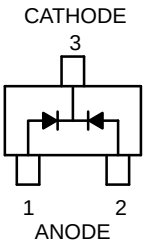
# Common Cathode Silicon Dual Switching Diode

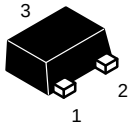
# DAN222M3T5G

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




**SOT-723**
**CASE 631AA**
**STYLE 3**

**MARKING DIAGRAM**




N9 = Specific Device Code
M = Date Code

**MAXIMUM RATINGS** ($T_A$ = 25 °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 | °C |
| Storage Temperature Range | $T_{stg}$ | −55 to +150 | °C |

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.
1. t = 1.0 μs.

**ORDERING INFORMATION**

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

†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.

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**ELECTRICAL CHARACTERISTICS** ($T_A$ = 25 °C)

| Characteristic | Symbol | Condition | Min | Max | Unit |
|---|---|---|---|---|---|
| Reverse Voltage Leakage Current (Note 2) | $I_R$ | $V_R$ = 70 V | – | 0.1 | μA |
| Forward Voltage | $V_F$ | $I_F$ = 100 mA | – | 1.2 | V |
| Reverse Breakdown Voltage | $V_R$ | $I_R$ = 100 μA | 80 | – | V |
| Diode Capacitance | $C_D$ | $V_R$ = 6.0 V, f = 1.0 MHz | – | 3.5 | pF |
| Reverse Recovery Time (Note 3) | $t_{rr}$ | $I_F$ = 5.0 mA, $V_R$ = 6.0 V, $R_L$ = 100 Ω, $I_{rr}$ = 0.1 $I_R$ | – | 4.0 | ns |

2. For each diode while other is not forward biased.
3. $t_{rr}$ Test Circuit on following page.

## TYPICAL ELECTRICAL CHARACTERISTICS

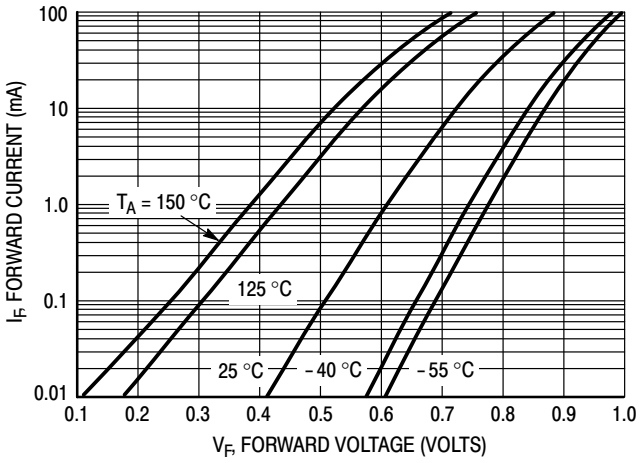



**Figure 1. Forward Voltage**

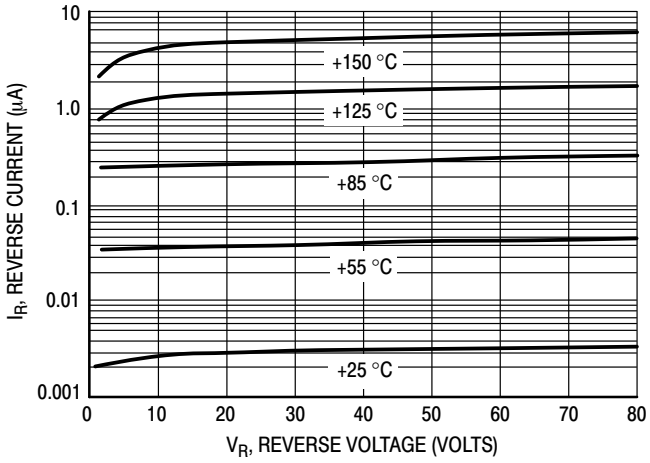



**Figure 2. Reverse Current**

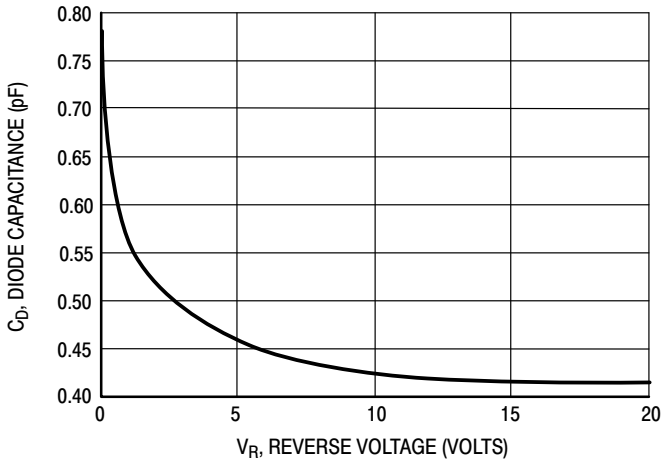
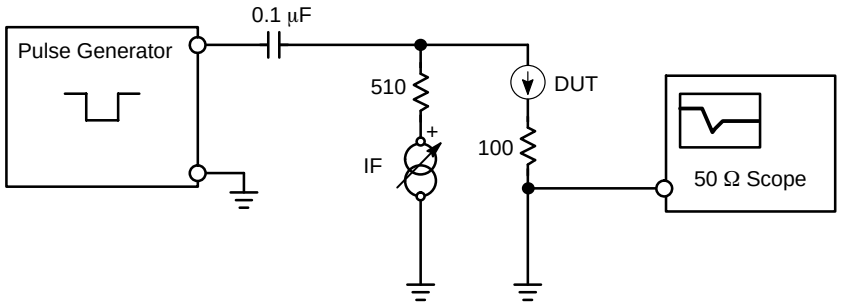



