

# DAN222, NSVDAN222

## 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-416/SC-75 package which is designed for low power surface mount applications, where board space is at a premium.

### Features

- Fast  $t_{rr}$
- Low  $C_D$
- NSV Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable
- 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    | Vdc  |
| Peak Reverse Voltage                | $V_{RM}$  | 80    | Vdc  |
| Forward Current                     | $I_F$     | 100   | mAdc |
| Peak Forward Current                | $I_{FM}$  | 300   | mAdc |
| Peak Forward Surge Current (Note 1) | $I_{FSM}$ | 2.0   | Adc  |

### THERMAL CHARACTERISTICS

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

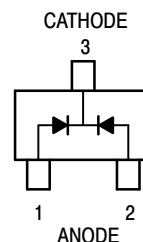
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

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



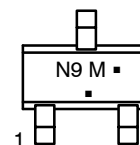
**ON Semiconductor®**

<http://onsemi.com>



SC-75/SOT-416  
CASE 463  
STYLE 3

### MARKING DIAGRAM



N9 = Specific Device Code  
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†          |
|--------------|--------------------|--------------------|
| DAN222G      | SC-75<br>(Pb-Free) | 3000 / Tape & Reel |
| DAN222T1G    | SC-75<br>(Pb-Free) | 3000 / Tape & Reel |
| NSVDAN222T1G | SC-75<br>(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.

# DAN222, NSVDAN222

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

| Characteristic                  | Symbol            | Condition                                                                                   | Min | Max | Unit          |
|---------------------------------|-------------------|---------------------------------------------------------------------------------------------|-----|-----|---------------|
| Reverse Voltage Leakage Current | $I_R$             | $V_R = 70\text{ V}$                                                                         | –   | 0.1 | $\mu\text{A}$ |
| Forward Voltage                 | $V_F$             | $I_F = 100\text{ mA}$                                                                       | –   | 1.2 | Vdc           |
| Reverse Breakdown Voltage       | $V_R$             | $I_R = 100\text{ }\mu\text{A}$                                                              | 80  | –   | Vdc           |
| Diode Capacitance               | $C_D$             | $V_R = 6.0\text{ V}, f = 1.0\text{ MHz}$                                                    | –   | 3.5 | pF            |
| Reverse Recovery Time           | $t_{rr}$ (Note 2) | $I_F = 5.0\text{ mA}, V_R = 6.0\text{ V}, R_L = 100\text{ }\Omega, I_{rr} = 0.1\text{ }I_R$ | –   | 4.0 | ns            |

2.  $t_{rr}$  Test Circuit on following page.

