# Common Anode Silicon Dual Switching Diodes

## DAP222M3T5G

These Common Anode Silicon Epitaxial Planar Dual Diodes are designed for use in ultra high speed switching applications. The DAP222 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
- This is a Pb−Free Device

**ON Semiconductor®**

ANODE

3

1    2

CATHODE

### MARKING DIAGRAM

SOT−723
CASE 631AA
STYLE 4

P9 ⊠

P9 = 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

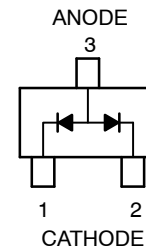| Rating | Symbol | Max | Unit |
|---|---|---|---|
| Power Dissipation | $P_D$ | 260 | mW |
| Junction Temperature | $T_J$ | 150 | °C |
| Storage Temperature | $T_{stg}$ | $-55 \sim +150$ | °C |

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.

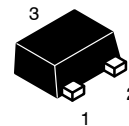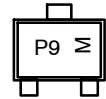### ORDERING INFORMATION

| Device | Package | Shipping[†] |
|---|---|---|
| DAP222M3T5G | 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.

**April, 2021 − Rev. 5**

**1**

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

| Characteristic | Symbol | Condition | Min | Max | Unit |
|---|---|---|---|---|---|
| Reverse Voltage Leakage Current | $I_R$ | $V_R$ = 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 | $t_{rr}$ (Note 2) | $I_F$ = 5.0 mA, $V_R$ = 6.0 V, $R_L$ = 100 Ω, $I_{rr}$ = 0.1 $I_R$ | – | 4.0 | ns |

2.  $t_{rr}$ Test Circuit for DAP222 in Figure 4.

## TYPICAL ELECTRICAL CHARACTERISTICS
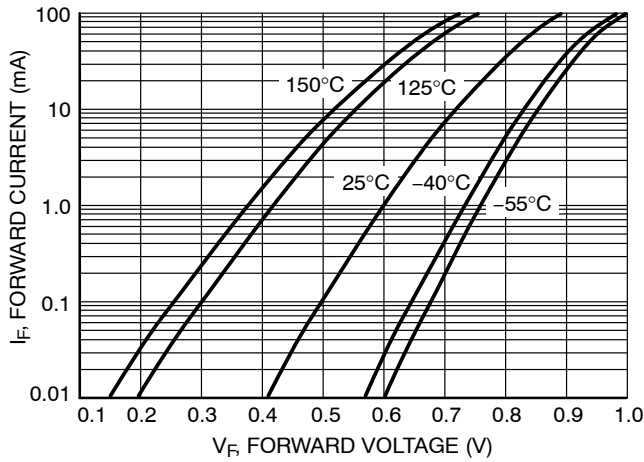


Figure 1. Forward Voltage
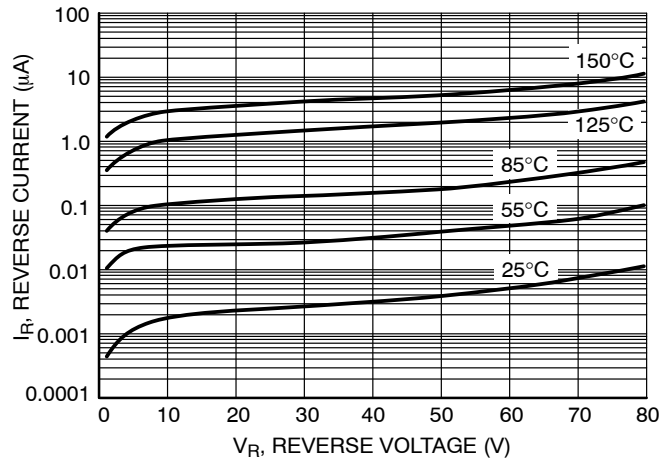


Figure 2. Reverse Current
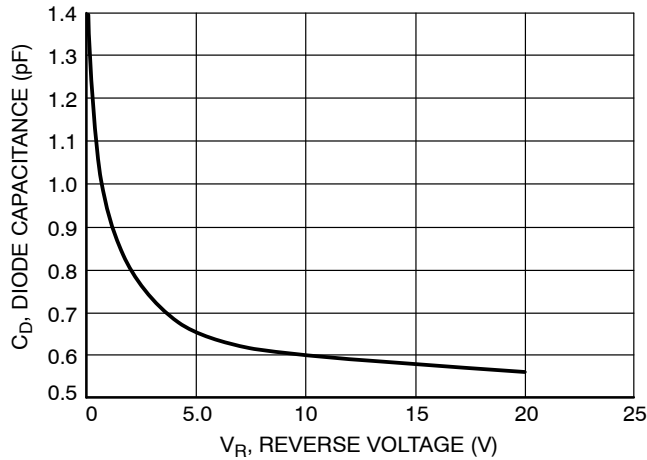


Figure 3. Diode Capacitance

# DAP222M3T5G
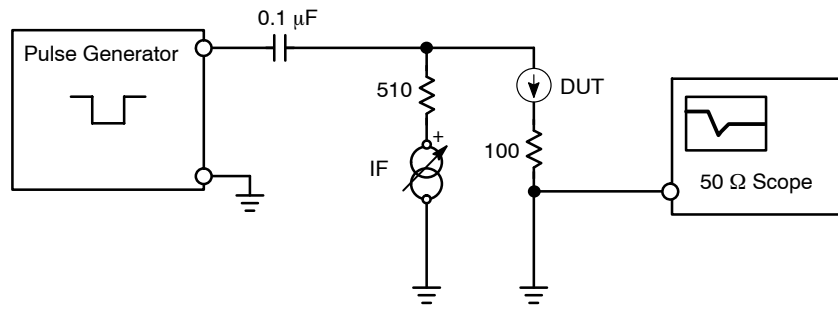


**RECOVERY TIME EQUIVALENT TEST CIRCUIT**



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

**INPUT PULSE**



$I_{rr}$ = 0.1 $I_R$

$I_F$ = 5.0 mA
$V_R$ = 6 V
$R_L$ = 100 Ω
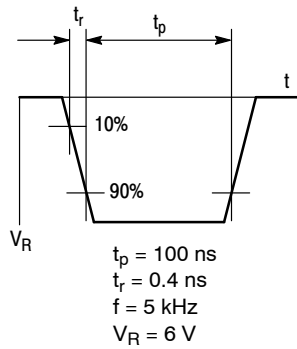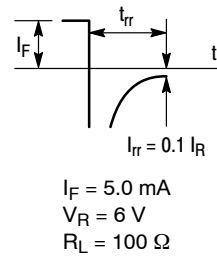
**OUTPUT PULSE**

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

# MECHANICAL CASE OUTLINE
## PACKAGE DIMENSIONS

**ON Semiconductor®**

**SOT−723**
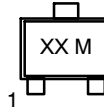CASE 631AA−01
ISSUE D

DATE 10 AUG 2009

**SCALE 4:1**

**TOP VIEW**

$\oplus$ | 0.08 | X | Y

**SIDE VIEW**

**BOTTOM VIEW**

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.

| 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 | | |
| $H_E$ | 1.15 | 1.20 | 1.25 |
| L | 0.29 REF | | |
| L2 | 0.15 | 0.20 | 0.25 |

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

**GENERIC MARKING DIAGRAM\***

XX M

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", may or not be present.

**RECOMMENDED SOLDERING FOOTPRINT\***

PACKAGE OUTLINE

DIMENSIONS: MILLIMETERS

\*For additional information on our Pb−Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

## PUBLICATION ORDERING INFORMATION

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