

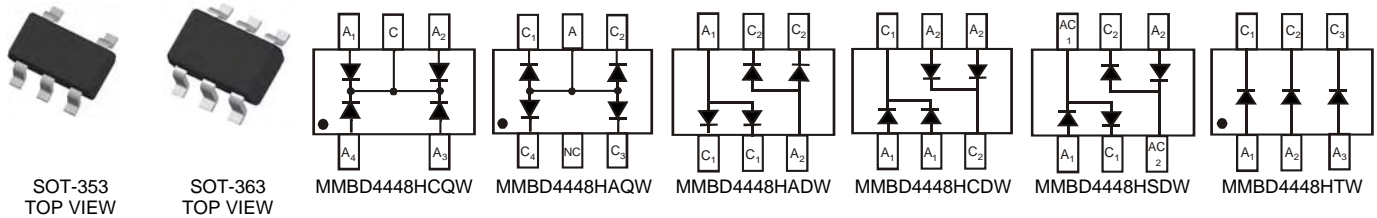
## Features

- Fast Switching Speed
- Low Forward Voltage: Maximum of 0.72V at 5mA
- Low Reverse Current: Maximum of 100nA at 70V
- Fast Reverse Recovery: Maximum of 4ns
- Low Capacitance: Maximum of 3.5pF
- Small Surface Mount Package
- For General Purpose Switching Applications
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**

## Mechanical Data

- Case: SOT353 or SOT363
- Case Material: Molded Plastic, "Green" Molding Compound.  
UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish annealed over Alloy 42 leadframe  
(Lead Free Plating). Solderable per MIL-STD-202, Method 208 **e3**
- Orientation: See Diagrams Below
- Weight: 0.006 grams (approximate)

SOT353/SOT363

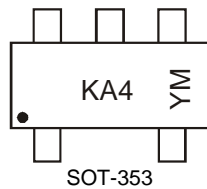


## Ordering Information (Note 4)

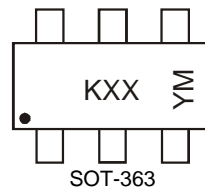
Part Number	Qualification	Case	Packaging
MMBD4448HADW-7-F	Commercial	SOT363	3000/Tape & Reel
MMBD4448HADWQ-7-F	Automotive	SOT363	3000/Tape & Reel
MMBD4448HAQW-7-F	Commercial	SOT363	3000/Tape & Reel
MMBD4448HCDW-7-F	Commercial	SOT363	3000/Tape & Reel
MMBD4448HCQW-7-F	Commercial	SOT353	3000/Tape & Reel
MMBD4448HSDW-7-F	Commercial	SOT363	3000/Tape & Reel
MMBD4448HTW-7-F	Commercial	SOT363	3000/Tape & Reel

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
  2. See <http://www.diodes.com> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
  3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
  4. For packaging details, go to our website at <http://www.diodes.com>.

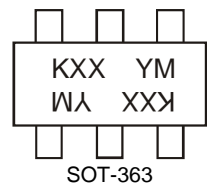
## Marking Information



KA4 = Product Type Marking Code,  
KA4 = MMBD4448HCQW  
YM = Date Code Marking  
Y = Year (ex: Z = 2012)  
M = Month (ex: 9 = September)



KXX = Product Type Marking Code,  
ex. KA5 = MMBD4448HAQW  
KAA = MMBD4448HTW  
YM = Date Code Marking  
Y = Year (ex: Z = 2012)  
M = Month (ex: 9 = September)



KXX = Product Type Marking Code,  
ex. KA6 = MMBD4448HADW  
KA7 = MMBD4448HCDW  
KAB = MMBD4448HSDW  
YM = Date Code Marking  
Y = Year (ex: Z = 2012)  
M = Month (ex: 9 = September)

### Date Code Key

Year	2000	2001	2002	2003	.....	2012	2013	2014	2015	2016	2017	2018	2019
Code	L	M	N	P	.....	Z	A	B	C	D	E	F	G

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

**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 5)	I <sub>FM</sub>	500	mA
Non-Repetitive Peak Forward Surge Current	I <sub>FSM</sub>	@ t = 1.0μs	4.0
		@ t = 1.0s	1.0

