

SURFACE MOUNT FAST SWITCHING DIODE ARRAY

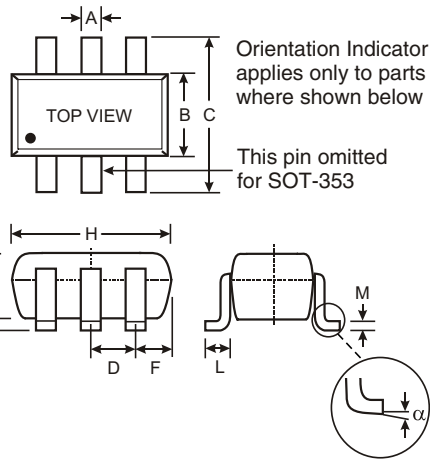
NEW PRODUCT

Features

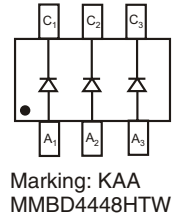
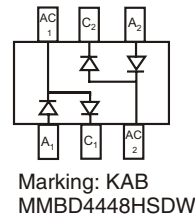
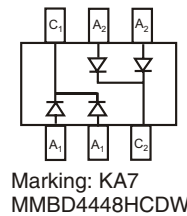
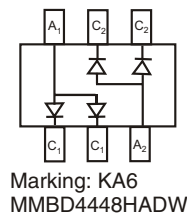
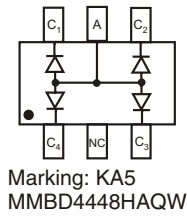
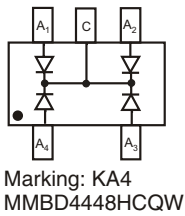
- Fast Switching Speed
- Ultra-Small Surface Mount Package
- For General Purpose Switching Applications
- High Conductance
- Available in Lead Free/RoHS Compliant Version (Note 2)

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
- Also Available in 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 (approx.)



| 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 |
| α | 0° | 8° |
| All Dimensions in mm | | |



Maximum Ratings @ T_A = 25°C unless otherwise specified

| Characteristic | Symbol | Value | Unit |
|--|--|-------------|------|
| Non-Repetitive Peak Reverse Voltage | V _{RM} | 100 | V |
| Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage | V _{RRM} V _{RWM} V _R | 80 | V |
| RMS Reverse Voltage | V _{R(RMS)} | 57 | 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 = 1.0μs @ t = 1.0s | I _{FSM} | 4.0 2.0 | A |
| Power Dissipation (Note 1) | P _d | 200 | mW |
| Thermal Resistant Junction to Ambient Air (Note 1) | R _{θJA} | 625 | °C/W |
| Operating and Storage Temperature Range | T _j , T _{STG} | -65 to +150 | °C |

- Notes:
1. 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>.
 2. 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 | $I_R = 100\mu\text{A}$ |
| Forward Voltage (Note 3) | V_F | 0.62 | 0.72 0.855 1.0 1.25 | V | $I_F = 5.0\text{mA}$ $I_F = 10\text{mA}$ $I_F = 100\text{mA}$ $I_F = 150\text{mA}$ |
| Reverse Current (Note 3) | I_R | — | 100 50 30 25 | nA μA μA nA | $V_R = 70\text{V}$ $V_R = 75\text{V}, T_j = 150^\circ\text{C}$ $V_R = 25\text{V}, T_j = 150^\circ\text{C}$ $V_R = 20\text{V}$ |
| 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.

