Dual Switching Diode

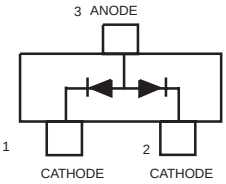
M1MA141WAT1G, S-M1MA141WAT1G
M1MA142WAT1G, S-M1MA142WAT1G

This Common Anode Silicon Epitaxial Planar Dual Diode is designed for use in ultra high speed switching applications. This device is housed in the SC–70 package which is designed for low power surface mount applications.

- Fast t_{rr}, < 10 ns
- Low C_D, < 15 pF
- We declare that the material of product compliance with RoHS requirements.
- S- Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable.

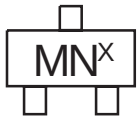
SC-70/SOT-323 PACKAGE
COMMON ANODE
DUAL SWITCHING DIODE
40/80 V-100 mA
SURFACE MOUNT

CASE 419–04, STYLE 4
SOT–323 /SC – 70



Marking Symbol

Type No.	141WA	142WA
Symbol	MN	MO



The "X" represents a smaller alpha digit Date Code. The Date Code indicates the actual month in which the part was manufactured.

DEVICE MARKING AND ORDERING INFORMATION

Device	Package	Shipping
M1MA141WAT1G S-M1MA141WAT1G	SOT-323/SC-70	3000/Tape&Reel
M1MA141KWA3G S-M1MA141WAT3G	SOT-323/SC-70	10000/Tape&Reel
M1MA142WAT1G S-M1MA142WAT1G	SOT-323/SC-70	3000/Tape&Reel
M1MA142WAT3G S-M1MA142WAT3G	SOT-323/SC-70	10000/Tape&Reel

DEVICE MARKING

M1MA141WAT1G = MN M1MA142WAT1G=MO

MAXIMUM RATINGS (T_A = 25°C)

Rating		Symbol	Value	Unit
Reverse Voltage	LM1MA141WAT1G	V_R	40	V_{dc}
	LM1MA142WAT1G		80	
Peak Reverse Voltage	LM1MA141WAT1G	V_{RM}	40	V_{dc}
	LM1MA142WAT1G		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}(1)	500	mAdc
	Dual		750	

THERMAL CHARACTERISTICS

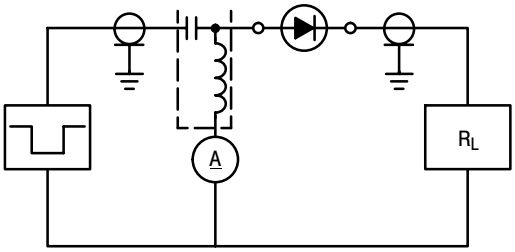
Rating	Symbol	Max	Unit
Power Dissipation	P_D	150	mW
Junction Temperature	T_J	150	°C
Storage Temperature	T_{stg}	–55 ~ +150	°C

ELECTRICAL CHARACTERISTICS (T_A = 25°C)

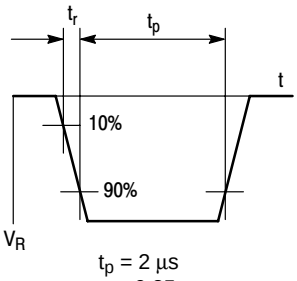
Characteristic		Symbol	Condition	Min	Max	Unit
Reverse Voltage Leakage Current	LM1MA141WAT1G	I_R	V_R = 35 V	—	0.1	μAdc
	LM1MA142WAT1G		V_R = 75 V	—	0.1	
Forward Voltage		V_F	I_F = 100 mA	—	1.2	Vdc
Reverse Breakdown Voltage	LM1MA141WAT1G	V_R	I_R = 100 μA	40	—	Vdc
	LM1MA142WAT1G			80	—	
Diode Capacitance		C_D	V_R=0, f=1.0 MHz	—	15	pF
Reverse Recovery Time		t_{rr}(2)	I_F=10mA,V_R=6.0V R_L=100Ω,I_{rr}=0.1 I_R	—	10	ns

