SURFACE MOUNT FAST SWITCHING DIODE ARRAY

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**

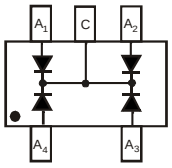
Mechanical Data

- 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)

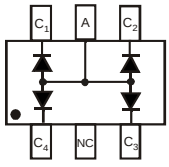
SOT353/SOT363

SOT-353
TOP VIEW

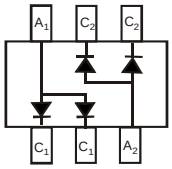
SOT-363
TOP VIEW



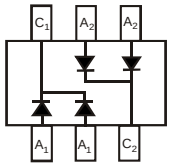
MMBD4448HCQW



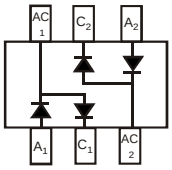
MMBD4448HAQW



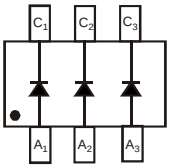
MMBD4448HADW



MMBD4448HCDW



MMBD4448HSDW



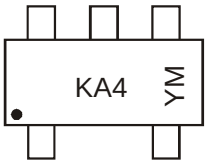
MMBD4448HTW

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

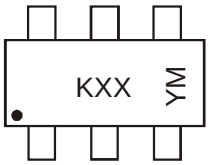
Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
2. See http://www.diodes.com for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. Halogen- and Antimony-free "Green" products are defined 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



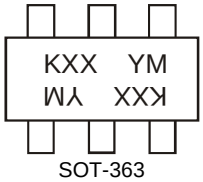
SOT-353

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



SOT-363

KXX = Product Type Marking Code,
ex. KA5 = MMBD4448HAQW
KAA = MMBD4448HTW
YM = Date Code Marking
Y = Year (ex: Z = 2012)
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: 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_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 5)		I_{FM}	500	mA
Non-Repetitive Peak Forward Surge Current	@ t = 1.0μs @ t = 1.0s	I_{FSM}	4.0 1.0	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P_D	200	mW
Thermal Resistance Junction to Ambient Air (Note 5)	$R_{\theta JA}$	625	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +150	°C

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 6)	$V_{(BR)R}$	80	—	V	I_R = 100μA
Forward Voltage	V_F	0.62 — — —	0.72 0.855 1.0 1.25	V	I_F = 5.0mA I_F = 10mA I_F = 100mA I_F = 150mA
Reverse Current (Note 6)	I_R	—	100 50 30 25	nA μA μA nA	V_R = 70V V_R = 75V, T_J = +150°C V_R = 25V, T_J = +150°C V_R = 20V
Total Capacitance	C_T	—	3.5	pF	V_R = 6V, f = 1.0MHz
Reverse Recovery Time	t_{rr}	—	4.0	ns	V_R = 6V, I_F = 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.

