

**SURFACE MOUNT FAST SWITCHING DIODE ARRAY**

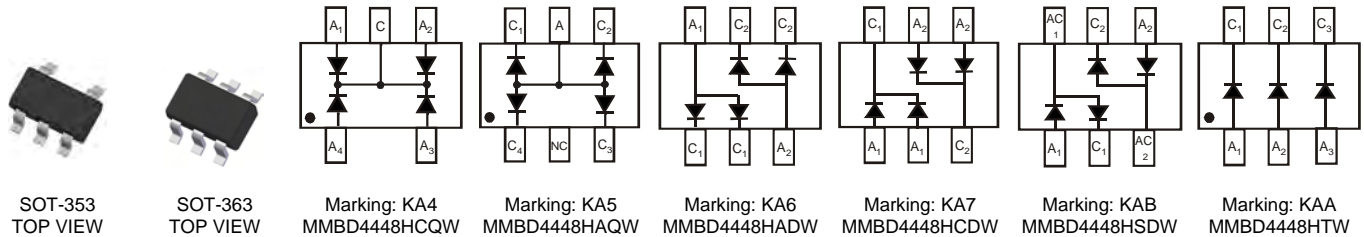
**Features**

- 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**
- **"Green" Device (Note 3 and 4)**

**Mechanical Data**

- Case: SOT-353 or SOT-363
- Case Material: Molded Plastic, "Green" Molding Compound. 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 6, Page 3
- Orientation: See Diagrams Below
- Marking Information: See Diagrams Below & Page 3
- Weight: 0.006 grams (approximate)

SOT-353/SOT-363



**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	V <sub>RRM</sub>	80	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>R</sub>		
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	I <sub>FSM</sub>	@ t = 1.0μs	4.0
		@ t = 1.0s	2.0

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 1)	P <sub>d</sub>	200	mW
Thermal Resistant Junction to Ambient Air (Note 1)	R <sub>θJA</sub>	625	°C/W
Operating and Storage Temperature Range	T <sub>j</sub> , T <sub>STG</sub>	-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.
  3. Diodes Inc.'s "Green" policy can be found on our website at [http://www.diodes.com/products/lead\\_free/index.php](http://www.diodes.com/products/lead_free/index.php).
  4. Product manufactured with Date Code UO (week 40, 2007) and newer are built with Green Molding Compound. Product manufactured prior to Date Code UO are built with Non-Green Molding Compound and may contain Halogens or Sb<sub>2</sub>O<sub>3</sub> Fire Retardants.

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

Characteristic	Symbol	Min	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 5)	V <sub>(BR)R</sub>	80	—	V	I <sub>R</sub> = 100μA
Forward Voltage	V <sub>F</sub>	0.62	0.72 0.855 1.0 1.25	V	I <sub>F</sub> = 5.0mA I <sub>F</sub> = 10mA I <sub>F</sub> = 100mA I <sub>F</sub> = 150mA
Reverse Current (Note 5)	I <sub>R</sub>	—	100 50 30 25	nA μA μA nA	V <sub>R</sub> = 70V V <sub>R</sub> = 75V, T <sub>i</sub> = 150°C V <sub>R</sub> = 25V, T <sub>i</sub> = 150°C V <sub>R</sub> = 20V
Total Capacitance	C <sub>T</sub>	—	3.5	pF	V <sub>R</sub> = 6V, f = 1.0MHz
Reverse Recovery Time	t <sub>rr</sub>	—	4.0	ns	V <sub>R</sub> = 6V, I <sub>F</sub> = 5mA

Notes: 5. Short duration pulse test used to minimize self-heating effect.

