DAP222, DAP202U

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 SC−75/SOT−416 package which is designed for low power surface mount applications, where board space is at a premium. The DAP202U device is housed in the SC−70/SOT−323 package.

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

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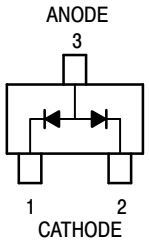


MAXIMUM RATINGS (T_A = 25°C)

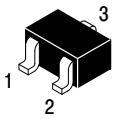
Rating	Symbol	Value	Unit
Reverse Voltage	V_R	80	Vdc
Peak Reverse Voltage	V_{RM}	80	Vdc
Forward Current	I_F	100	mAdc
Peak Forward Current	I_{FM}	300	mAdc
Peak Forward Surge Current	I_{FSM}(1)	2.0	Adc

THERMAL CHARACTERISTICS

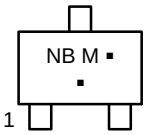
Rating	Symbol	Max	Unit
Power Dissipation	P_D	150	mW
Junction Temperature	T_J	150	°C
Storage Temperature	T_{stg}	−55 ~ +150	°C

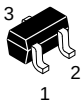
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

MARKING DIAGRAMS

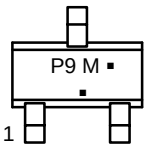


SC−70
CASE 419





SC−75
CASE 463
STYLE 4



NB, P9 = Device Codes
M = Date Code*
▪ = Pb−Free Package
(Note: Microdot may be in either location)

*Date Code orientation and/or orientation may vary depending upon manufacturing location.

ORDERING INFORMATION

Device	Package	Shipping†
DAP202UG	SC−70 (Pb−Free)	3000 / Tape & Reel
DAP222G	SC−75 (Pb−Free)	3000 / Tape & Reel
DAP222T1G	SC−75 (Pb−Free)	3000 / Tape & Reel
NSVDAP222T1G	SC−75 (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.

ELECTRICAL CHARACTERISTICS (T_A = 25°C)

Characteristic	Symbol	Condition	Min	Max	Unit
Reverse Voltage Leakage Current	I_R	V_R = 70 V	–	0.1	μAdc
Forward Voltage	V_F	I_F = 100 mA	–	1.2	Vdc
Reverse Breakdown Voltage	V_R	I_R = 100 μA	80	–	Vdc
Diode Capacitance	C_D	V_R = 6.0 V, f = 1.0 MHz	–	3.5	pF
Reverse Recovery Time DAP222 DAP202U	t_{rr}(2) t_{tt}(3)	I_F = 5.0 mA, V_R = 6.0 V, R_L = 100 Ω, I_{rr} = 0.1 I_R I_F = 5.0 mA, V_R = 6.0 V, R_L = 50 Ω, I_{rr} = 0.1 I_R	– –	4.0 10.0	ns

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

1. t = 1 μS
2. t_{rr} Test Circuit for DAP222 in Figure 4.
3. trr Test Circuit for DAP202U in Figure 5.