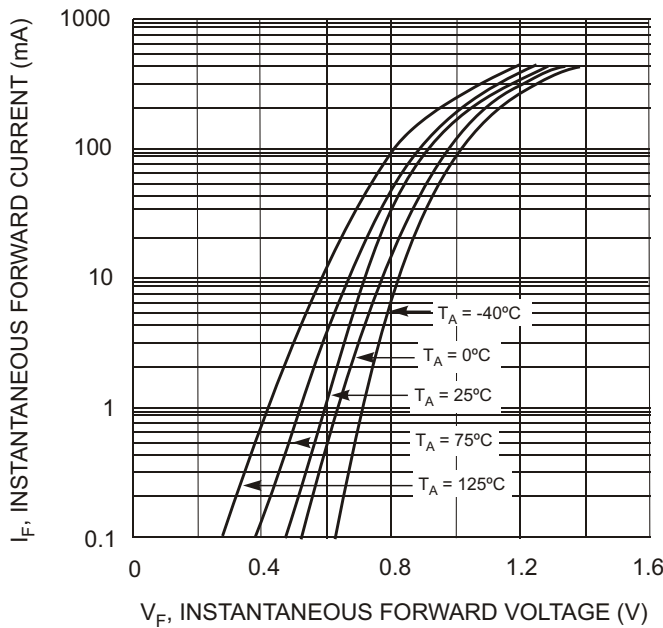


Fig. 1 Typical Forward Characteristics

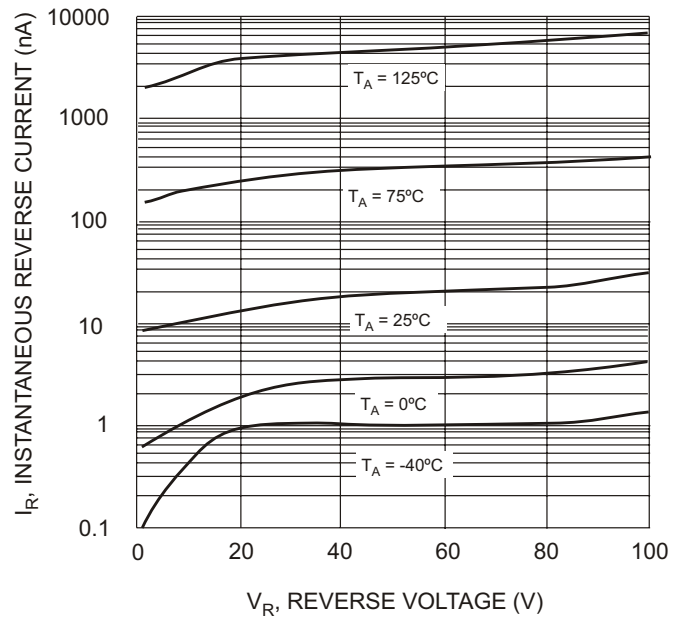


Fig. 2 Typical Reverse Characteristics

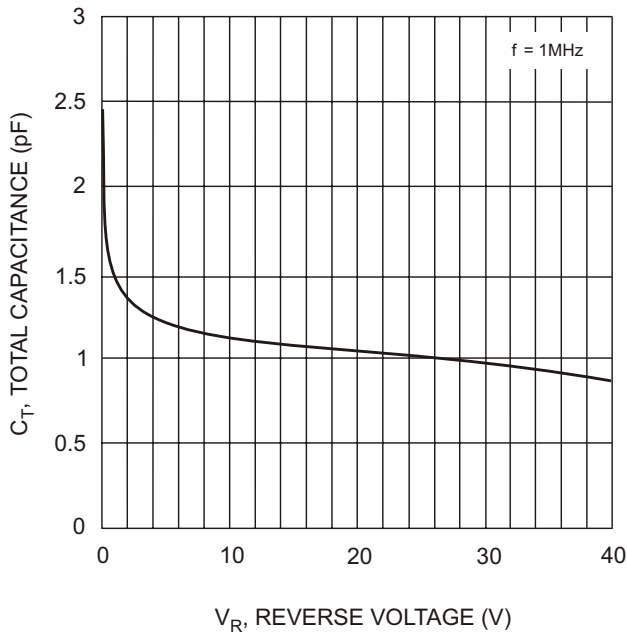


Fig. 3 Typical Capacitance vs. Reverse Voltage

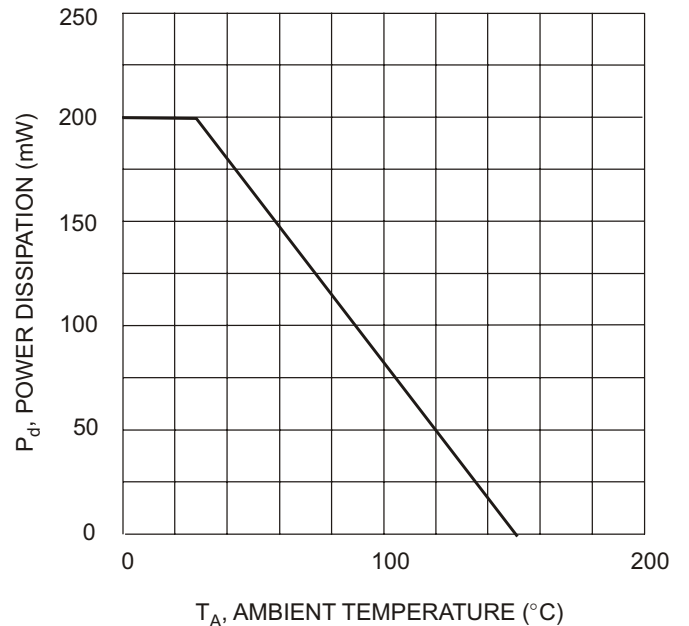


Fig. 4 Power Derating Curve, Total Package

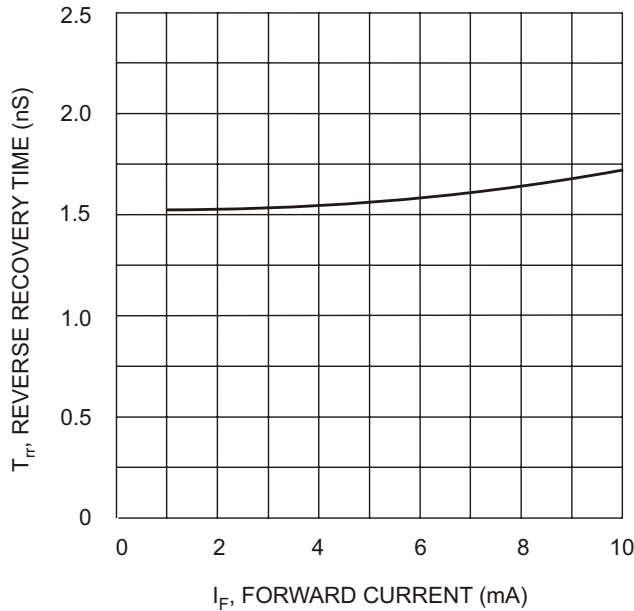


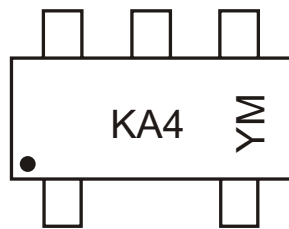
Fig. 5 Reverse Recovery Time vs. Forward Current

Ordering Information (Note 4)

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

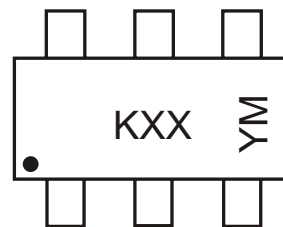
- Notes: 4. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.
 5. For Lead Free/RoHS Compliant version part number, please add "-F" suffix to the part number above. Example: MMBD4448HTW-7-F.

Marking Information



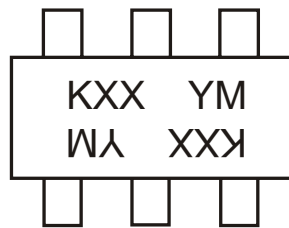
SOT-353

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 |
|------|------|------|------|------|------|------|------|------|------|------|
| 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 |