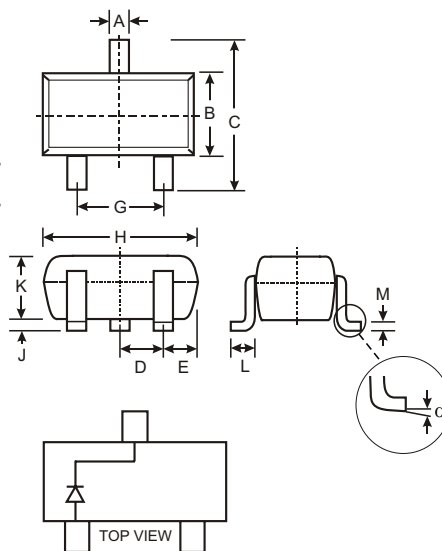


### Features

- Fast Switching Speed
- Ultra-Small Surface Mount Package
- For General Purpose Switching Applications
- High Conductance
- Also Available in Lead Free Version

### 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
- Also Available in Lead Free Plating (Matte Tin Finish). Please See Ordering Information, Note 4, on Page 3
- Polarity: See Diagram
- Marking: KA2, KT1 (See page 3)



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

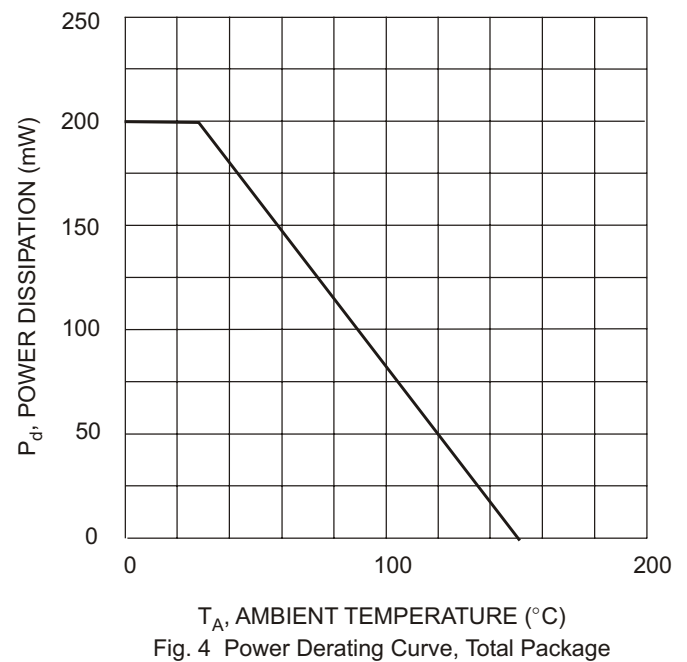
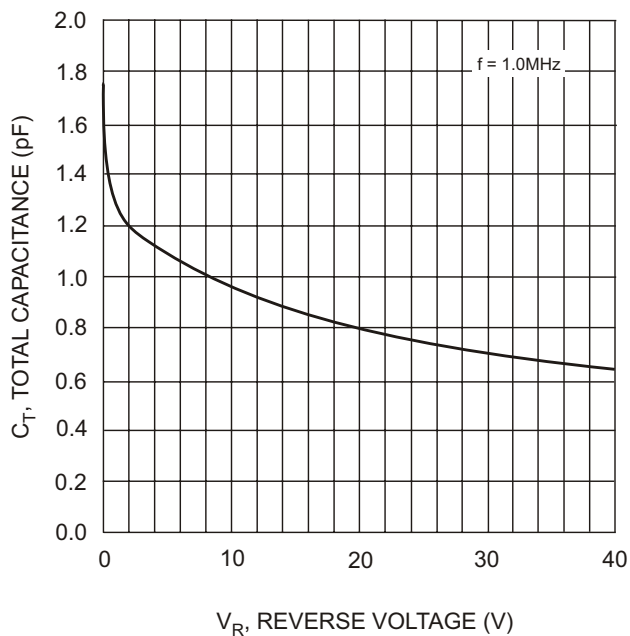
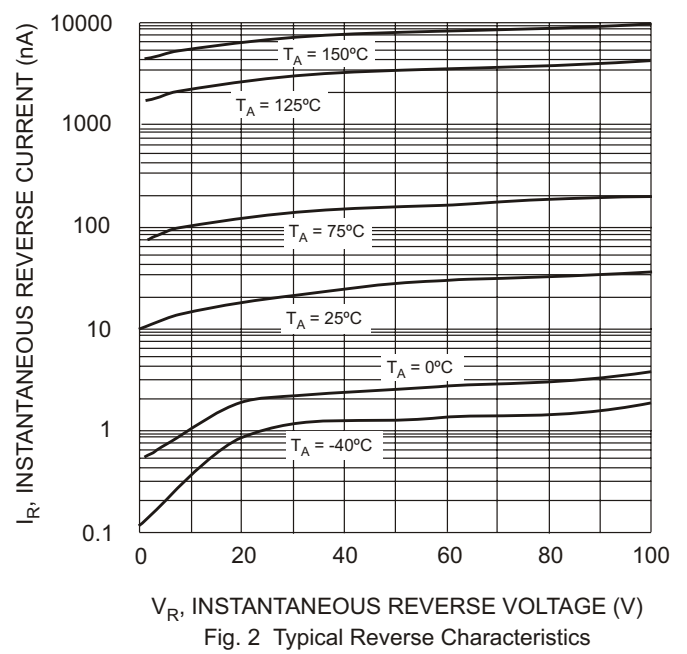
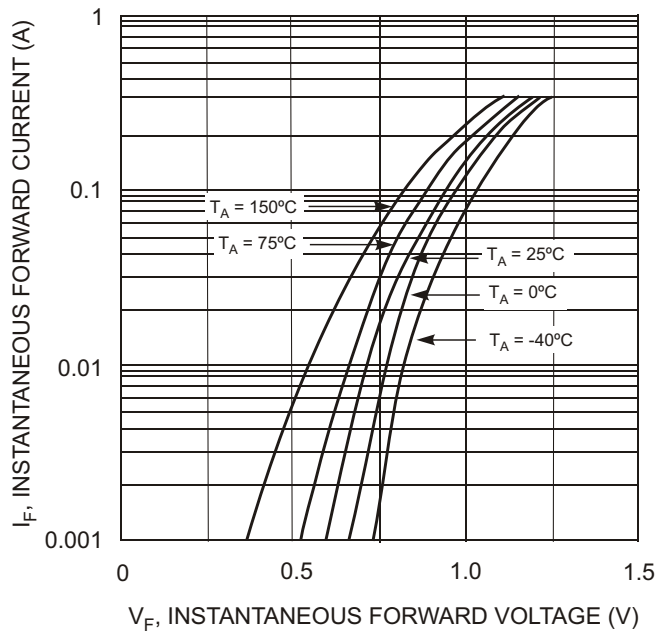
### Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

