

# M1MA151WAT1, M1MA152WAT1

Preferred Device

## Common Anode Silicon Dual Switching Diodes

These Common Anode Silicon Epitaxial Planar Dual Diodes are designed for use in ultra high speed switching applications. These devices are housed in the SC-59 package which is designed for low power surface mount applications.

- Fast  $t_{rr}$ , < 10 ns
- Low  $C_D$ , < 15 pF
- Available in 8 mm Tape and Reel
  - Use M1MA151/2WAT1 to order the 7 inch/3000 unit reel.
  - Use M1MA151/2WAT3 to order the 13 inch/10,000 unit reel.

### MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ )

Rating		Symbol	Value	Unit
Reverse Voltage	M1MA151WAT1	$V_R$	40	Vdc
	M1MA152WAT1		80	
Peak Reverse Voltage	M1MA151WAT1	$V_{RM}$	40	Vdc
	M1MA152WAT1		80	
Forward Current	Single	$I_F$	100	mAdc
	Dual		150	
Peak Forward Current	Single	$I_{FM}$	225	mAdc
	Dual		340	
Peak Forward Surge Current	Single	$I_{FSM}$ (Note 1)	500	mAdc
	Dual		750	

### THERMAL CHARACTERISTICS

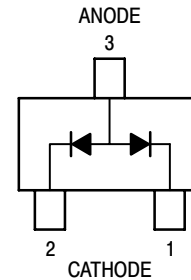
Rating	Symbol	Max	Unit
Power Dissipation	$P_D$	200	mW
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

1.  $t = 1 \text{ SEC}$



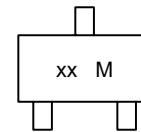
ON Semiconductor®

<http://onsemi.com>



SC-59  
SUFFIX  
CASE 318D

### MARKING DIAGRAM



xx = MN for 151  
MO for 152  
M = Date Code

### ORDERING INFORMATION

Device	Package	Shipping†
M1MA151WAT1	SC-59	3000 / Tape & Reel
M1MA151WAT3	SC-59	10000 / Tape & Reel
M1MA152WAT1	SC-59	3000 / Tape & Reel
M1MA152WAT3	SC-59	10000 / Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

Preferred devices are recommended choices for future use and best overall value.

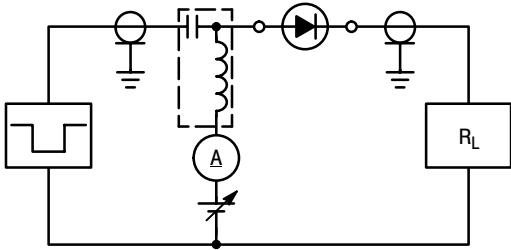
# M1MA151WAT1, M1MA152WAT1

## ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C)

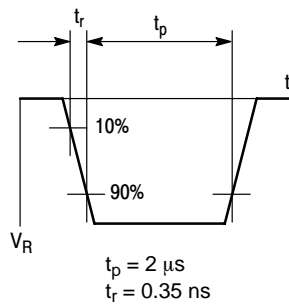
Characteristic	Symbol	Condition	Min	Max	Unit
Reverse Voltage Leakage Current	M1MA151WAT1	V <sub>R</sub> = 35 V	—	0.1	μA <sub>dc</sub>
	M1MA152WAT1	V <sub>R</sub> = 75 V	—	0.1	
Forward Voltage	V <sub>F</sub>	I <sub>F</sub> = 100 mA	—	1.2	V <sub>dc</sub>
Reverse Breakdown Voltage	M1MA151WAT1	I <sub>R</sub> = 100 μA	40	—	V <sub>dc</sub>
	M1MA152WAT1		80	—	
Diode Capacitance	C <sub>D</sub>	V <sub>R</sub> = 0, f = 1.0 MHz	—	15	pF
Reverse Recovery Time (Figure 1)	t <sub>rr</sub> (Note 2)	I <sub>F</sub> = 10 mA, V <sub>R</sub> = 6.0 V, R <sub>L</sub> = 100 Ω, I <sub>rr</sub> = 0.1 I <sub>R</sub>	—	10	ns

