

# 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.
- S- Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable.

## DEVICE MARKING AND ORDERING INFORMATION

| Device                           | Package       | Shipping        |
|----------------------------------|---------------|-----------------|
| LM1MA141WAT1G<br>S-LM1MA141WAT1G | SOT-323/SC-70 | 3000/Tape&Reel  |
| LM1MA141KWA3G<br>S-LM1MA141WAT3G | SOT-323/SC-70 | 10000/Tape&Reel |
| LM1MA142WAT1G<br>S-LM1MA142WAT1G | SOT-323/SC-70 | 3000/Tape&Reel  |
| LM1MA142WAT3G<br>S-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   | $V_{dc}$ |
|                            | 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        | $^\circ\text{C}$ |
| Storage Temperature  | $T_{stg}$ | -55 ~ +150 | $^\circ\text{C}$ |

## ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ )

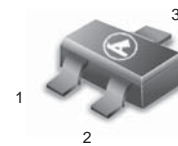
| Characteristic                  | Symbol        | Condition                 | Min  | Max | Unit |                 |
|---------------------------------|---------------|---------------------------|--|-----|------|-----------------|
| Reverse Voltage Leakage Current | LM1MA141WAT1G | $I_R$                     | $V_R = 35\text{ V}$  | —   | 0.1  | $\mu\text{Adc}$ |
|                                 | LM1MA142WAT1G |                           | $V_R = 75\text{ V}$  | —   | 0.1  |                 |
| Forward Voltage                 | $V_F$         | $I_F = 100\text{ mA}$     | —  | 1.2 | Vdc  |                 |
| Reverse Breakdown Voltage       | LM1MA141WAT1G | $V_R$                     | $I_R = 100\ \mu\text{A}$   | 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.  $t = 1\text{ SEC}$

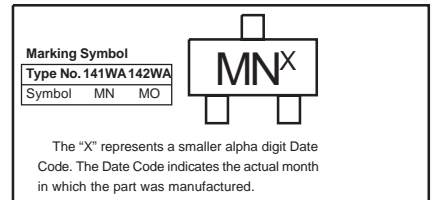
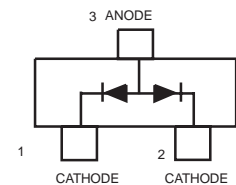
2.  $t_{rr}$  Test Circuit

**LM1MA141WAT1G**  
**S-LM1MA141WAT1G**  
**LM1MA142WAT1G**  
**S-LM1MA142WAT1G**

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

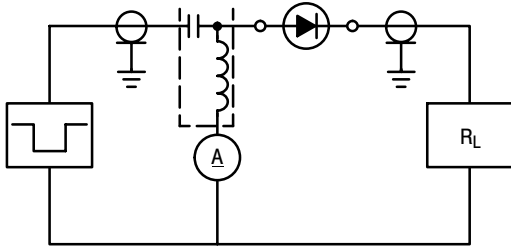


**CASE 419-04, STYLE 4**  
**SOT-323 / SC - 70**

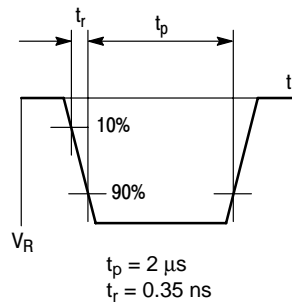


LM1MA141WAT1G, S-LM1MA141WAT1G  
LM1MA142WAT1G, S-LM1MA142WAT1G

RECOVERY TIME EQUIVALENT TEST CIRCUIT



INPUT PULSE



OUTPUT PULSE

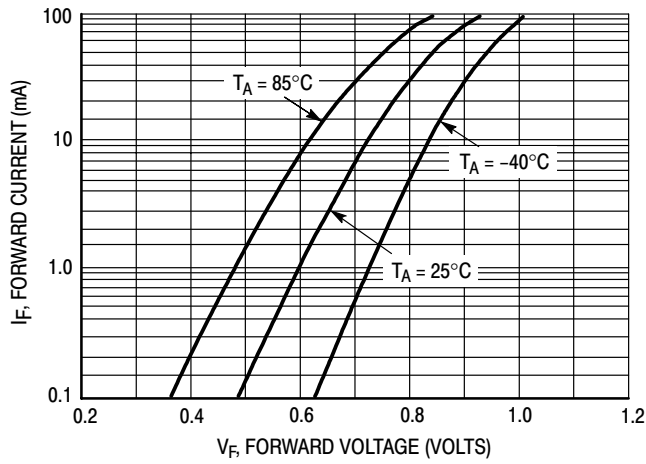
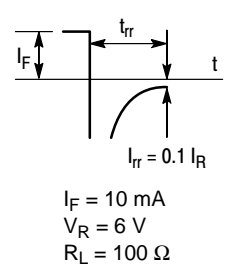


