

# DAP222M3T5G

Preferred Device

## Product Preview

# Common Anode Silicon Dual Switching Diodes

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.

- Fast  $t_{rr}$
- Low  $C_D$
- ESD Performance: Human Body Model; > 2000 V,  
Machine Model > 200 V
- Available in 4 mm Tape and Reel
- This is a Pb-Free Device

### 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
Peak Forward Current	$I_{FM}$	300	mA
Peak Forward Surge Current	$I_{FSM}$ (Note 1)	2.0	A

### THERMAL CHARACTERISTICS

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

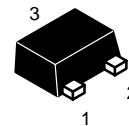
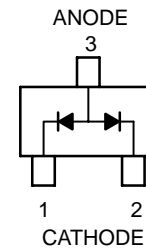
Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

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



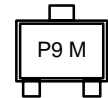
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### MARKING DIAGRAM

SOT-723  
CASE 631AA  
STYLE 4



P9 = Specific Device Code  
M = Date Code

### ORDERING INFORMATION

Device	Package	Shipping†
DAP222M3T5G	SOT-723	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.

Preferred devices are recommended choices for future use and best overall value.

This document contains information on a product under development. ON Semiconductor reserves the right to change or discontinue this product without notice.

# DAP222M3T5G

## 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	V
Reverse Breakdown Voltage	$V_R$	$I_R = 100\ \mu\text{A}$	80	–	V
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)	$I_F = 5.0\text{ mA}, V_R = 6.0\text{ V}, R_L = 100\ \Omega, I_{rr} = 0.1 I_R$	–	4.0	ns

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

# DAP222M3T5G

## TYPICAL ELECTRICAL CHARACTERISTICS

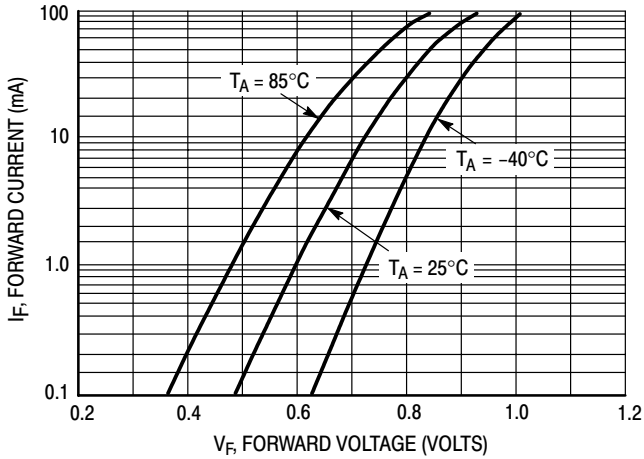


Figure 1. Forward Voltage

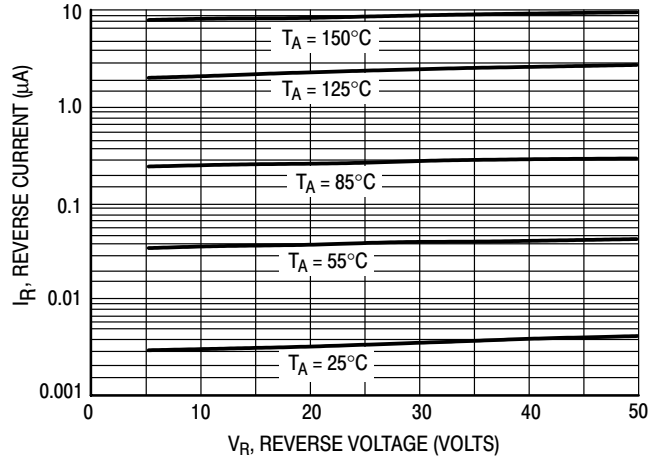


Figure 2. Reverse Current

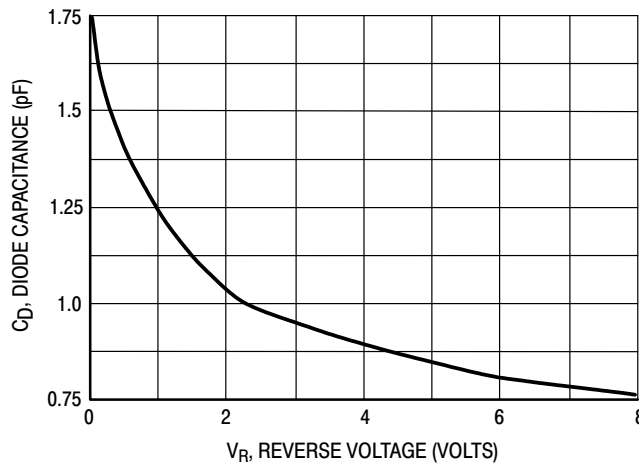
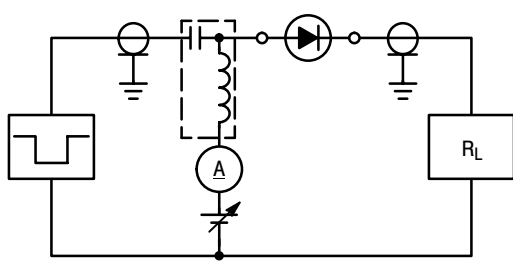
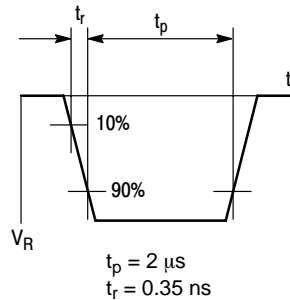


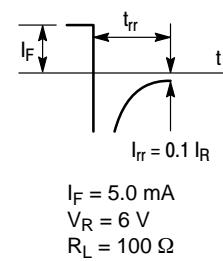
Figure 3. Diode Capacitance



RECOVERY TIME EQUIVALENT TEST CIRCUIT



INPUT PULSE



OUTPUT PULSE

$I_F = 5.0 \text{ mA}$   
 $V_R = 6 \text{ V}$   
 $R_L = 100 \Omega$

$t_p = 2 \mu\text{s}$   
 $t_r = 0.35 \text{ ns}$

Figure 4. Reverse Recovery Time Test Circuit

# MECHANICAL CASE OUTLINE

## PACKAGE DIMENSIONS

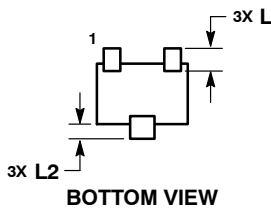
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SCALE 4:1

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

DATE 10 AUG 2009

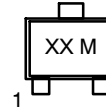


**NOTES:**

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

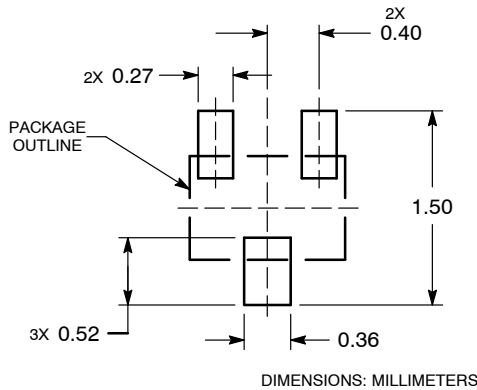
**GENERIC MARKING DIAGRAM\***



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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