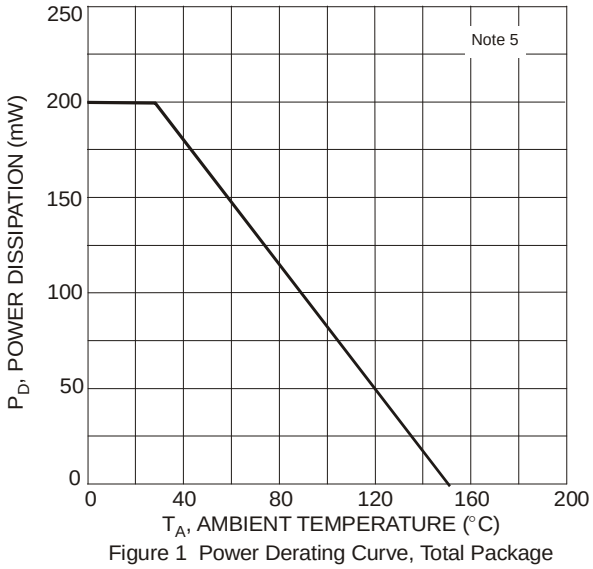


Figure 1 Power Derating Curve, Total Package

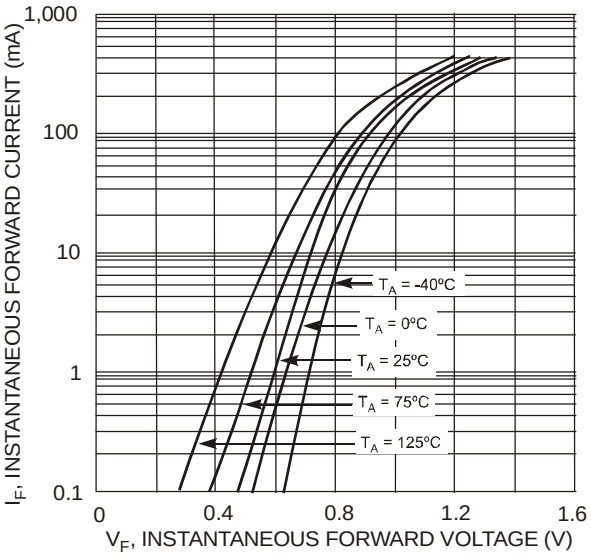


Figure 2 Typical Forward Characteristics

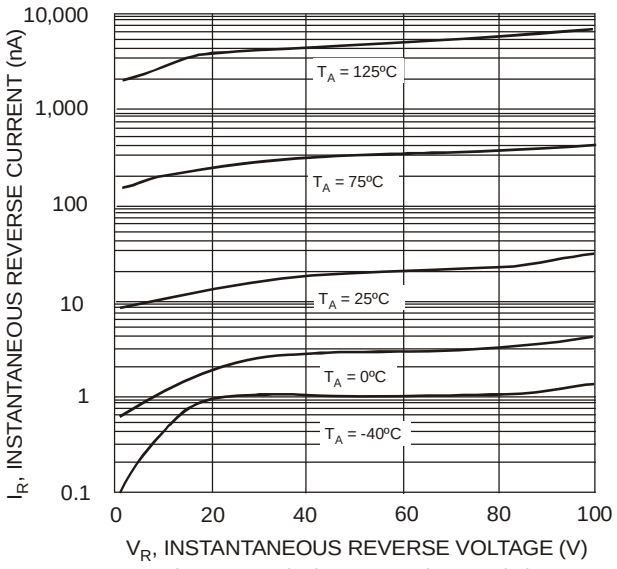


Figure 3 Typical Reverse Characteristics

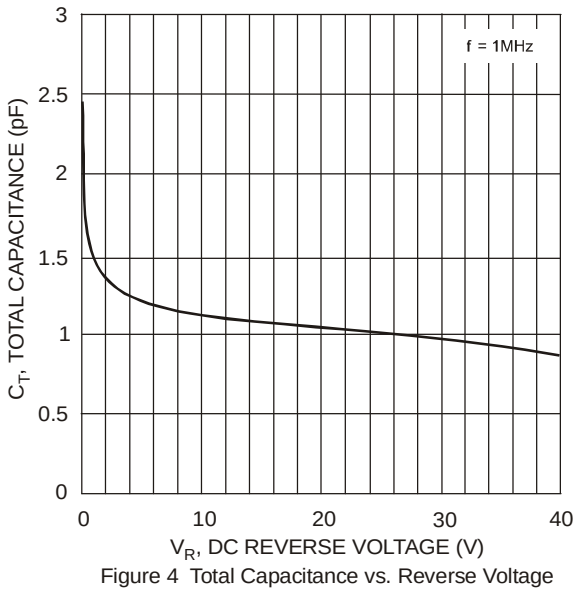


Figure 4 Total Capacitance vs. Reverse Voltage

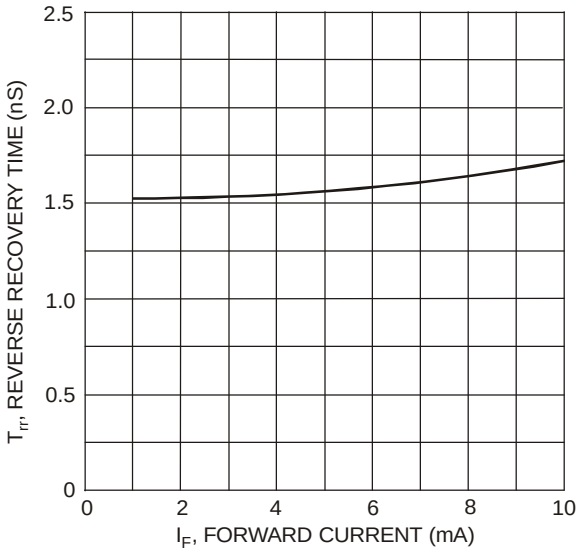
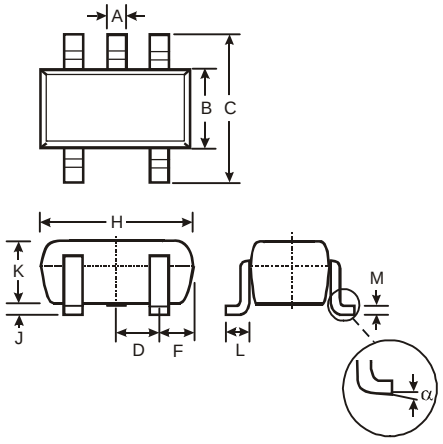
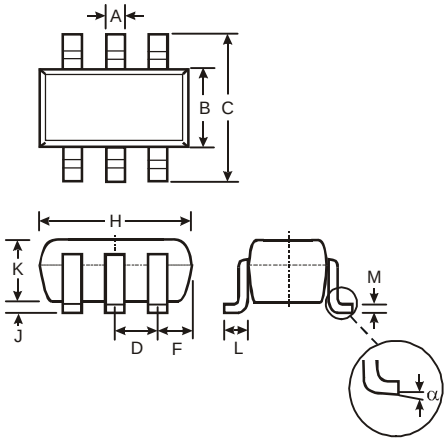


Figure 5 Reverse Recovery Time vs. Forward Current

Package Outline Dimensions

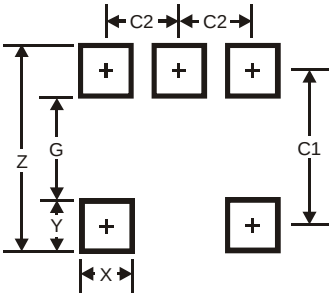


SOT-353		
Dim	**Min**	**Max**
A	0.10	0.30
B	1.15	1.35
C	2.00	2.20
D	0.65 Typ	
F	0.40	0.45
H	1.80	2.20
J	0	0.10
K	0.90	1.00
L	0.25	0.40
M	0.10	0.22
α	0°	8°
All Dimensions in mm		

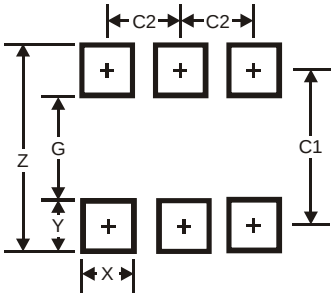


SOT-363		
Dim	**Min**	**Max**
A	0.10	0.30
B	1.15	1.35
C	2.00	2.20
D	0.65 Typ	
F	0.40	0.45
H	1.80	2.20
J	0	0.10
K	0.90	1.00
L	0.25	0.40
M	0.10	0.22
α	0°	8°
All Dimensions in mm		

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