## TYPICAL ELECTRICAL CHARACTERISTICS

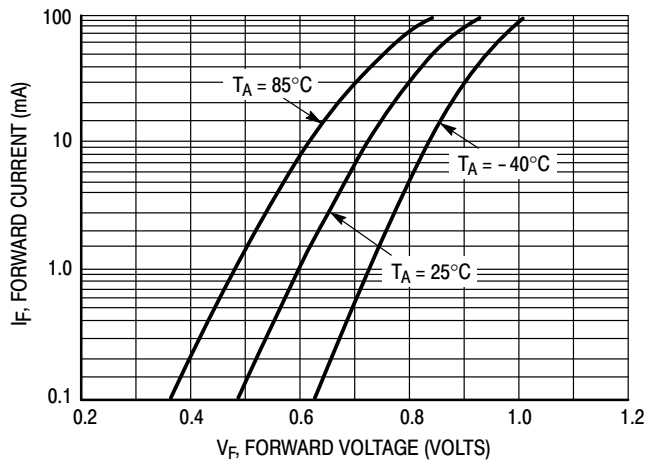


Figure 1. Forward Voltage

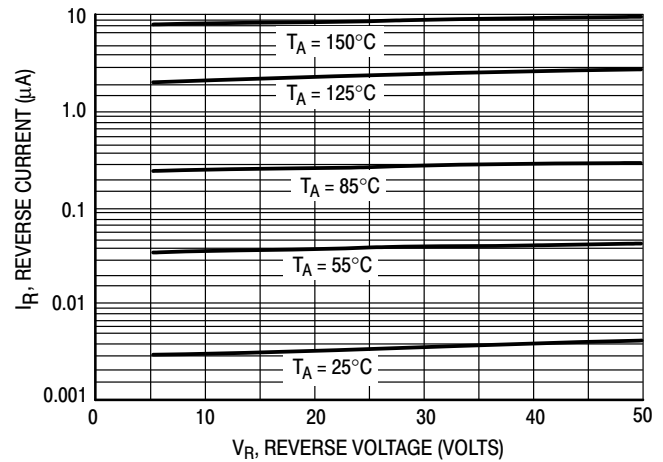


Figure 2. Reverse Current

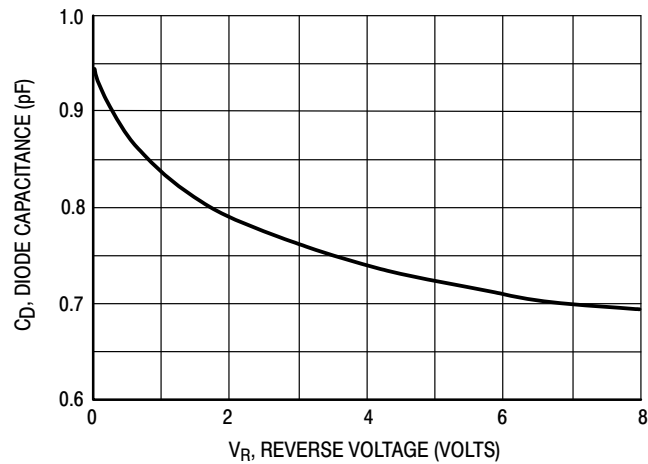
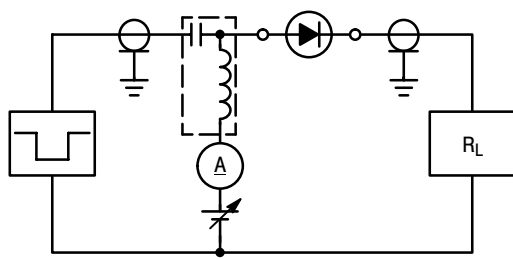
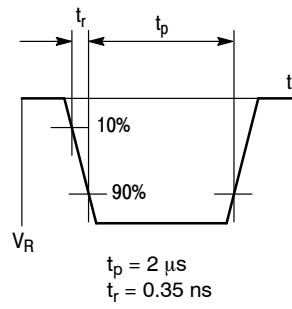


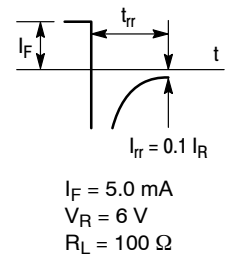
Figure 3. Diode Capacitance



RECOVERY TIME EQUIVALENT TEST CIRCUIT



INPUT PULSE



OUTPUT PULSE

Figure 4. Reverse Recovery Time Test Circuit for the DAN222

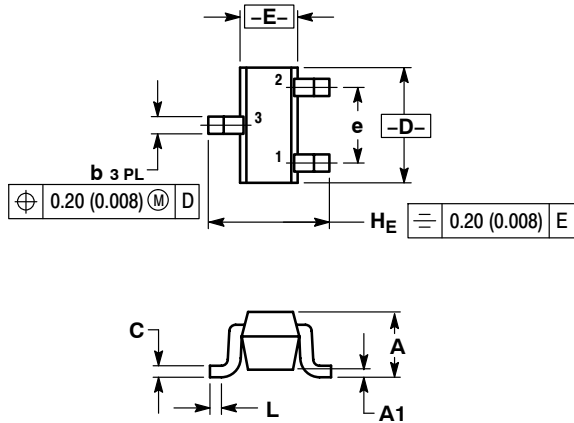
# DAN222, NSVDAN222

## PACKAGE DIMENSIONS

### SC-75/SOT-416

CASE 463

ISSUE F



#### NOTES:

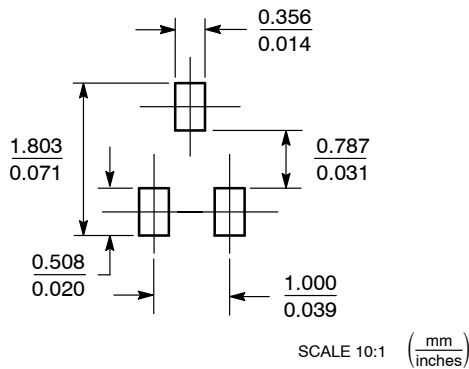
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETER.

| DIM            | MILLIMETERS |      |      | INCHES   |       |       |
|----------------|-------------|------|------|----------|-------|-------|
|                | MIN         | NOM  | MAX  | MIN      | NOM   | MAX   |
| A              | 0.70        | 0.80 | 0.90 | 0.027    | 0.031 | 0.035 |
| A1             | 0.00        | 0.05 | 0.10 | 0.000    | 0.002 | 0.004 |
| b              | 0.15        | 0.20 | 0.30 | 0.006    | 0.008 | 0.012 |
| C              | 0.10        | 0.15 | 0.25 | 0.004    | 0.006 | 0.010 |
| D              | 1.55        | 1.60 | 1.65 | 0.059    | 0.063 | 0.067 |
| E              | 0.70        | 0.80 | 0.90 | 0.027    | 0.031 | 0.035 |
| e              | 1.00 BSC    |      |      | 0.04 BSC |       |       |
| L              | 0.10        | 0.15 | 0.20 | 0.004    | 0.006 | 0.008 |
| H <sub>E</sub> | 1.50        | 1.60 | 1.70 | 0.061    | 0.063 | 0.065 |

#### STYLE 3:

1. ANODE
2. ANODE
3. CATHODE

### 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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