

# DAN222M3T5G

## 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 SOT-723 package which is designed for low power surface mount applications, where board space is at a premium.

### Features

- Fast  $t_{rr}$
- Low  $C_D$
- Available in 4 mm Tape and Reel
- These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant

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

| Rating               | Symbol   | Value | Unit |
|----------------------|----------|-------|------|
| Reverse Voltage      | $V_R$    | 80    | V    |
| Peak Reverse Voltage | $V_{RM}$ | 80    | V    |
| Forward Current      | $I_F$    | 100   | mA   |

### THERMAL CHARACTERISTICS

| Rating                    | Symbol    | Max         | Unit             |
|---------------------------|-----------|-------------|------------------|
| Power Dissipation         | $P_D$     | 260         | mW               |
| Junction Temperature      | $T_J$     | 150         | $^\circ\text{C}$ |
| Storage Temperature Range | $T_{stg}$ | -55 to +150 | $^\circ\text{C}$ |

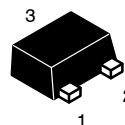
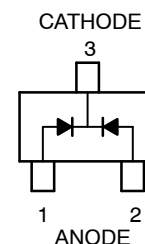
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

1.  $t = 1.0 \mu\text{s}$ .



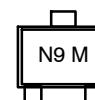
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<http://onsemi.com>



SOT-723  
CASE 631AA  
STYLE 3

### MARKING DIAGRAM



N9 = Specific Device Code  
M = Date Code

### ORDERING INFORMATION

| Device      | Package              | Shipping <sup>†</sup> |
|-------------|----------------------|-----------------------|
| DAN222M3T5G | SOT-723<br>(Pb-Free) | 8000/Tape & Reel      |

<sup>†</sup>For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification Brochure, BRD8011/D.

# DAN222M3T5G

## ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C)

| Characteristic                           | Symbol          | Condition  | Min | Max | Unit |
|--|-----------------|--|-----|-----|------|
| Reverse Voltage Leakage Current (Note 2) | I <sub>R</sub>  | V <sub>R</sub> = 70 V  | –   | 0.1 | μA   |
| Forward Voltage                          | V <sub>F</sub>  | I <sub>F</sub> = 100 mA  | –   | 1.2 | V    |
| Reverse Breakdown Voltage                | V <sub>R</sub>  | I <sub>R</sub> = 100 μA  | 80  | –   | V    |
| Diode Capacitance                        | C <sub>D</sub>  | V <sub>R</sub> = 6.0 V, f = 1.0 MHz  | –   | 3.5 | pF   |
| Reverse Recovery Time (Note 3)           | t <sub>rr</sub> | I <sub>F</sub> = 5.0 mA, V <sub>R</sub> = 6.0 V,<br>R <sub>L</sub> = 100 Ω, I <sub>rr</sub> = 0.1 I <sub>R</sub> | –   | 4.0 | ns   |