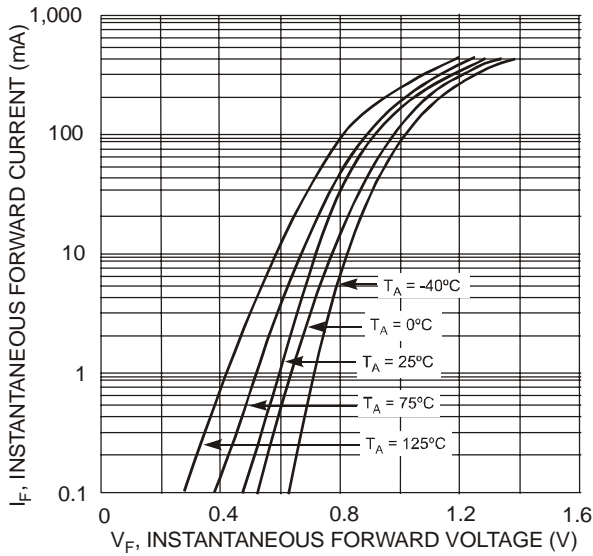


Fig. 1 Typical Forward Characteristics

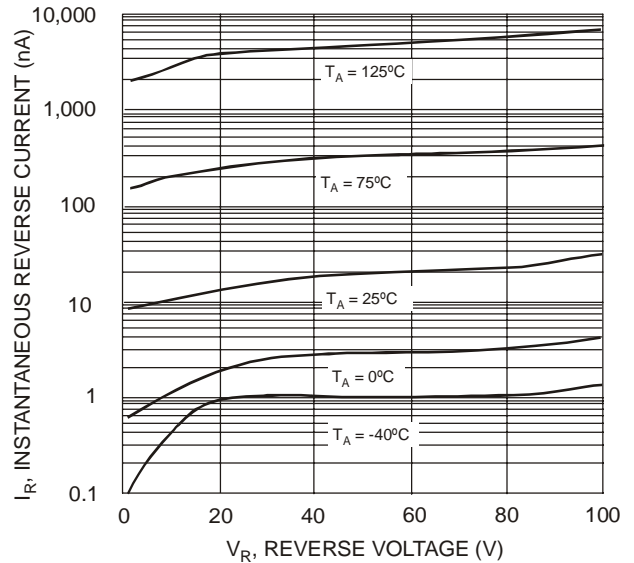


Fig. 2 Typical Reverse Characteristics

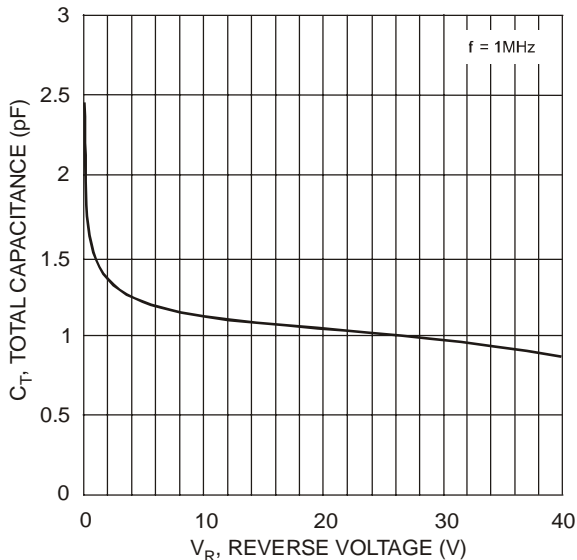


Fig. 3 Typical Capacitance vs. Reverse Voltage

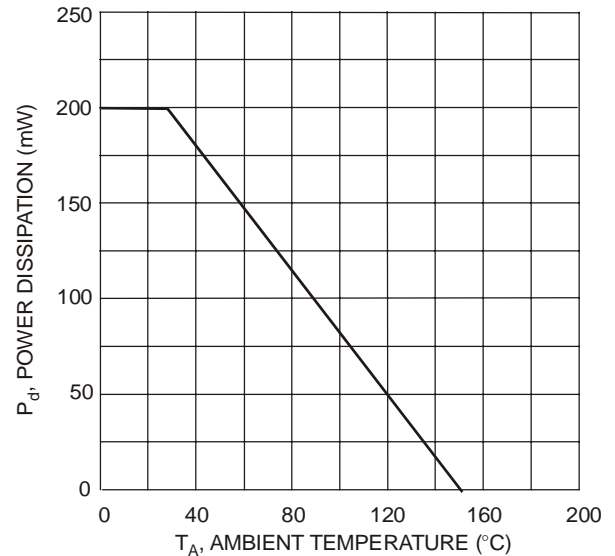


Fig. 4 Power Derating Curve, Total Package

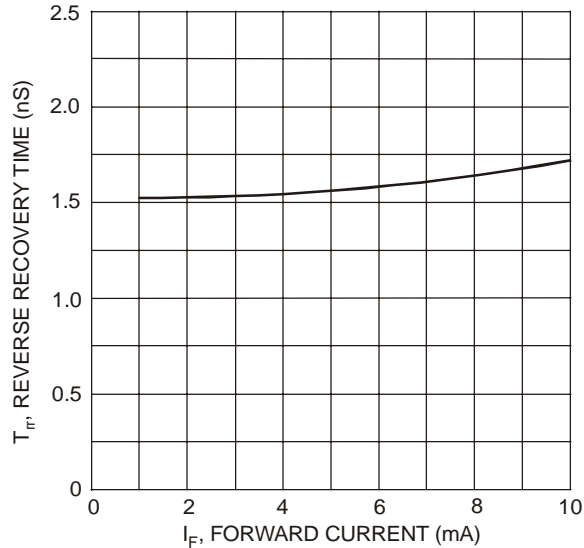


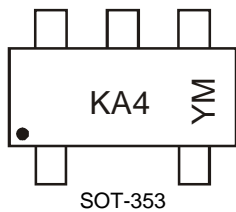
Fig. 5 Reverse Recovery Time vs. Forward Current