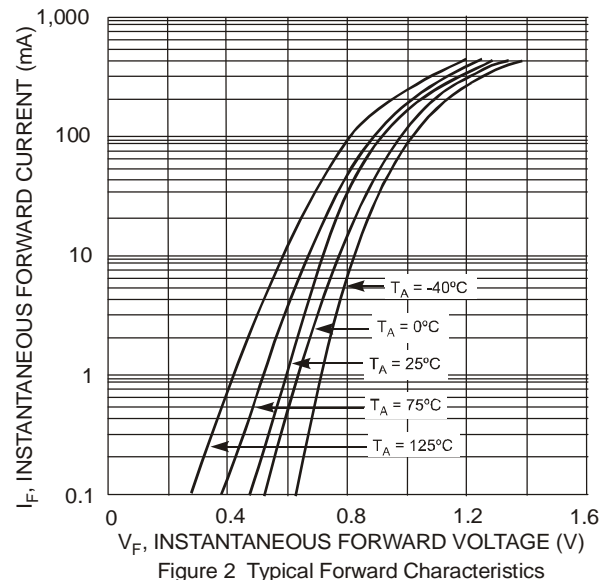
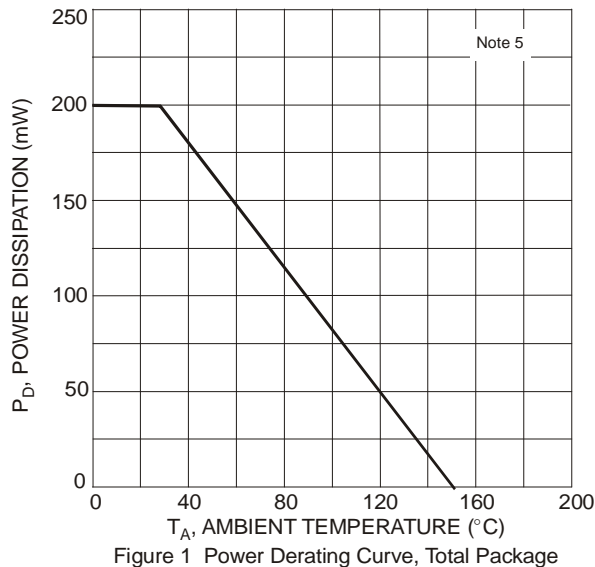
**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P <sub>D</sub>	200	mW
Thermal Resistance Junction to Ambient Air (Note 5)	R <sub>θJA</sub>	625	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +150	°C

**Electrical Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 6)	V <sub>(BR)R</sub>	80	—	V	I <sub>R</sub> = 100μA
Forward Voltage	V <sub>F</sub>	0.62	0.72	V	I <sub>F</sub> = 5.0mA
		—	0.855		I <sub>F</sub> = 10mA
		—	1.0		I <sub>F</sub> = 100mA
		—	1.25		I <sub>F</sub> = 150mA
Reverse Current (Note 6)	I <sub>R</sub>	—	100	nA	V <sub>R</sub> = 70V
			50	μA	V <sub>R</sub> = 75V, T <sub>J</sub> = +150°C
			30	μA	V <sub>R</sub> = 25V, T <sub>J</sub> = +150°C
			25	nA	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. 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>.  
6. Short duration pulse test used to minimize self-heating effect.