| Characteristic                                                                          | Symbol                          | Value       | 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)                                                     | $I_{FM}$                        | 300         | mA                 |
| Average Rectified Output Current (Note 1)                                               | $I_O$                           | 150         | mA                 |
| Non-Repetitive Peak Forward Surge Current @ $t = 1.0\mu\text{s}$<br>@ $t = 1.0\text{s}$ | $I_{FSM}$                       | 2.0<br>1.0  | A                  |
| Power Dissipation (Note 1)                                                              | $P_d$                           | 200         | mW                 |
| Thermal Resistance Junction to Ambient Air (Note 1)                                     | $R_{\theta JA}$                 | 625         | $^\circ\text{C/W}$ |
| 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                                                     | $I_R = 1.0\mu\text{A}$                                                                                                                 |
| Forward Voltage (Note 2)           | $V_F$       | —   | 0.715<br>0.855<br>1.0<br>1.25 | V                                                     | $I_F = 1.0\text{mA}$<br>$I_F = 10\text{mA}$<br>$I_F = 50\text{mA}$<br>$I_F = 150\text{mA}$                                             |
| Reverse Current (Note 2)           | $I_R$       | —   | 1.0<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                  | $C_T$       | —   | 2.0                           | 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. Mounted on FR4 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.

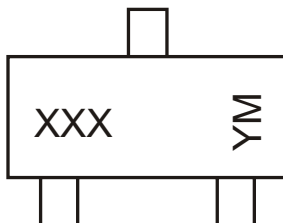


## Ordering Information (Note 3)

| Device      | Packaging | Shipping         |
|-------------|-----------|------------------|
| MMBD4148W-7 | SOT-323   | 3000/Tape & Reel |
| BAS16W-7    | SOT-323   | 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: BAS16W-7-F.

## Marking Information



XXX = Product Type Marking Code (See Page 1)  
 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   |