

## Common Cathode Silicon Dual Switching Diode

This Common Cathode 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  $t_{tr}$ , < 3.0 ns
- Low  $C_D$ , < 2.0 pF
- Pb-Free package is available
- Available in 8 mm Tape and Reel

Use LM1MA141/2WKT1 to order the 7 inch/3000 unit reel.

Use LM1MA141/2WKT3 to order the 13 inch/10,000 unit reel.

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

| Rating                     | Symbol                       | Value                  | Unit     |
|----------------------------|------------------------------|------------------------|----------|
| Reverse Voltage            | LM1MA141WKT1<br>LM1MA142WKT1 | $V_R$<br>80            | $V_{dc}$ |
| Peak Reverse Voltage       | LM1MA141WKT1<br>LM1MA142WKT1 | $V_{RM}$<br>80         | $V_{dc}$ |
| Forward Current            | Single<br>Dual               | $I_F$<br>150           | mAdc     |
| Peak Forward Current       | Single<br>Dual               | $I_{FM}$<br>340        | mAdc     |
| Peak Forward Surge Current | Single<br>Dual               | $I_{FSM}^{(1)}$<br>750 | mAdc     |

### 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 | LM1MA141WKT1<br>LM1MA142WKT1 | $V_R = 35\text{ V}$<br>$V_R = 75\text{ V}$                              | —        | 0.1 | $\mu\text{Adc}$ |
| Forward Voltage                 |                              | $I_F = 100\text{ mA}$                                                   | —        | 1.2 | Vdc             |
| Reverse Breakdown Voltage       | LM1MA141WKT1<br>LM1MA142WKT1 | $I_R = 100\text{ }\mu\text{A}$                                          | 40<br>80 | —   | Vdc             |
| Diode Capacitance               |                              | $V_R=0, f=1.0\text{ MHz}$                                               | —        | 2.0 | pF              |
| Reverse Recovery                | Time                         | $I_F=10\text{ mA}, V_R=6.0\text{ V}$<br>$R_L=100\Omega, I_{rr}=0.1 I_R$ | —        | 3.0 | ns              |

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

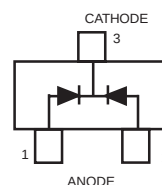
2.  $t_{rr}$  Test Circuit

**LM1MA141WKT1**  
**LM1MA142WKT1**

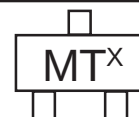
**SC-70/SOT-323 PACKAGE**  
**COMMON CATHODE**  
**DUAL SWITCHING DIODE**  
**40/80 V-100 mA**  
**SURFACE MOUNT**



CASE 419-04, STYLE 5  
SOT-323 /SC - 70



Marking Symbol  
Type No. 141WK142WK  
Symbol MT MU



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

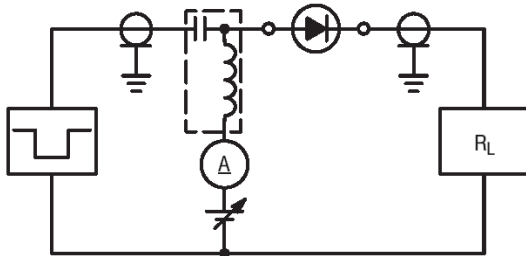
LM1MA141WKT1 LM1MA142WKT1

DEVICE MARKING AND ORDERING INFORMATION

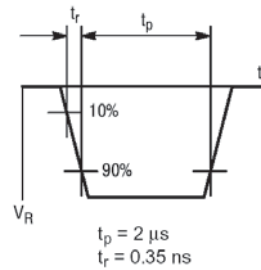
| Device                     | Marking | Package       | Shipping        |
|----------------------------|---------|---------------|-----------------|
| LM1MA141WKT1               | MT      | SOT-323/SC-70 | 3000/Tape&Reel  |
| LM1MA141WKT1G<br>(Pb-Free) | MT      | SOT-323/SC-70 | 3000/Tape&Reel  |
| LM1MA141WKT3               | MT      | SOT-323/SC-70 | 10000/Tape&Reel |
| LM1MA141WKT3G<br>(Pb-Free) | MT      | SOT-323/SC-70 | 10000/Tape&Reel |
| LM1MA142WKT1               | MU      | SOT-323/SC-70 | 3000/Tape&Reel  |
| LM1MA142WKT1G<br>(Pb-Free) | MU      | SOT-323/SC-70 | 3000/Tape&Reel  |
| LM1MA142WKT3               | MU      | SOT-323/SC-70 | 10000/Tape&Reel |
| LM1MA142WKT3G<br>(Pb-Free) | MU      | SOT-323/SC-70 | 10000/Tape&Reel |