Figure 1. Forward Voltage

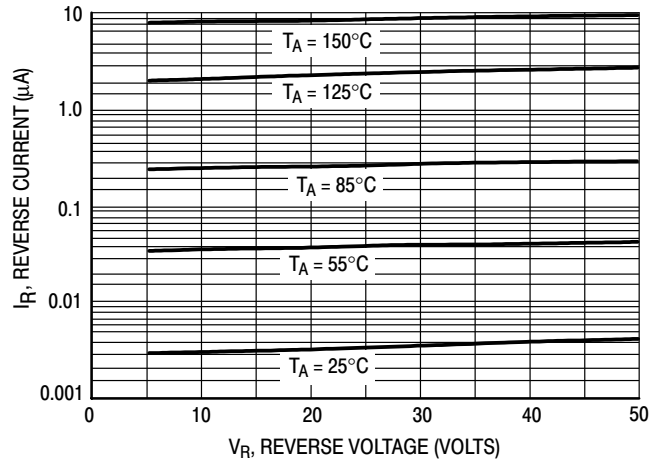


Figure 2. Reverse Current

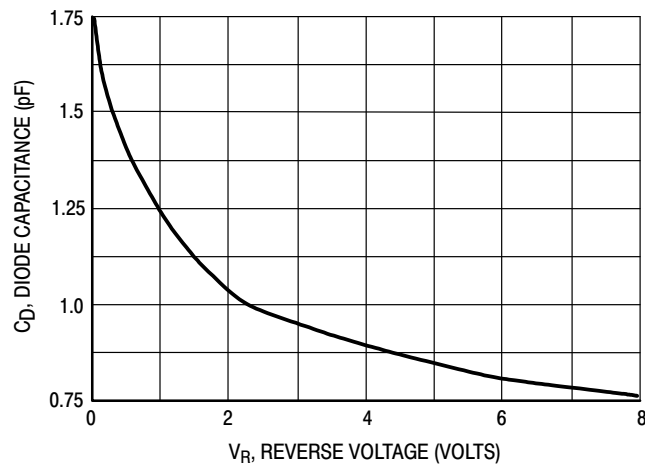


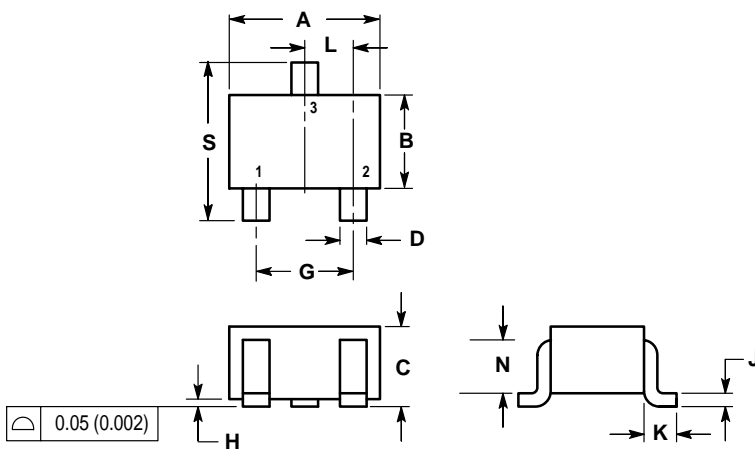
Figure 3. Diode Capacitance

LM1MA141WAT1G, S-LM1MA141WAT1G  
LM1MA142WAT1G, S-LM1MA142WAT1G

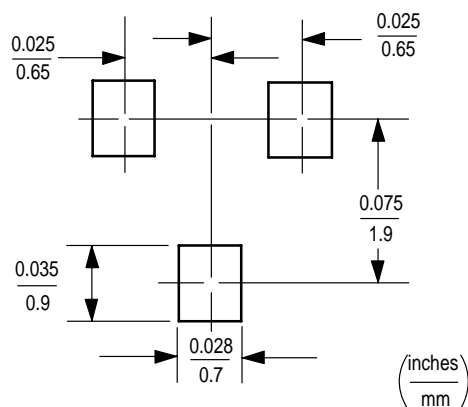
SC-70/SOT-323

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 |



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