. 1 Typical Forward Characteristics

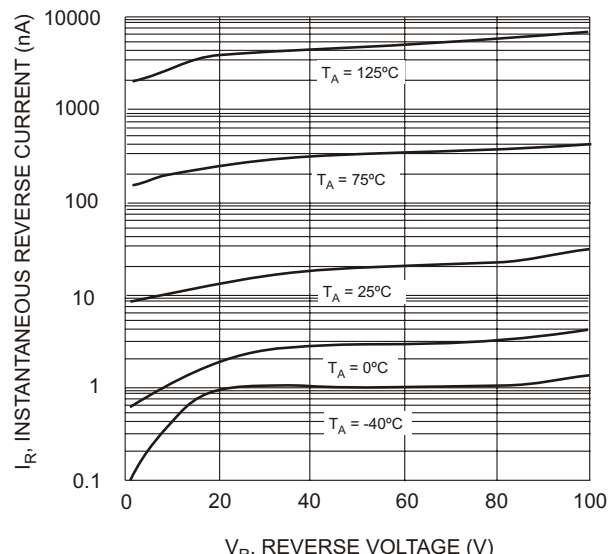


Fig. 2 Typical Reverse Characteristics

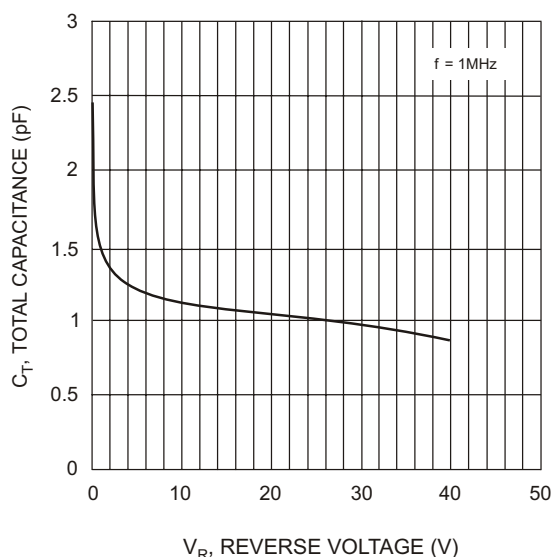


Fig. 3 Typical Capacitance vs. Reverse Voltage

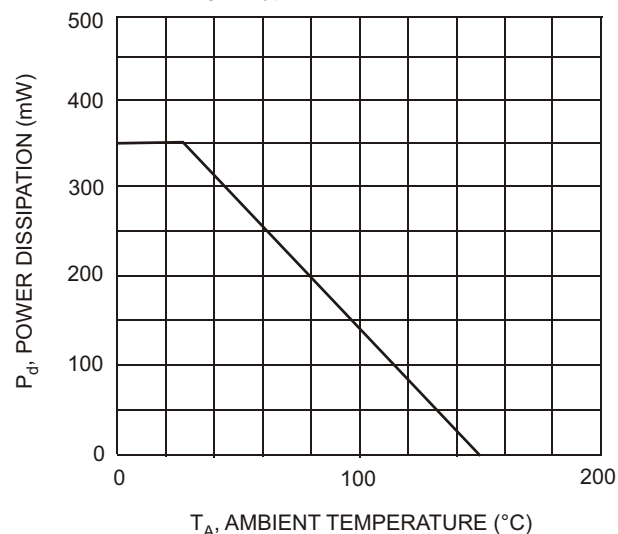

 T<sub>A</sub>, AMBIENT TEMPERATURE (°C)

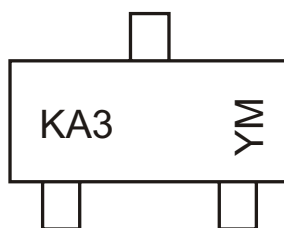
Fig. 4, Max Power Dissipation vs Ambient Temperature

## Ordering Information (Note 3)

| Device     | Packaging | Shipping         |
|------------|-----------|------------------|
| MMBD4448-7 | SOT-23    | 3000/Tape & Reel |

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

## Marking Information



KA3 = Product Type Marking Code  
 YM = Date Code Marking  
 Y = Year ex: N = 2002  
 M = Month ex: 9 = September

Date Code Key

| Year | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|------|------|------|------|------|------|------|------|------|------|------|------|
| Code | K    | 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   |