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°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	

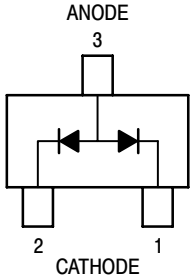
THERMAL CHARACTERISTICS

Rating	Symbol	Max	Unit
Power Dissipation	P_D	200	mW
Junction Temperature	T_J	150	°C
Storage Temperature	T_{stg}	−55 to +150	°C

1. t = 1 SEC

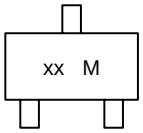
ON Semiconductor®

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.

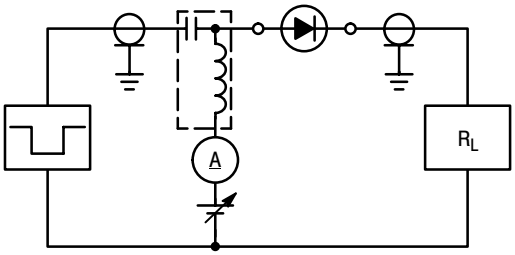
Preferred devices are recommended choices for future use and best overall value.

ELECTRICAL CHARACTERISTICS (T_A = 25°C)

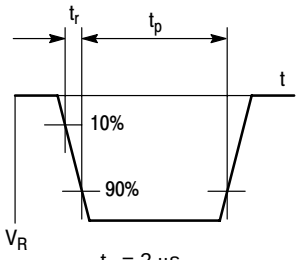
Characteristic		Symbol	Condition	Min	Max	Unit
Reverse Voltage Leakage Current	M1MA151WAT1	I_R	V_R = 35 V	—	0.1	μAdc
	M1MA152WAT1		V_R = 75 V	−	0.1	
Forward Voltage		V_F	I_F = 100 mA	−	1.2	Vdc
Reverse Breakdown Voltage	M1MA151WAT1	V_R	I_R = 100 μA	40	−	Vdc
	M1MA152WAT1			80	−	
Diode Capacitance		C_D	V_R = 0, f = 1.0 MHz	−	15	pF
Reverse Recovery Time (Figure 1)		t_{rr} (Note 2)	I_F = 10 mA, V_R = 6.0 V, R_L = 100 Ω, I_{rr} = 0.1 I_R	−	10	ns

2. t_{rr} Test Circuit

RECOVERY TIME EQUIVALENT TEST CIRCUIT

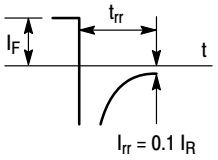


INPUT PULSE



t_p = 2 μs
t_r = 0.35 ns

OUTPUT PULSE



I_F = 10 mA
V_R = 6 V
R_L = 100 Ω

Figure 1. Reverse Recovery Time Equivalent Test Circuit

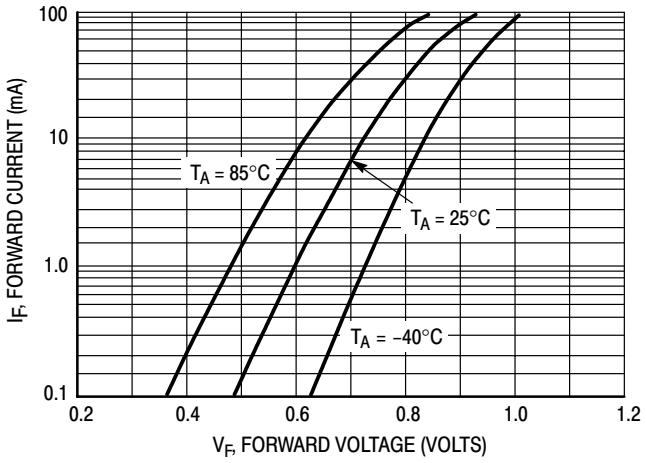


Figure 2. Forward Voltage

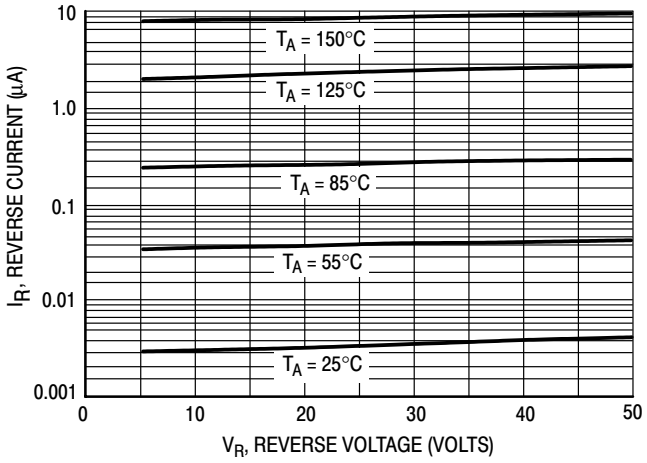


Figure 3. Leakage Current

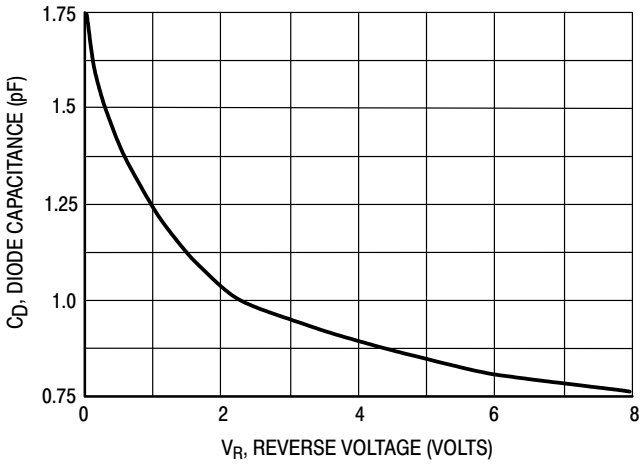
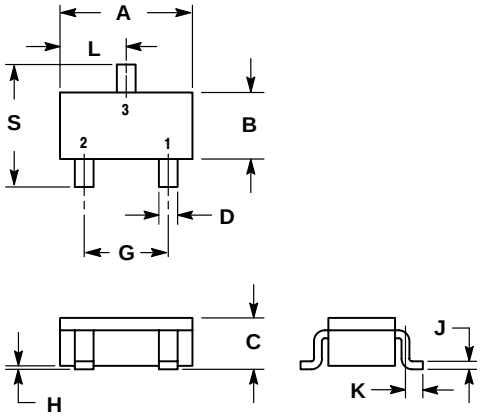


Figure 4. Capacitance

PACKAGE DIMENSIONS

SC−59
CASE 318−04
ISSUE F



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

	MILLIMETERS		INCHES	
DIM	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:
PIN 1. N.C.
2. CATHODE
3. ANODE

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:
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For additional information, please contact your local Sales Representative.

M1MA151WAT1/D