1. t = 1 SEC
2. t_{rr} Test Circuit

RECOVERY TIME EQUIVALENT TEST CIRCUIT

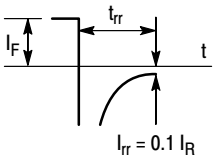


INPUT PULSE



t_p = 2 µs
t_r = 0.35 ns

OUTPUT PULSE



I_F = 10 mA
V_R = 6 V
R_L = 100 Ω

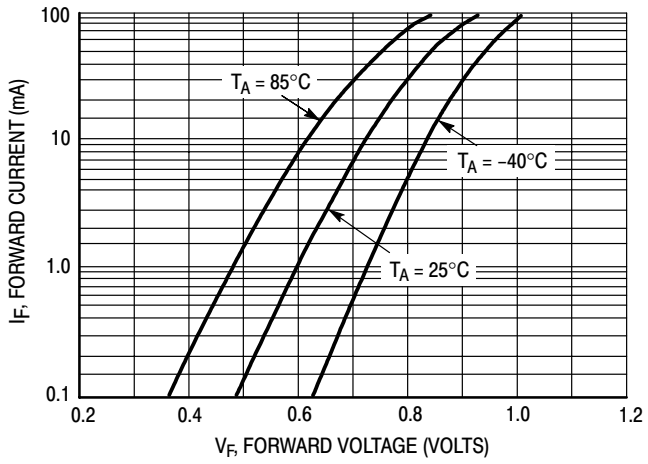


Figure 1. Forward Voltage

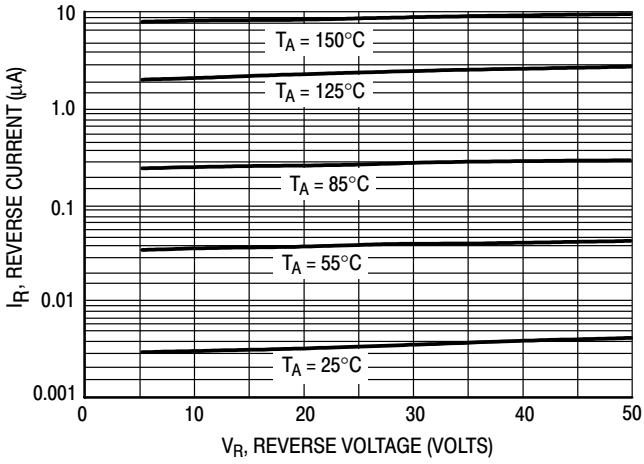


Figure 2. Reverse Current

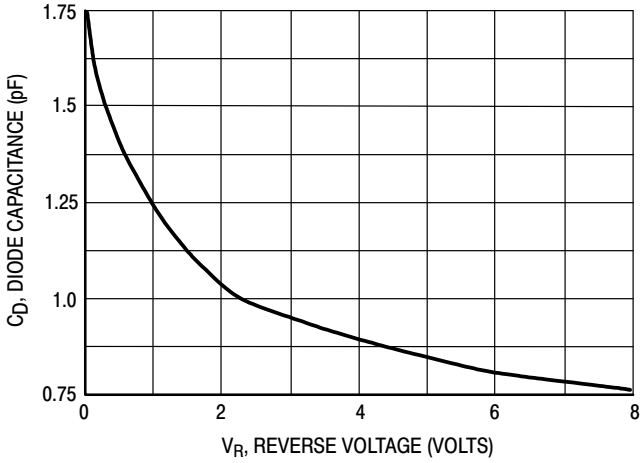


Figure 3. Diode Capacitance

SC−70/SOT−323

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

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.071	0.087	1.80	2.20
B	0.045	0.053	1.15	1.35
C	0.032	0.040	0.80	1.00
D	0.012	0.016	0.30	0.40
G	0.047	0.055	1.20	1.40
H	0.000	0.004	0.00	0.10
J	0.004	0.010	0.10	0.25
K	0.017 REF		0.425 REF	
L	0.026 BSC		0.650 BSC	
N	0.028 REF		0.700 REF	
S	0.079	0.095	2.00	2.40