TYPICAL ELECTRICAL CHARACTERISTICS

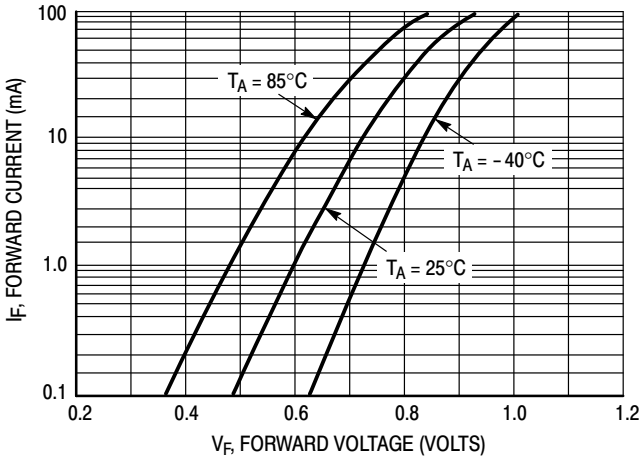


Figure 1. Forward Voltage

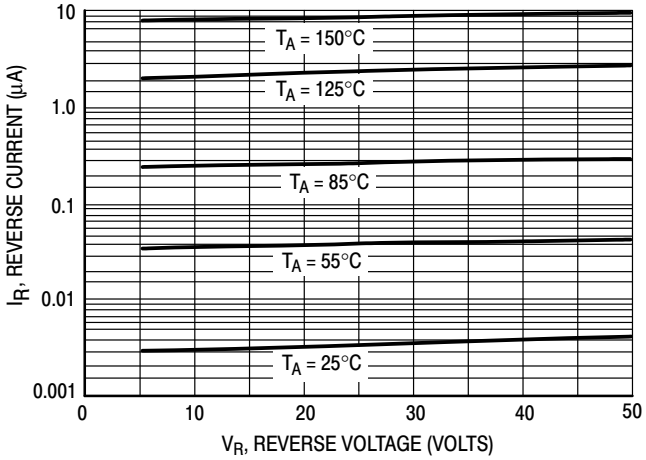


Figure 2. Reverse Current

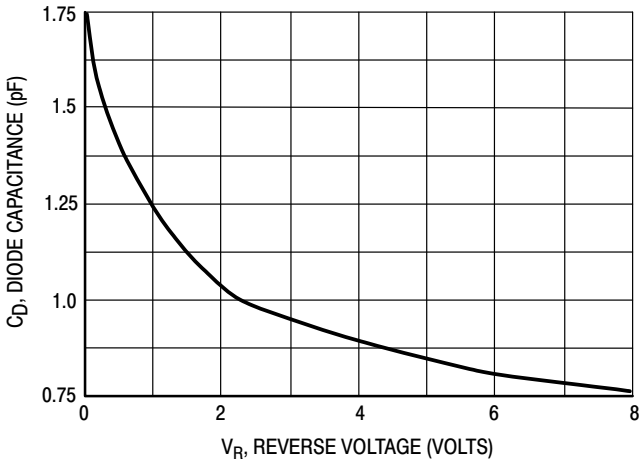
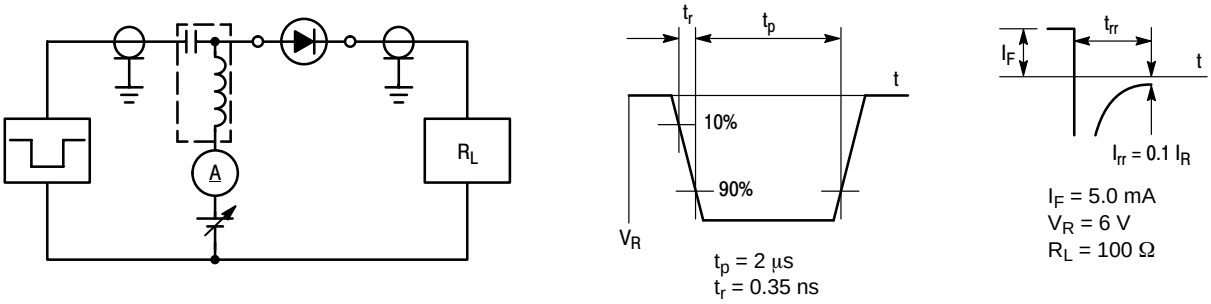
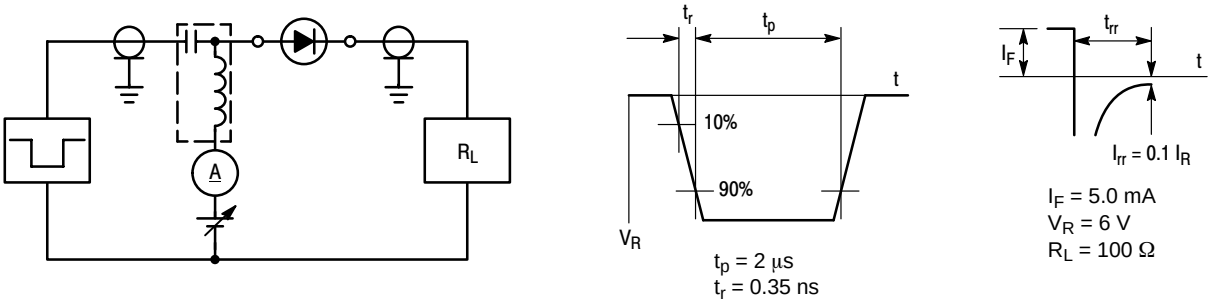


