

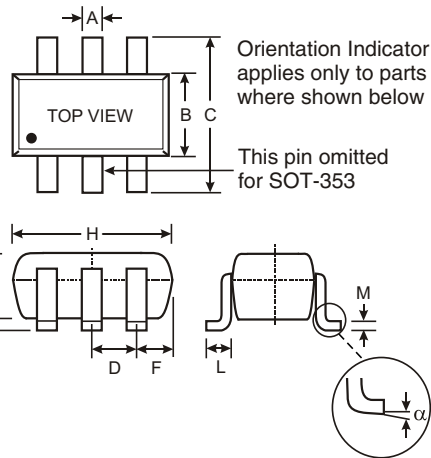
## SURFACE MOUNT FAST SWITCHING DIODE ARRAY

### Features

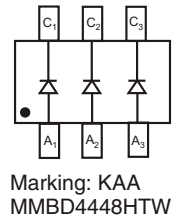
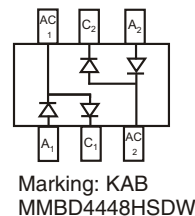
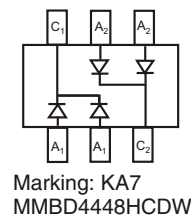
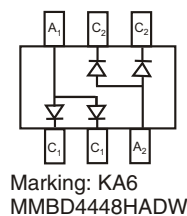
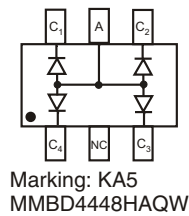
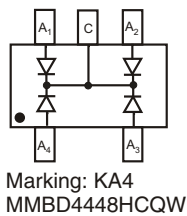
- Fast Switching Speed
- Ultra-Small Surface Mount Package
- For General Purpose Switching Applications
- High Conductance
- Lead Free/RoHS Compliant (Note 2)**
- Qualified to AEC-Q101 Standards for High Reliability**

### Mechanical Data

- Case: SOT-353 or SOT-363
- 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). Please see Ordering Information, Note 5, on Page 3
- Orientation: See Diagrams Below
- Marking: See Diagrams Below & Page 3
- Weight: 0.006 grams (approximate)



| SOT-363/SOT-353      |              |      |
|----------------------|--------------|------|
| Dim                  | Min          | Max  |
| A                    | 0.10         | 0.30 |
| B                    | 1.15         | 1.35 |
| C                    | 2.00         | 2.20 |
| D                    | 0.65 Nominal |      |
| F                    | 0.30         | 0.40 |
| H                    | 1.80         | 2.20 |
| J                    |              | 0.10 |
| K                    | 0.90         | 1.00 |
| L                    | 0.25         | 0.40 |
| M                    | 0.10         | 0.25 |
|                      | 0            | 8    |
| All Dimensions in mm |              |      |



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

| Characteristic                                                                         | Symbol                                                 | Value       | Unit |
|----------------------------------------------------------------------------------------|--------------------------------------------------------|-------------|------|
| Non-Repetitive Peak Reverse Voltage                                                    | V <sub>RM</sub>                                        | 100         | V    |
| 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> | 80          | V    |
| RMS Reverse Voltage                                                                    | V <sub>R(RMS)</sub>                                    | 57          | V    |
| Forward Continuous Current (Note 1)                                                    | I <sub>FM</sub>                                        | 500         | mA   |
| Average Rectified Output Current (Note 1)                                              | I <sub>O</sub>                                         | 250         | mA   |
| Non-Repetitive Peak Forward Surge Current @ t = 1.0 s<br>@ t = 1.0s                    | I <sub>FSM</sub>                                       | 4.0<br>2.0  | A    |
| Power Dissipation (Note 1)                                                             | P <sub>d</sub>                                         | 200         | mW   |
| Thermal Resistant Junction to Ambient Air (Note 1)                                     | R <sub>JA</sub>                                        | 625         | °C/W |
| Operating and Storage Temperature Range                                                | T <sub>J</sub> , T <sub>STG</sub>                      | -65 to +150 | °C   |

- Notes:
- Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch; pad layout as shown on Diodes Inc. suggested pad layout document AP02001, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.
  - No purposefully added lead.

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

| Characteristic                     | Symbol      | Min  | Max                          | Unit               | Test Condition                                                                                                                         |
|------------------------------------|-------------|------|------------------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| Reverse Breakdown Voltage (Note 3) | $V_{(BR)R}$ | 80   |                              | V                  | $I_R = 100\text{ }\mu\text{A}$                                                                                                         |
| Forward Voltage                    | $V_F$       | 0.62 | 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 3)           | $I_R$       |      | 100<br>50<br>30<br>25        | nA<br>A<br>A<br>nA | $V_R = 70\text{V}$<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                  | $C_T$       |      | 3.5                          | pF                 | $V_R = 6\text{V}, f = 1.0\text{MHz}$                                                                                                   |
| Reverse Recovery Time              | $t_{rr}$    |      | 4.0                          | ns                 | $V_R = 6\text{V}, I_F = 5\text{mA}$                                                                                                    |

Notes: 3. Short duration test pulse used to minimize self-heating effect.

