

# Common Anode Silicon Dual Switching Diode

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.

## DEVICE MARKING AND ORDERING INFORMATION

| Device        | Package       | Shipping        |
|---------------|---------------|-----------------|
| LM1MA141WAT1G | SOT-323/SC-70 | 3000/Tape&Reel  |
| LM1MA141KWA3G | SOT-323/SC-70 | 10000/Tape&Reel |
| LM1MA142WAT1G | SOT-323/SC-70 | 3000/Tape&Reel  |
| LM1MA142WAT3G | SOT-323/SC-70 | 10000/Tape&Reel |

## DEVICE MARKING

LM1MA141WAT1G = MN LM1MA142WAT1G=MO

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

| Rating                     | Symbol                 | Value | Unit            |
|----------------------------|------------------------|-------|-----------------|
| Reverse Voltage            | LM1MA141WAT1G $V_R$    | 40    | V <sub>dc</sub> |
|                            | LM1MA142WAT1G          | 80    |                 |
| Peak Reverse Voltage       | LM1MA141WAT1G $V_{RM}$ | 40    | V <sub>dc</sub> |
|                            | 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 ( $T_A = 25^\circ\text{C}$ )

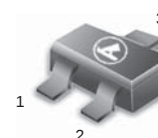
| Characteristic                  | Symbol              | Condition                                                             | Min | Max | Unit |
|---------------------------------|---------------------|-----------------------------------------------------------------------|-----|-----|------|
| Reverse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

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

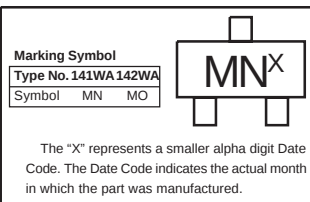
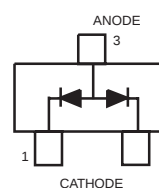
2.  $t_{rr}$  Test Circuit

## LM1MA141WAT1G LM1MA142WAT1G

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

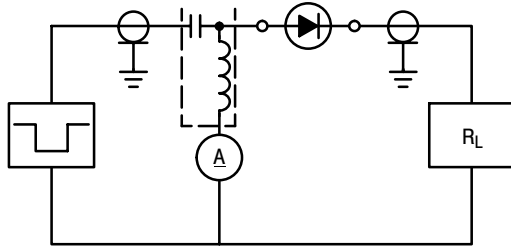


CASE 419-04, STYLE 4  
SOT-323 /SC - 70

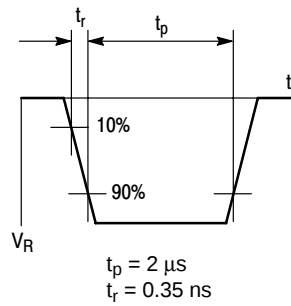


## LM1MA141WAT1G LM1MA142WAT1G

### RECOVERY TIME EQUIVALENT TEST CIRCUIT



### INPUT PULSE



### OUTPUT PULSE

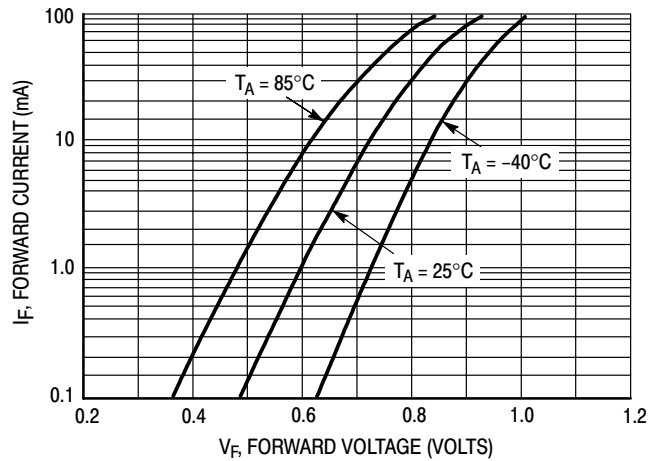
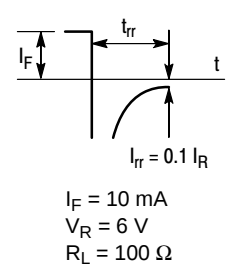


Figure 1. Forward Voltage

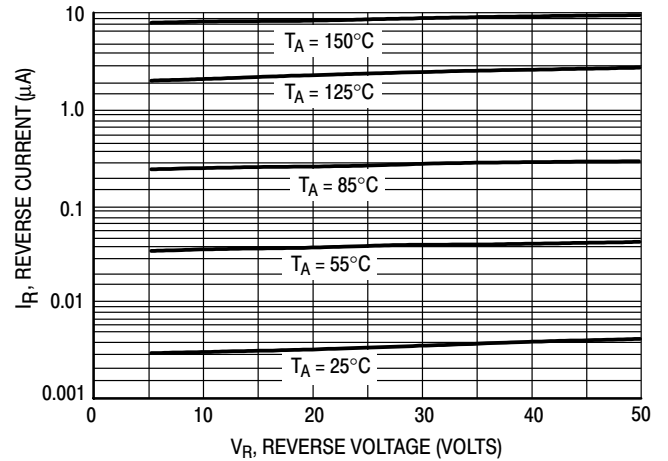


Figure 2. Reverse Current

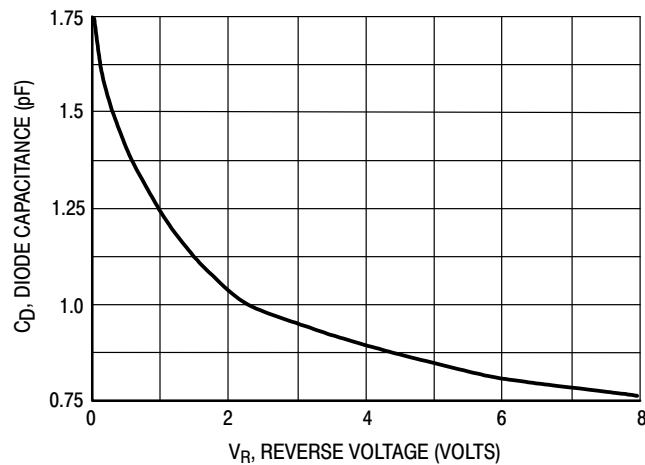


Figure 3. Diode Capacitance

**LM1MA141WAT1G LM1MA142WAT1G**

**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 |