# LM1MA141WKT1 LM1MA142WKT1

## RECOVERY TIME EQUIVALENT TEST CIRCUIT



## INPUT PULSE



## OUTPUT PULSE

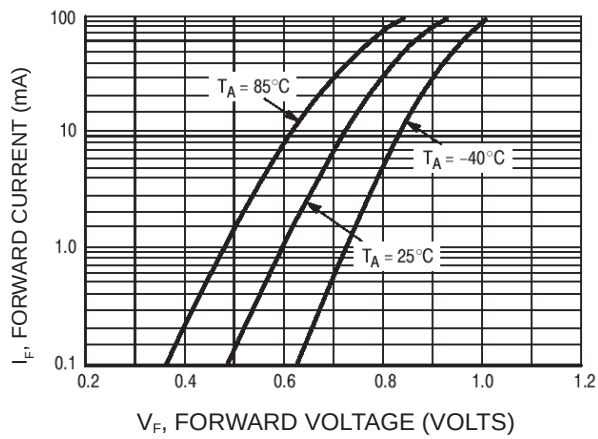
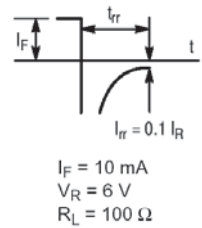


Figure 1. Forward Voltage

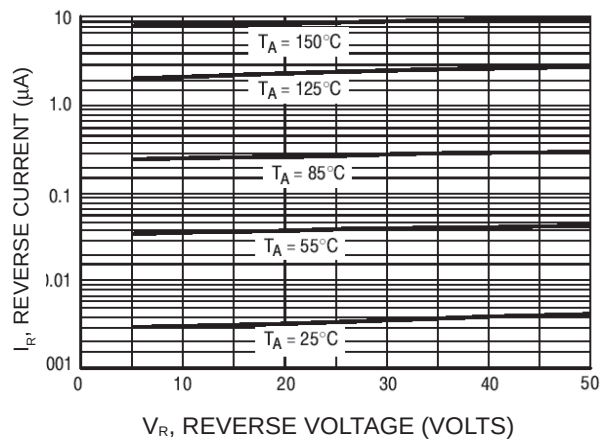


Figure 2. Reverse Current

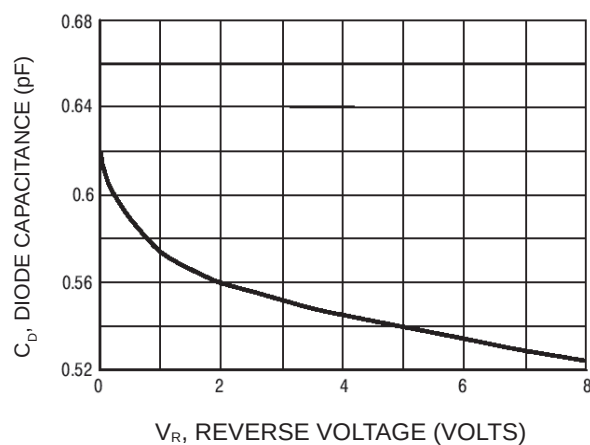


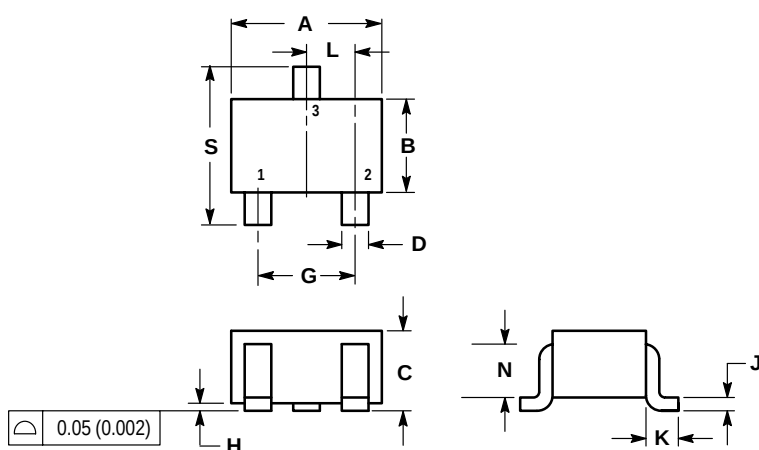
Figure 3. Diode Capacitance

LM1MA141WKT1 LM1MA142WKT1

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 |