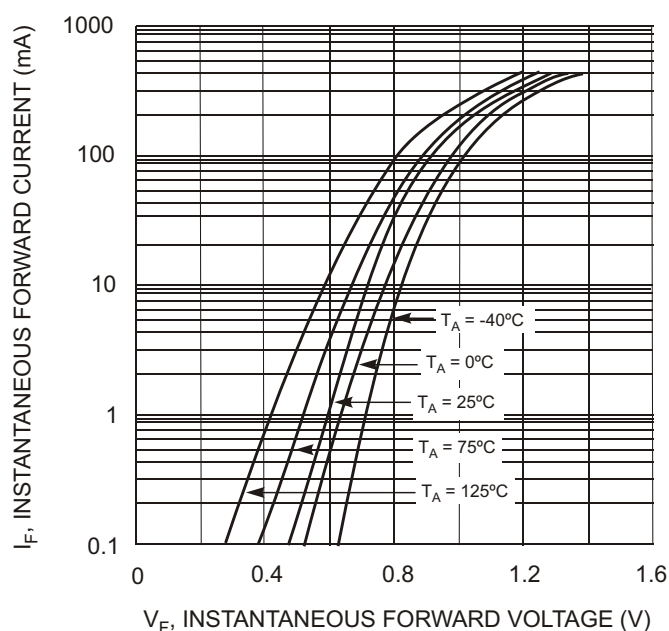


Fig. 1 Typical Forward Characteristics

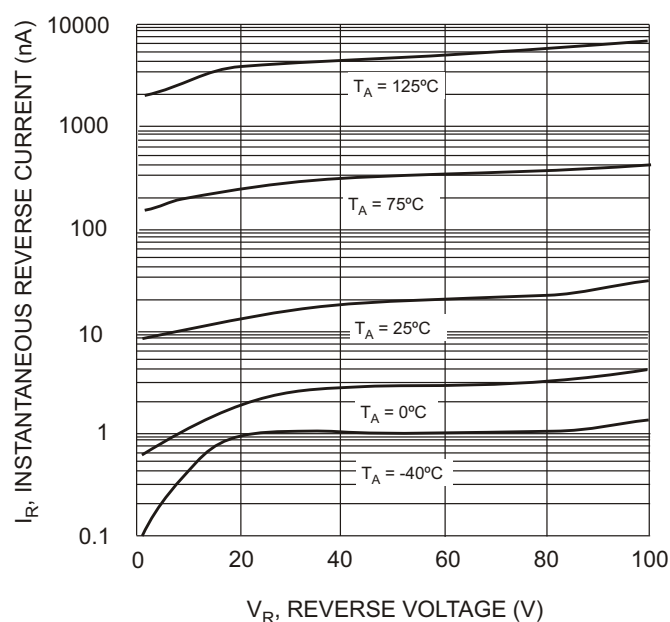


Fig. 2 Typical Reverse Characteristics

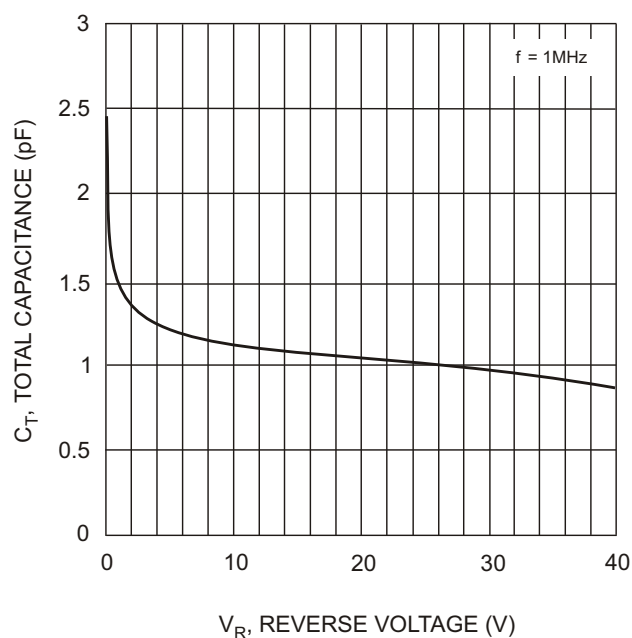


Fig. 3 Typical Capacitance vs. Reverse Voltage

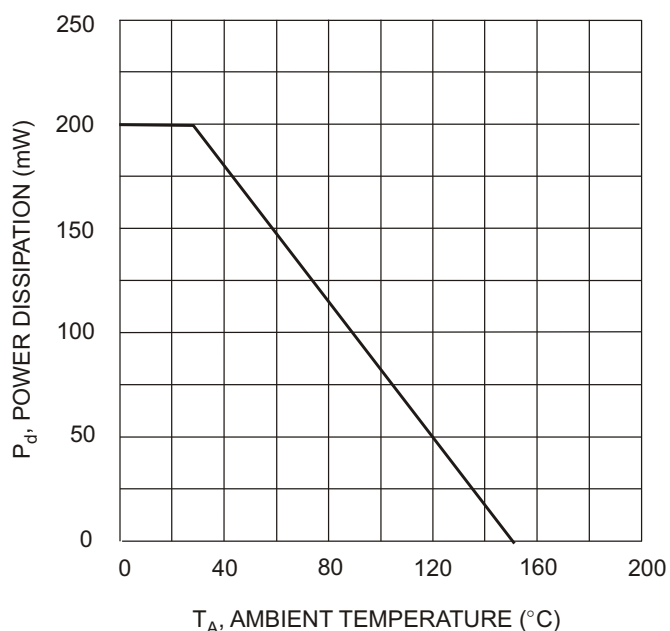
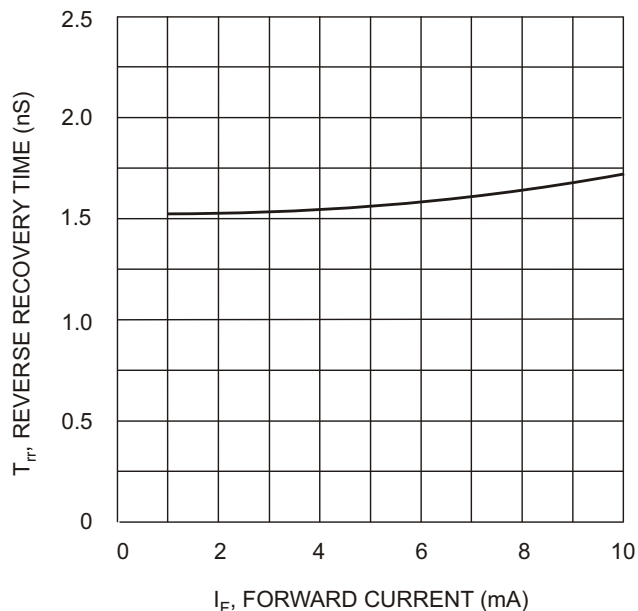


Fig. 4 Power Derating Curve, Total Package

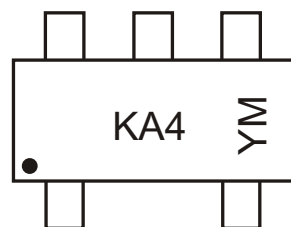


## Ordering Information (Note 4)

| Device           | Packaging | Shipping         |
|------------------|-----------|------------------|
| MMBD4448HADW-7-F | SOT-363   | 3000/Tape & Reel |
| MMBD4448HAQW-7-F | SOT-363   | 3000/Tape & Reel |
| MMBD4448HCDW-7-F | SOT-363   | 3000/Tape & Reel |
| MMBD4448HCQW-7-F | SOT-353   | 3000/Tape & Reel |
| MMBD4448HSDW-7-F | SOT-363   | 3000/Tape & Reel |
| MMBD4448HTW-7-F  | SOT-363   | 3000/Tape & Reel |

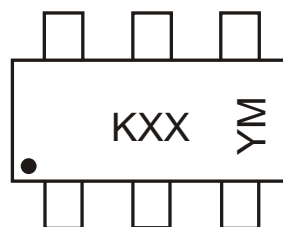
Notes: 4. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

## Marking Information



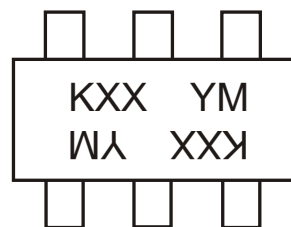
SOT-353

KA4 = Product Type Marking Code,  
 KA4 = MMBD4448HCQW  
 YM = Date Code Marking  
 Y = Year ex: N = 2002  
 M = Month ex: 9 = September



SOT-363

KXX = Product Type Marking Code,  
 ex. KA5 = MMBD4448HAQW  
 KAA = MMBD4448HTW  
 YM = Date Code Marking  
 Y = Year ex: N = 2002  
 M = Month ex: 9 = September



SOT-363

KXX = Product Type Marking Code, ex. KA6 = MMBD4448HADW  
 KA7 = MMBD4448HCDW  
 KAB = MMBD4448HSDW

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 | 2010 | 2011 | 2012 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Code | L    | M    | N    | P    | R    | S    | T    | U    | V    | W    | X    | Y    | Z    |

| 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   |

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