

M1MA151WKT1, M1MA152WKT1

Preferred Device

Common Cathode Silicon Dual Switching Diodes

These Common Cathode 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} , < 3.0 ns
- Low C_D , < 2.0 pF
- Pb-Free Packages are Available

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

| Rating | Symbol | Value | Unit |
|--|-----------------------|------------|------|
| Reverse Voltage M1MA151WKT1 M1MA152WKT1 | V_R | 40 80 | Vdc |
| Peak Reverse Voltage M1MA151WKT1 M1MA152WKT1 | V_{RM} | 40 80 | Vdc |
| Forward Current Single Dual | I_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 | T_J | 150 | $^\circ\text{C}$ |
| Storage Temperature | T_{stg} | -55 to +150 | $^\circ\text{C}$ |

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.

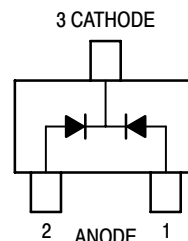
1. $t = 1 \text{ SEC}$



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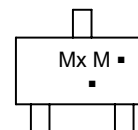
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SC-59 PACKAGE SINGLE SILICON
SWITCHING DIODES 40 V/80 V 100 mA
SURFACE MOUNT



SC-59
CASE 318D

MARKING DIAGRAM



Mx = Device Code
x = T for 151
U 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† |
|--------------|--------------------|------------------|
| M1MA151WKT1 | SC-59 | 3000/Tape & Reel |
| M1MA151WKT1G | SC-59 (Pb-Free) | 3000/Tape & Reel |
| M1MA152WKT1 | SC-59 | 3000/Tape & Reel |
| M1MA152WKT1G | 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.

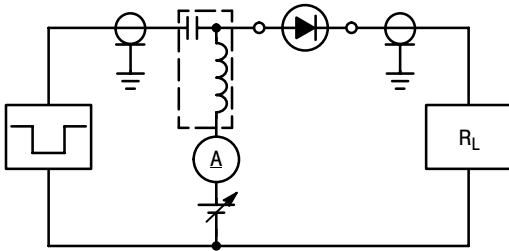
M1MA151WKT1, M1MA152WKT1

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

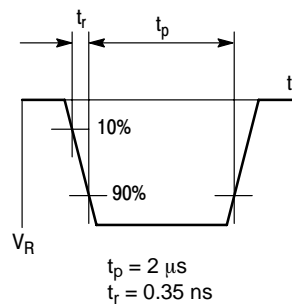
| Characteristic | Symbol | Condition | Min | Max | Unit |
|---|----------------------|--|----------|-----|------------------|
| Reverse Voltage Leakage Current M1MA151WKT1 M1MA152WKT1 | I_R | $V_R = 35\text{ V}$ $V_R = 75\text{ V}$ | - | 0.1 | $\mu\text{A dc}$ |
| Forward Voltage | V_F | $I_F = 100\text{ mA}$ | - | 1.2 | Vdc |
| Reverse Breakdown Voltage M1MA151WKT1 M1MA152WKT1 | V_R | $I_R = 100\text{ }\mu\text{A}$ | 40 80 | - | Vdc |
| Diode Capacitance | C_D | $V_R = 0, f = 1.0\text{ MHz}$ | - | 2.0 | pF |
| Reverse Recovery Time (Figure 1) | t_{rr} (Note 2) | $I_F = 10\text{ mA}, V_R = 6.0\text{ V},$ $R_L = 100\text{ }\Omega, I_{rr} = 0.1 I_R$ | - | 3.0 | ns |

2. t_{rr} Test Circuit

RECOVERY TIME EQUIVALENT TEST CIRCUIT



INPUT PULSE



OUTPUT PULSE

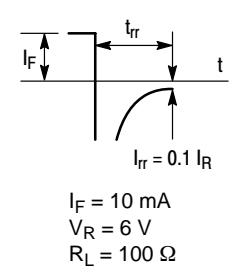
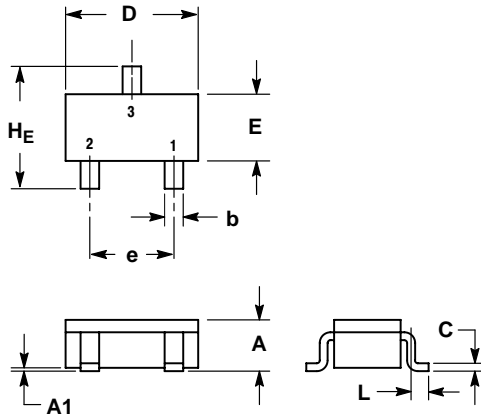


Figure 1. Reverse Recovery Time Equivalent Test Circuit

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PACKAGE DIMENSIONS

SC-59
CASE 318D-04
ISSUE G

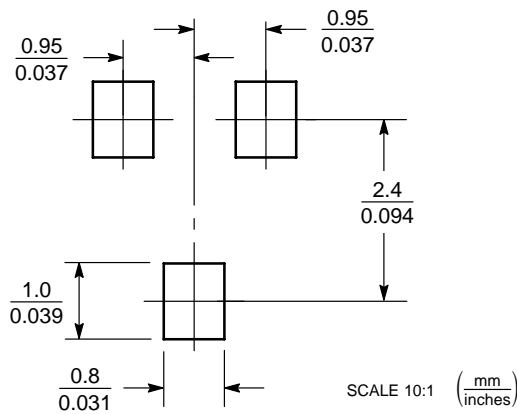


NOTES:

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

| DIM | MILLIMETERS | | | INCHES | | |
|-----|-------------|------|------|--------|-------|-------|
| | MIN | NOM | MAX | MIN | NOM | MAX |
| A | 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 |
| c | 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 |
| e | 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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