**Figure 3. Diode Capacitance**

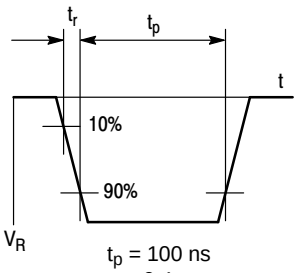


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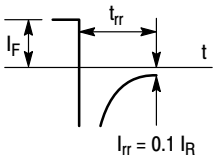



**RECOVERY TIME EQUIVALENT TEST CIRCUIT**




$t_p$ = 100 ns
$t_r$ = 0.4 ns
f = 5 kHz
$V_R$ = 6 V

**INPUT PULSE**




$I_F$ = 5.0 mA
$V_R$ = 6 V
$R_L$ = 100 Ω

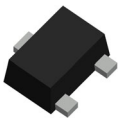
**OUTPUT PULSE**

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



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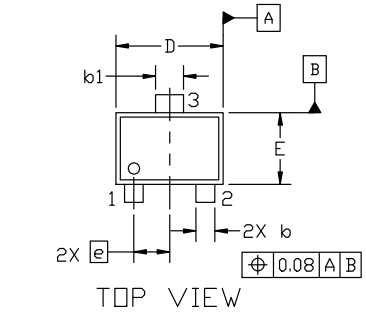


**SOT−723 1.20x0.80x0.50, 0.40P**
CASE 631AA
ISSUE E

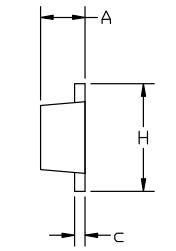
DATE 24 JAN 2024

NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 2018.
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.

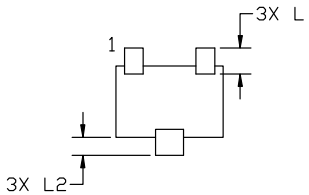
| DIM | MILLIMETERS | | |
|---|---|---|---|
| | MIN. | NOM. | MAX. |
| A | 0.45 | 0.50 | 0.55 |
| b | 0.15 | 0.21 | 0.27 |
| b1 | 0.25 | 0.31 | 0.37 |
| c | 0.07 | 0.12 | 0.17 |
| D | 1.15 | 1.20 | 1.25 |
| E | 0.75 | 0.80 | 0.85 |
| e | 0.40 BSC | | |
| H | 1.15 | 1.20 | 1.25 |
| L | 0.29 REF | | |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



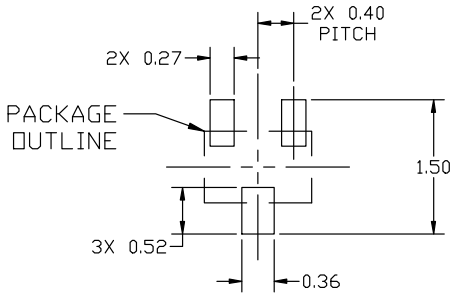
TOP VIEW



SIDE VIEW



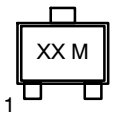
BOTTOM VIEW



RECOMMENDED MOUNTING
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.

**GENERIC**
**MARKING DIAGRAM***




XX = Specific Device Code
M = Date Code

*This information is generic. Please refer to device data sheet for actual part marking. Pb−Free indicator, “G” or microdot “▪”, may or may not be present. Some products may not follow the Generic Marking.

STYLE 1:
PIN 1. BASE
2. EMITTER
3. COLLECTOR

STYLE 2:
PIN 1. ANODE
2. N/C
3. CATHODE

STYLE 3:
PIN 1. ANODE
2. ANODE
3. CATHODE

STYLE 4:
PIN 1. CATHODE
2. CATHODE
3. ANODE

STYLE 5:
PIN 1. GATE
2. SOURCE
3. DRAIN

| | | |
|---|---|---|
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| **DESCRIPTION:** | **SOT−723 1.20x0.80x0.50, 0.40P** | **PAGE 1 OF 1** |

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