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.

Features

- Fast t_{rr} , < 10 ns
- Low C_D, < 15 pF
- Pb-Free Packages are Available

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

Rating	Symbol	Value	Unit	
	51WAT1 52WAT1	V _R	40 80	Vdc
	51WAT1 52WAT1	V_{RM}	40 80	Vdc
Forward Current	Single Dual	l _F	100 150	mAdc
Peak Forward Current	Single Dual	I _{FM}	225 340	mAdc
Peak Forward Surge Current	Single Dual	I _{FSM} (Note 1)	500 750	mAdc

THERMAL CHARACTERISTICS

Rating	Symbol	Max	Unit
Power Dissipation	P _D	200	mW
Junction Temperature	TJ	150	°C
Storage Temperature	T _{stg}	-55 to +150	°C

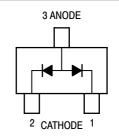
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

1. t = 1 SEC



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SC-59 CASE 318D

MARKING DIAGRAM



Mx = Device Code x = N for 151 O for 152

M = Date Code*

= Pb–Free Package

(Note: Microdot may be in either location)
*Date Code orientation may vary depending upon manufacturing location.

ORDERING INFORMATION

Device	Package	Shipping [†]
M1MA151WAT1	SC-59	3000/Tape & Reel
M1MA151WAT1G	SC-59 (Pb-Free)	3000/Tape & Reel
M1MA152WAT1	SC-59	3000/Tape & Reel
M1MA152WAT1G	SC-59 (Pb-Free)	3000/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 $(T_A = 25^{\circ}C)$

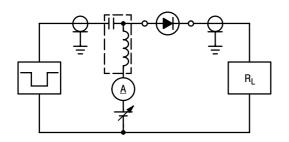
Characteristic		Symbol	Condition	Min	Max	Unit	
Reverse Voltage Leakage Current	M1MA151WAT1 M1MA152WAT1	I _R	V _R = 35 V V _R = 75 V	-	0.1	μAdc	
Forward Voltage		V _F	I _F = 100 mA	_	1.2	Vdc	
Reverse Breakdown Voltage	M1MA151WAT1 M1MA152WAT1	V _R	I _R = 100 μA	40 80	-	Vdc	
Diode Capacitance		C _D	V _R = 0, f = 1.0 MHz	-	15	pF	
Reverse Recovery Time (Figure 1)		t _{rr} (Note 2)	$I_F = 10 \text{ mA}, V_R = 6.0 \text{ V},$ $R_L = 100 \Omega, I_{rr} = 0.1 I_R$	_	10	ns	

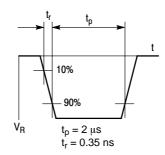
^{2.} t_{rr} Test Circuit

RECOVERY TIME EQUIVALENT TEST CIRCUIT

INPUT PULSE

OUTPUT PULSE





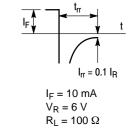


Figure 1. Reverse Recovery Time Equivalent Test Circuit

M1MA151WAT1, M1MA152WAT1

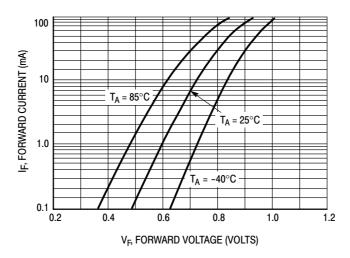


Figure 2. Forward Voltage

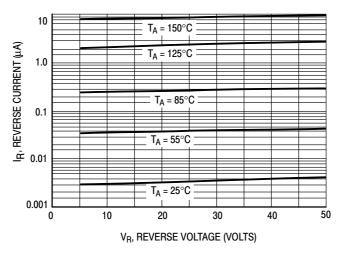


Figure 3. Leakage Current

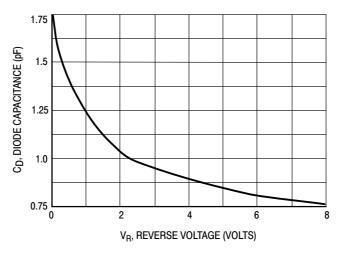
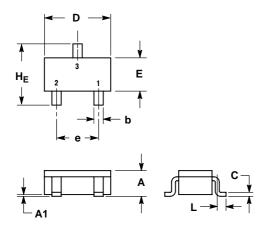


Figure 4. Capacitance

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PACKAGE DIMENSIONS

SC-59 CASE 318D-04 ISSUE G

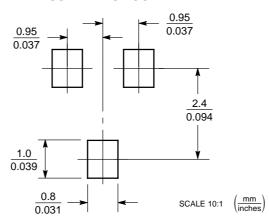


NOTES:

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

	MILLIMETERS		INCHES			
DIM	MIN	NOM	MAX	MIN	NOM	MAX
Α	1.00	1.15	1.30	0.039	0.045	0.051
A1	0.01	0.06	0.10	0.001	0.002	0.004
b	0.35	0.43	0.50	0.014	0.017	0.020
С	0.09	0.14	0.18	0.003	0.005	0.007
D	2.70	2.90	3.10	0.106	0.114	0.122
E	1.30	1.50	1.70	0.051	0.059	0.067
е	1.70	1.90	2.10	0.067	0.075	0.083
L	0.20	0.40	0.60	0.008	0.016	0.024
HE	2.50	2.80	3.00	0.099	0.110	0.118

SOLDERING FOOTPRINT*



*For additional information on our Pb–Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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