### 2. t<sub>rr</sub> Test Circuit

#### RECOVERY TIME EQUIVALENT TEST CIRCUIT



#### INPUT PULSE



#### OUTPUT PULSE

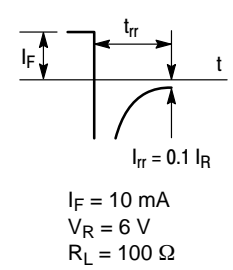


Figure 1. Reverse Recovery Time Equivalent Test Circuit

# M1MA151WAT1, M1MA152WAT1

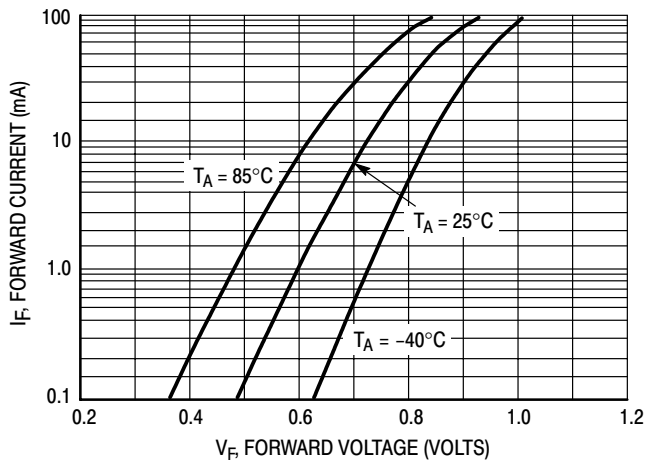


Figure 2. Forward Voltage

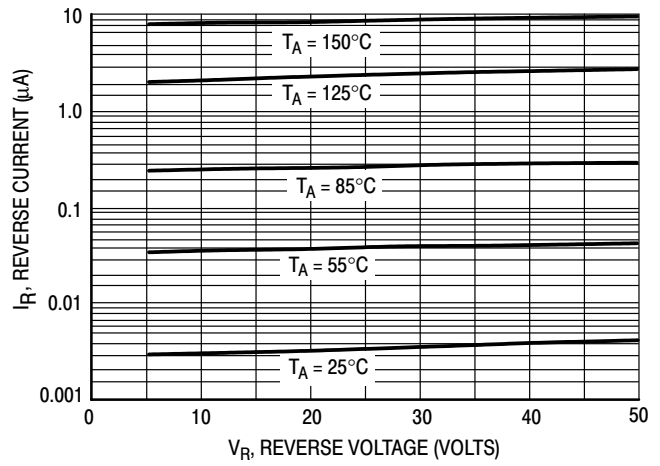


Figure 3. Leakage Current

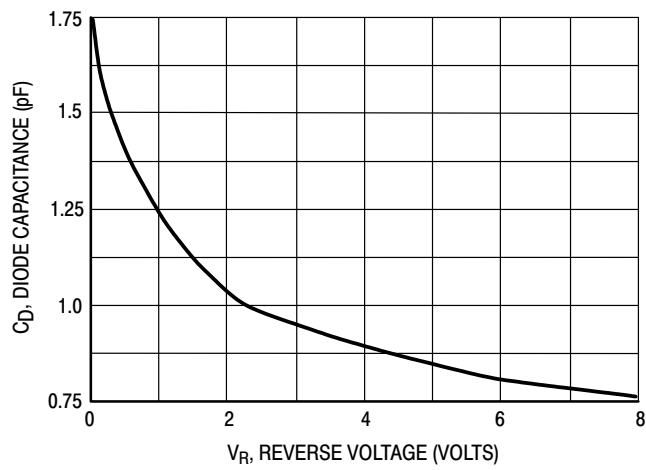
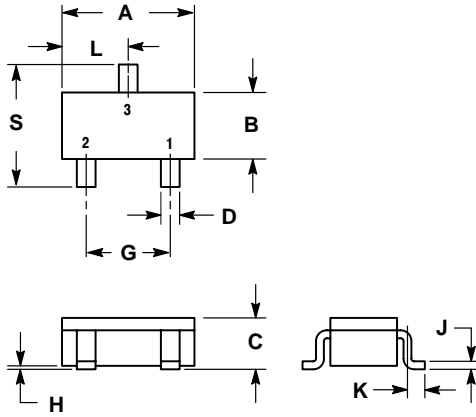


Figure 4. Capacitance

# M1MA151WAT1, M1MA152WAT1

## PACKAGE DIMENSIONS

SC-59  
CASE 318-04  
ISSUE F




### NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETER.

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	2.70	3.10	0.1063	0.1220
B	1.30	1.70	0.0512	0.0669
C	1.00	1.30	0.0394	0.0511
D	0.35	0.50	0.0138	0.0196
G	1.70	2.10	0.0670	0.0826
H	0.013	0.100	0.0005	0.0040
J	0.09	0.18	0.0034	0.0070
K	0.20	0.60	0.0079	0.0236
L	1.25	1.65	0.0493	0.0649
S	2.50	3.00	0.0985	0.1181

### STYLE 4:

1. N.C.
2. CATHODE
3. ANODE

ON Semiconductor and  are registered trademarks of Semiconductor Components Industries, LLC (SCILLC). SCILLC reserves the right to make changes without further notice to any products herein. SCILLC makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does SCILLC assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. "Typical" parameters which may be provided in SCILLC data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. SCILLC does not convey any license under its patent rights nor the rights of others. SCILLC products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the SCILLC product could create a situation where personal injury or death may occur. Should Buyer purchase or use SCILLC products for any such unintended or unauthorized application, Buyer shall indemnify and hold SCILLC and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that SCILLC was negligent regarding the design or manufacture of the part. SCILLC is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

### PUBLICATION ORDERING INFORMATION

#### LITERATURE FULFILLMENT:

Literature Distribution Center for ON Semiconductor  
P.O. Box 5163, Denver, Colorado 80217 USA

Phone: 303-675-2175 or 800-344-3860 Toll Free USA/Canada

Fax: 303-675-2176 or 800-344-3867 Toll Free USA/Canada

Email: [orderlit@onsemi.com](mailto:orderlit@onsemi.com)

N. American Technical Support: 800-282-9855 Toll Free  
USA/Canada

Japan: ON Semiconductor, Japan Customer Focus Center

2-9-1 Kamimeguro, Meguro-ku, Tokyo, Japan 153-0051

Phone: 81-3-5773-3850

ON Semiconductor Website: <http://onsemi.com>

Order Literature: <http://www.onsemi.com/litorder>

For additional information, please contact your  
local Sales Representative.

M1MA151WAT1/D