

NSDEMP11XV6T1, NSDEMP11XV6T5

Common Anode Quad Array Switching Diode

These Common Anode Epitaxial Planar QUAD Diodes are designed for use in ultra high speed switching applications. The NSDEMP11XV6T1 device is housed in the SOT-563 package which is designed for low power surface mount applications, where board space is at a premium.

Features

- Fast t_{rr}
- Low C_D
- These are Pb-Free Devices

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	I_{FSM} (Note 1)	2.0	Adc

THERMAL CHARACTERISTICS

Characteristic (One Junction Heated)	Symbol	Max	Unit
Total Device Dissipation $T_A = 25^\circ\text{C}$	P_D	357 (Note 2)	mW
Derate above 25°C		2.9 (Note 2)	mW/ $^\circ\text{C}$
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	350 (Note 2)	$^\circ\text{C/W}$
Characteristic (Both Junctions Heated)	Symbol	Max	Unit
Total Device Dissipation $T_A = 25^\circ\text{C}$	P_D	500 (Note 2)	mW
Derate above 25°C		4.0 (Note 2)	mW/ $^\circ\text{C}$
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	250 (Note 2)	$^\circ\text{C/W}$
Junction and Storage Temperature	T_J, 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.

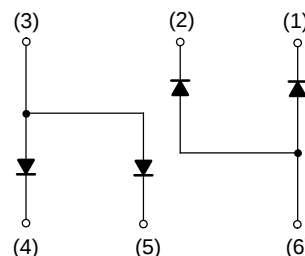
1. $t = 1 \mu\text{s}$

2. FR-4 @ Minimum Pad



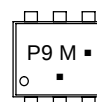
ON Semiconductor®

<http://onsemi.com>



SOT-563
CASE 463A
PLASTIC

MARKING DIAGRAM



P9 = Device Code

M = Date Code

■ = Pb-Free Package

(Note: Microdot may be in either location)

ORDERING INFORMATION

Device	Package	Shipping†
NSDEMP11XV6T1	SOT-563*	4000/Tape & Reel
NSDEMP11XV6T1G	SOT-563*	4000/Tape & Reel
NSDEMP11XV6T5	SOT-563*	8000/Tape & Reel
NSDEMP11XV6T5G	SOT-563*	8000/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.

*This package is inherently Pb-Free.

NSDEMP11XV6T1, NSDEMP11XV6T5

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	μA
Forward Voltage	V_F	$I_F = 100\text{ mA}$	–	1.2	Vdc
Reverse Breakdown Voltage	V_R	$I_R = 100\text{ }\mu\text{A}$	0	–	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 3)	$I_F = 5.0\text{ mA}, V_R = 6.0\text{ V}, R_L = 100\text{ }\Omega, I_{rr} = 0.1 I_R$	–	4.0	ns

3. t_{rr} Test Circuit for NSDEMP11XV6T1 in Figure 4.