2. For each diode while other is not forward biased.
3. t<sub>rr</sub> Test Circuit on following page.

## TYPICAL ELECTRICAL CHARACTERISTICS

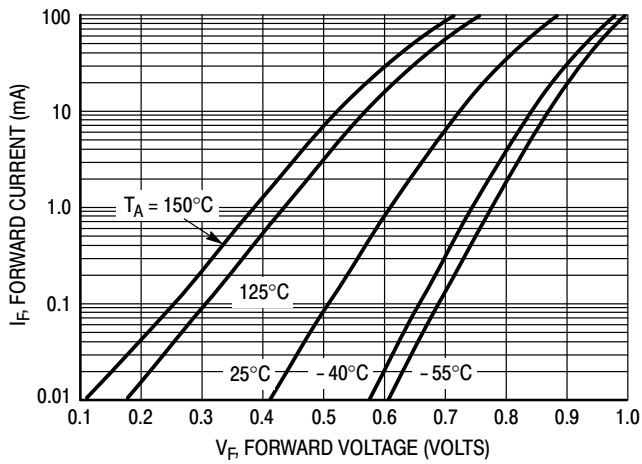


Figure 1. Forward Voltage

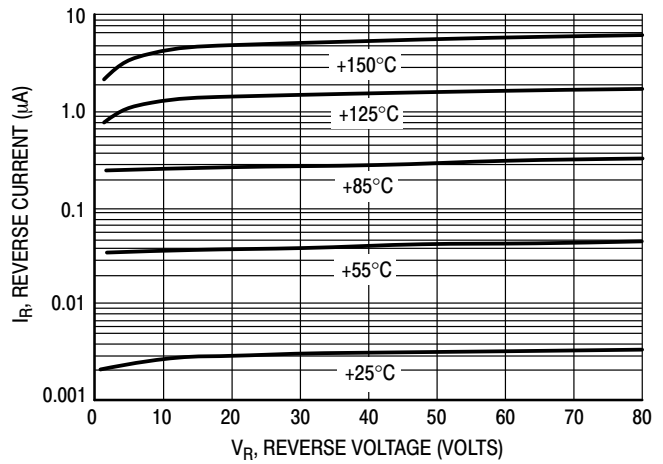


Figure 2. Reverse Current

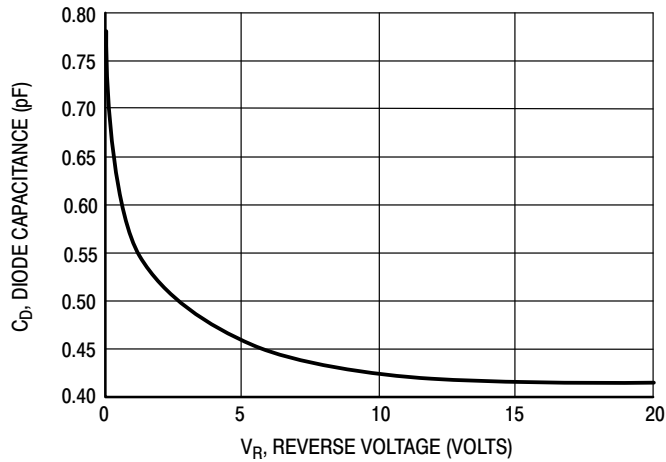
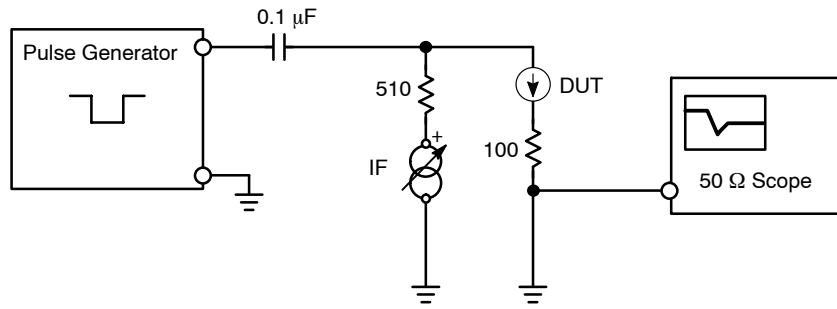
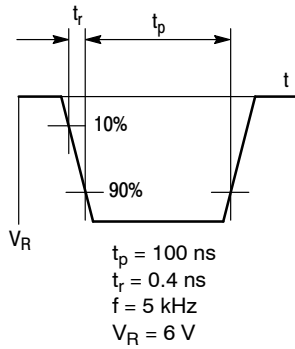


Figure 3. Diode Capacitance

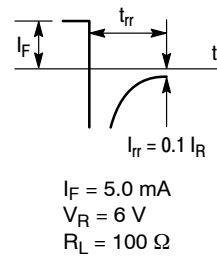
# DAN222M3T5G



**RECOVERY TIME EQUIVALENT TEST CIRCUIT**



**INPUT PULSE**



**OUTPUT PULSE**

**Figure 4. Reverse Recovery Time Test Circuit**

# MECHANICAL CASE OUTLINE

## PACKAGE DIMENSIONS

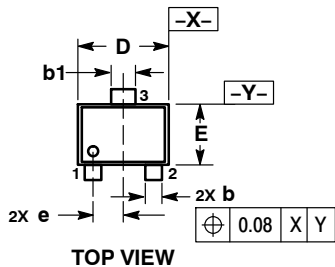
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SCALE 4:1

**SOT-723**  
CASE 631AA-01  
ISSUE D

DATE 10 AUG 2009

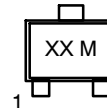


**NOTES:**

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.

| MILLIMETERS |          |      |      |
|-------------|----------|------|------|
| DIM         | MIN      | NOM  | MAX  |
| A           | 0.45     | 0.50 | 0.55 |
| b           | 0.15     | 0.21 | 0.27 |
| b1          | 0.25     | 0.31 | 0.37 |
| C           | 0.07     | 0.12 | 0.17 |
| D           | 1.15     | 1.20 | 1.25 |
| E           | 0.75     | 0.80 | 0.85 |
| e           | 0.40 BSC |      |      |
| H E         | 1.15     | 1.20 | 1.25 |
| L           | 0.29 REF |      |      |
| L2          | 0.15     | 0.20 | 0.25 |

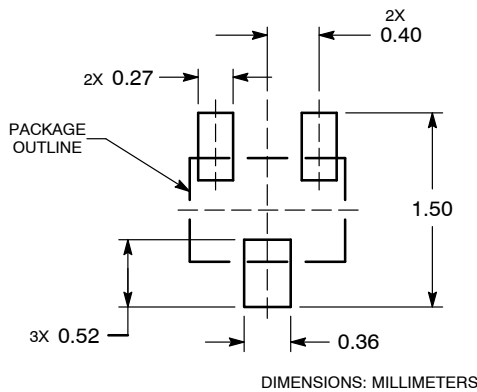
**GENERIC MARKING DIAGRAM\***



XX = Specific Device Code  
M = Date Code

- |   |  |  |  |  |
|---|--|--|--|--|
| STYLE 1:<br>PIN 1. BASE<br>2. EMITTER<br>3. COLLECTOR | STYLE 2:<br>PIN 1. ANODE<br>2. N/C<br>3. CATHODE | STYLE 3:<br>PIN 1. ANODE<br>2. ANODE<br>3. CATHODE | STYLE 4:<br>PIN 1. CATHODE<br>2. CATHODE<br>3. ANODE | STYLE 5:<br>PIN 1. GATE<br>2. SOURCE<br>3. DRAIN |
|---|--|--|--|--|

**RECOMMENDED SOLDERING FOOTPRINT\***



\*This information is generic. Please refer to device data sheet for actual part marking. Pb-Free indicator, "G", may or not be present.

\*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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| <b>DESCRIPTION:</b>     | <b>SOT-723</b>     | <b>PAGE 1 OF 1</b>   |

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