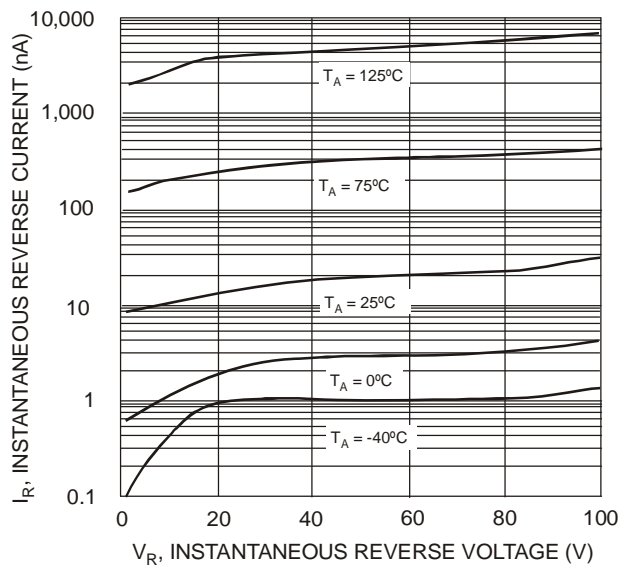


Figure 3 Typical Reverse Characteristics

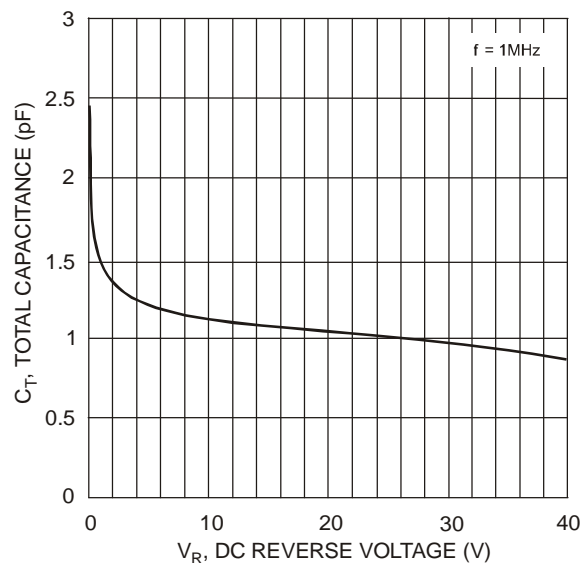


Figure 4 Total Capacitance vs. Reverse Voltage

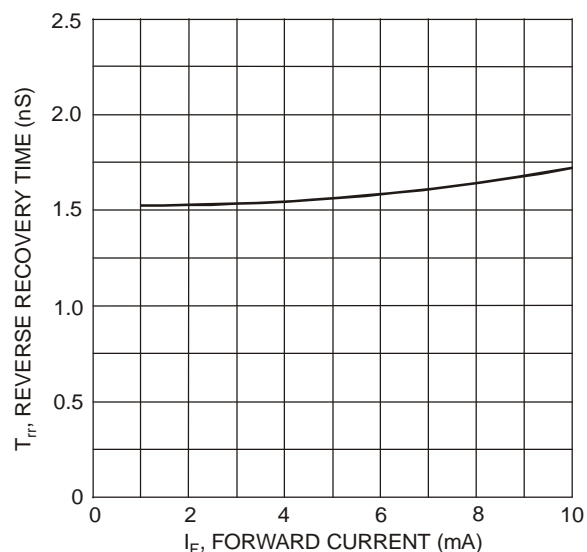
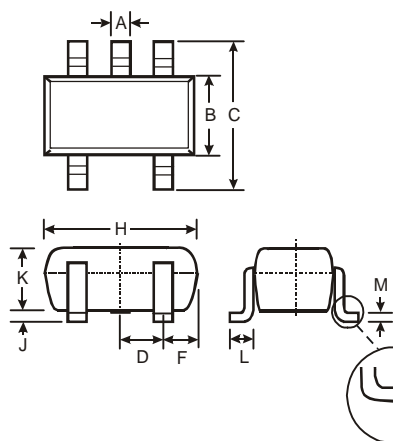
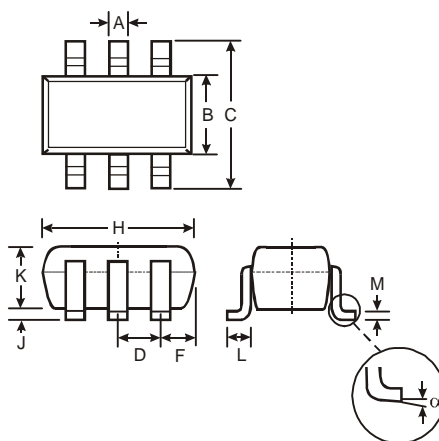


Figure 5 Reverse Recovery Time vs. Forward Current

## Package Outline Dimensions

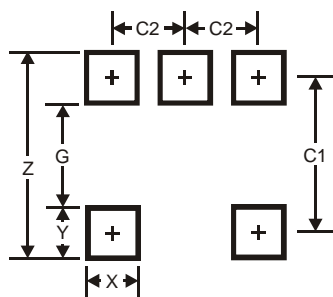


SOT-353		
Dim	Min	Max
A	0.10	0.30
B	1.15	1.35
C	2.00	2.20
D	0.65 Typ	
F	0.40	0.45
H	1.80	2.20
J	0	0.10
K	0.90	1.00
L	0.25	0.40
M	0.10	0.22
α	0°	8°
All Dimensions in mm		

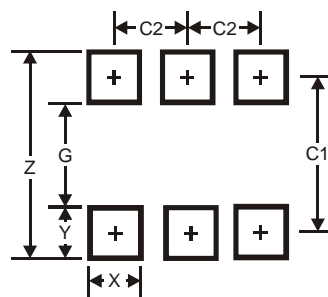


SOT-363		
Dim	Min	Max
A	0.10	0.30
B	1.15	1.35
C	2.00	2.20
D	0.65 Typ	
F	0.40	0.45
H	1.80	2.20
J	0	0.10
K	0.90	1.00
L	0.25	0.40
M	0.10	0.22
α	0°	8°
All Dimensions in mm		

## Suggested Pad Layout



SOT-353	
Dimensions	Value (in mm)
Z	2.5
G	1.3
X	0.42
Y	0.6
C1	1.9
C2	0.65



SOT-363	
Dimensions	Value (in mm)
Z	2.5
G	1.3
X	0.42
Y	0.6
C1	1.9
C2	0.65

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