**Ordering Information** (Note 6)

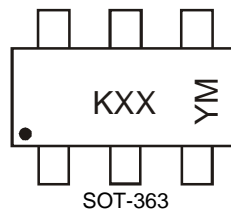
Part Number	Case	Packaging
MMBD4448HADW-7-F	SOT-363	3000/Tape & Reel
MMBD4448HAQW-7-F	SOT-363	3000/Tape & Reel
MMBD4448HCDW-7-F	SOT-363	3000/Tape & Reel
MMBD4448HCQW-7-F	SOT-353	3000/Tape & Reel
MMBD4448HSDW-7-F	SOT-363	3000/Tape & Reel
MMBD4448HTW-7-F	SOT-363	3000/Tape & Reel

Notes: 6. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

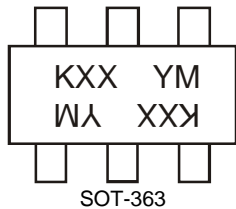
**Marking Information**



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



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



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

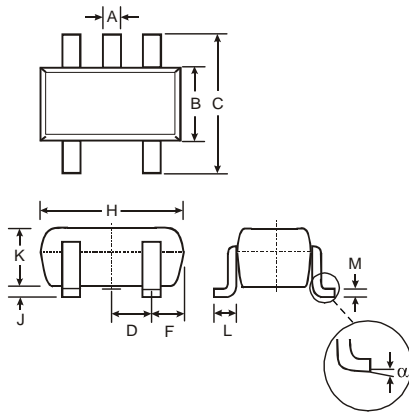
Date Code Key

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2111	2012
Code	L	M	N	P	R	S	T	U	V	W	X	Y	Z

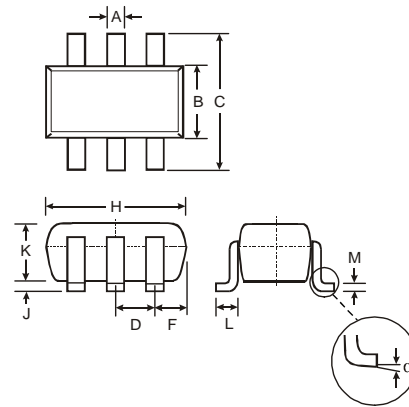
  

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

**Package Outline Dimensions**

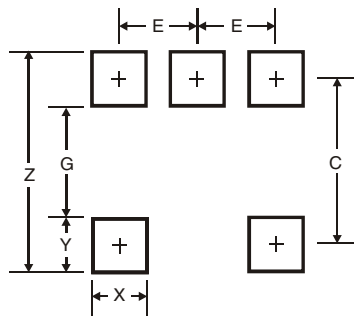


SOT-353		
Dim	Min	Max
A	0.10	0.30
B	1.15	1.35
C	2.00	2.20
D	0.65 Nominal	
F	0.30	0.40
H	1.80	2.20
J	—	0.10
K	0.90	1.00
L	0.25	0.40
M	0.10	0.25
$\alpha$	0°	8°
All Dimensions in mm		

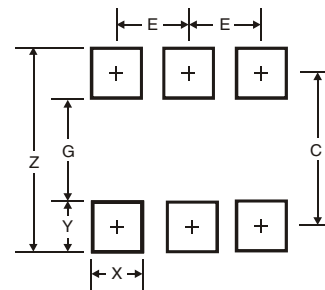


SOT-363		
Dim	Min	Max
A	0.10	0.30
B	1.15	1.35
C	2.00	2.20
D	0.65 Nominal	
F	0.30	0.40
H	1.80	2.20
J	—	0.10
K	0.90	1.00
L	0.25	0.40
M	0.10	0.25
$\alpha$	0°	8°
All Dimensions in mm		

**Suggested Pad Layout**



SOT-353	
Dimensions	Value (in mm)
Z	2.5
G	1.3
X	0.42
Y	0.6
C	1.9
E	0.65



SOT-363	
Dimensions	Value (in mm)
Z	2.5
G	1.3
X	0.42
Y	0.6
C	1.9
E	0.65

**IMPORTANT NOTICE**

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