Figure 3. Diode Capacitance



RECOVERY TIME EQUIVALENT TEST CIRCUIT **INPUT PULSE** **OUTPUT PULSE**

Figure 4. Reverse Recovery Time Test Circuit for the DAP222

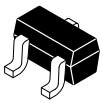


RECOVERY TIME EQUIVALENT TEST CIRCUIT **INPUT PULSE** **OUTPUT PULSE**

Figure 5. Reverse Recovery Time Test Circuit for the DAP202U

MECHANICAL CASE OUTLINE
PACKAGE DIMENSIONS

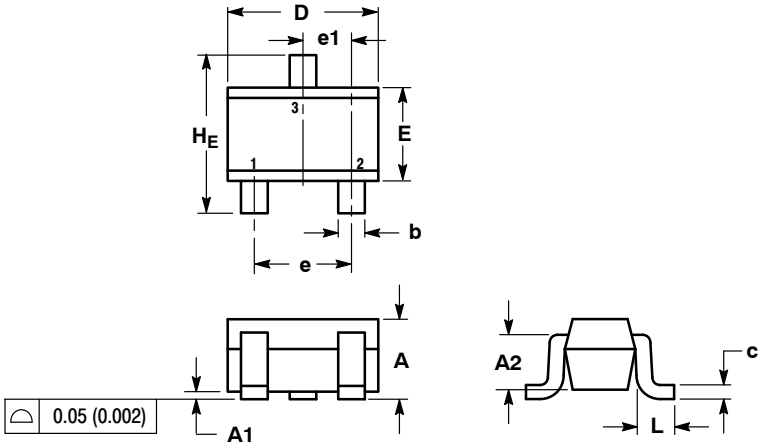
ON Semiconductor®



SCALE 4:1

SC−70 (SOT−323)
CASE 419−04
ISSUE N

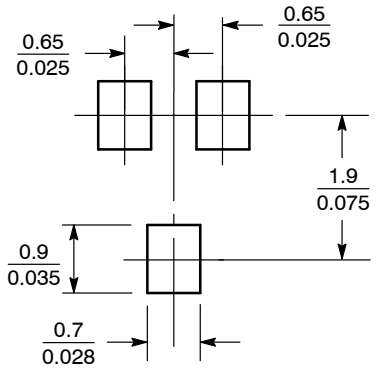
DATE 11 NOV 2008



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

	MILLIMETERS			INCHES		
DIM	MIN	NOM	MAX	MIN	NOM	MAX
A	0.80	0.90	1.00	0.032	0.035	0.040
A1	0.00	0.05	0.10	0.000	0.002	0.004
A2		0.70 REF			0.028 REF	
b	0.30	0.35	0.40	0.012	0.014	0.016
c	0.10	0.18	0.25	0.004	0.007	0.010
D	1.80	2.10	2.20	0.071	0.083	0.087
E	1.15	1.24	1.35	0.045	0.049	0.053
e	1.20	1.30	1.40	0.047	0.051	0.055
e1		0.65 BSC			0.026 BSC	
L	0.20	0.38	0.56	0.008	0.015	0.022
HE	2.00	2.10	2.40	0.079	0.083	0.095

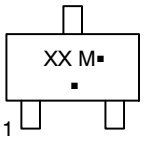
SOLDERING FOOTPRINT*



SCALE 10:1 (mm / inches)

*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
▪ = Pb−Free Package

*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.

STYLE 1:
CANCELLED

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

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

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

STYLE 5:
PIN 1. ANODE
2. ANODE
3. CATHODE

STYLE 6:
PIN 1. EMITTER
2. BASE
3. COLLECTOR

STYLE 7:
PIN 1. BASE
2. EMITTER
3. COLLECTOR

STYLE 8:
PIN 1. GATE
2. SOURCE
3. DRAIN

STYLE 9:
PIN 1. ANODE
2. CATHODE
3. CATHODE−ANODE

STYLE 10:
PIN 1. CATHODE
2. ANODE
3. ANODE−CATHODE

STYLE 11:
PIN 1. CATHODE
2. CATHODE
3. CATHODE

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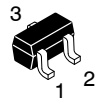
DESCRIPTION:	**SC−70 (SOT−323)**	**PAGE 1 OF 1**

MECHANICAL CASE OUTLINE
PACKAGE DIMENSIONS

ON Semiconductor®

SC−75/SOT−416
CASE 463−01
ISSUE G

DATE 07 AUG 2015



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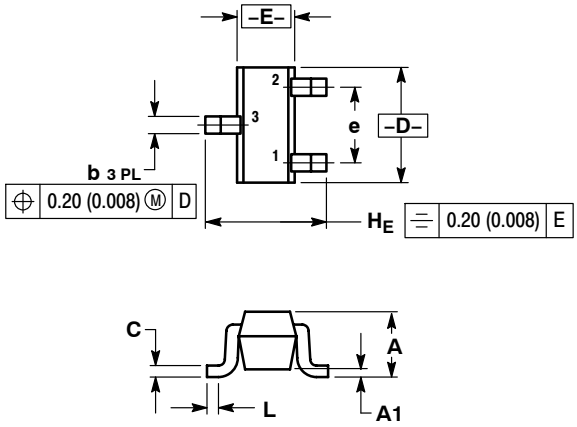


NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETER.

	MILLIMETERS			INCHES		
DIM	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	0.061	0.063	0.065
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_E	1.50	1.60	1.70	0.060	0.063	0.067

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

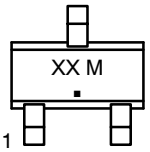
STYLE 2:
PIN 1. ANODE
2. N/C
3. CATHODE

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*



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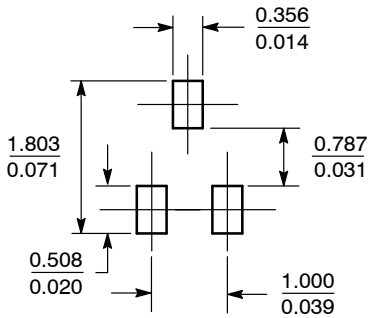
SOLDERING FOOTPRINT*



SCALE 10:1 (mm / inches)

*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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DESCRIPTION:	**SC−75/SOT−416**	**PAGE 1 OF 1**

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