TYPICAL ELECTRICAL CHARACTERISTICS

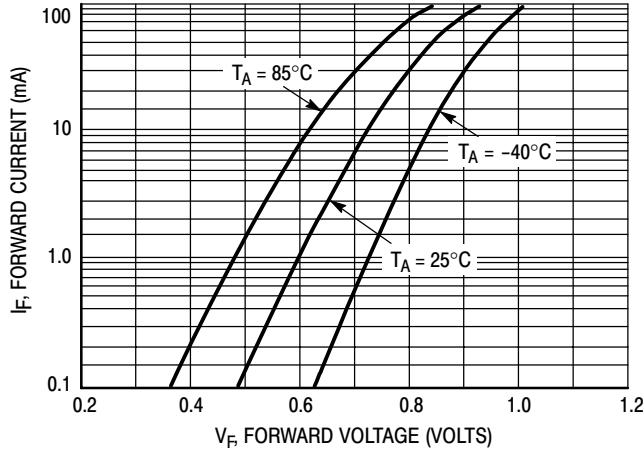


Figure 1. Forward Voltage

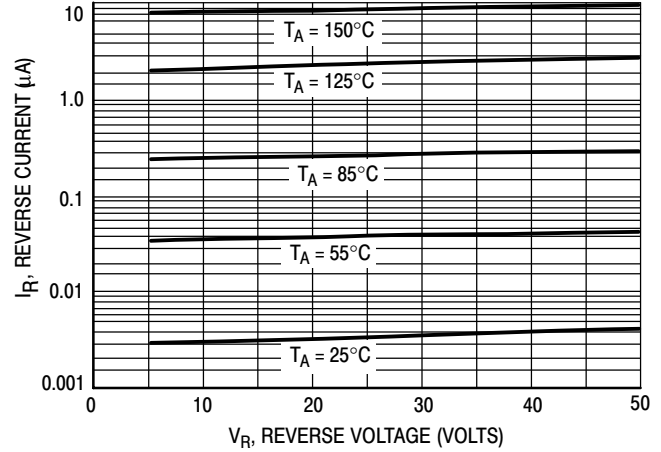


Figure 2. Reverse Current

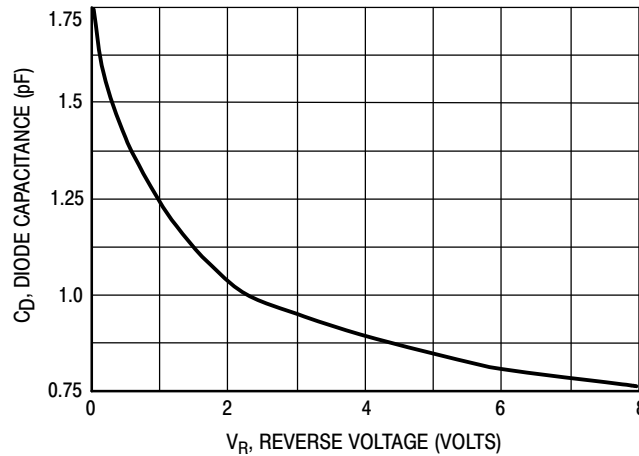
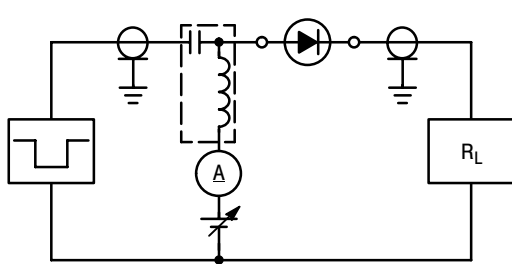
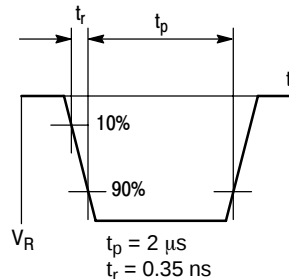


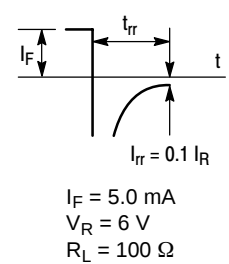
Figure 3. Diode Capacitance



RECOVERY TIME EQUIVALENT TEST CIRCUIT



INPUT PULSE



OUTPUT PULSE

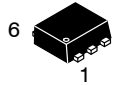
Figure 4. Reverse Recovery Time Test Circuit for the NSDEMP11XV6T1

MECHANICAL CASE OUTLINE

PACKAGE DIMENSIONS

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ON



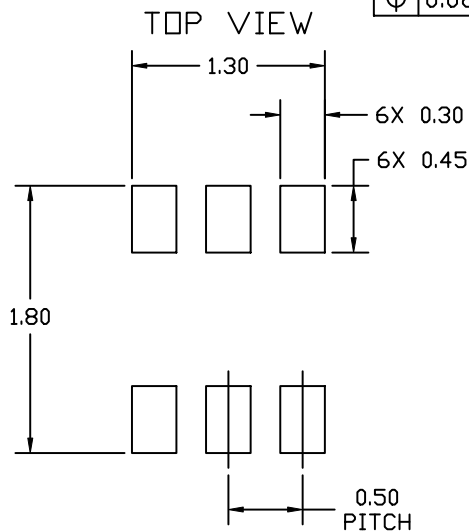
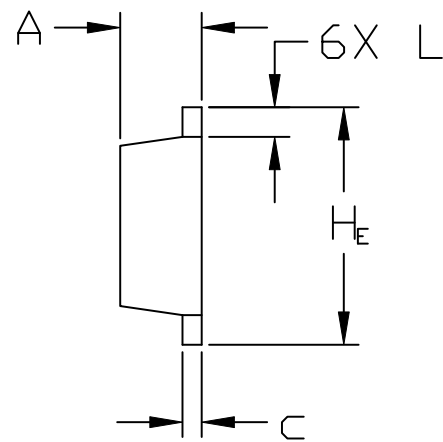
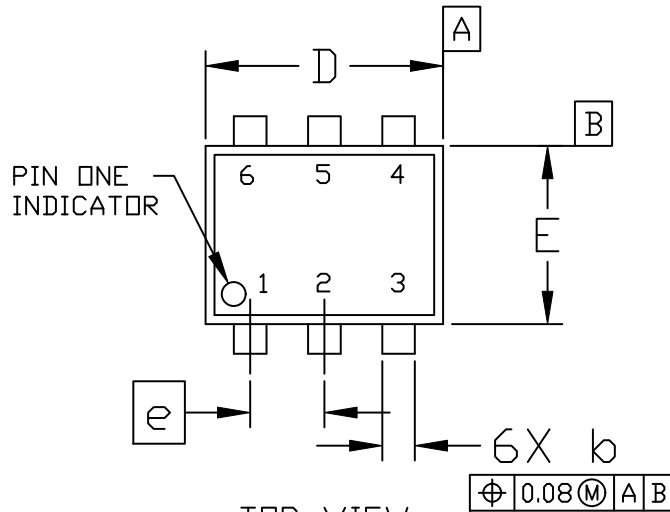
SCALE 4:1

SOT-563, 6 LEAD
CASE 463A
ISSUE H

DATE 26 JAN 2021

NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 2009.
2. CONTROLLING DIMENSION: MILLIMETERS
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.



SIDE VIEW

DIM	MILLIMETERS		
	MIN.	NOM.	MAX.
A	0.50	0.55	0.60
b	0.17	0.22	0.27
c	0.08	0.13	0.18
D	1.50	1.60	1.70
E	1.10	1.20	1.30
e	0.50 BSC		
L	0.10	0.20	0.30
H _E	1.50	1.60	1.70

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.

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SOT-563, 6 LEAD
CASE 463A
ISSUE H

DATE 26 JAN 2021

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

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

STYLE 3:
PIN 1. CATHODE 1
2. CATHODE 1
3. ANODE/ANODE 2
4. CATHODE 2
5. CATHODE 2
6. ANODE/ANODE 1

STYLE 4:
PIN 1. COLLECTOR
2. COLLECTOR
3. BASE
4. EMITTER
5. COLLECTOR
6. COLLECTOR

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

STYLE 6:
PIN 1. CATHODE
2. ANODE
3. CATHODE
4. CATHODE
5. CATHODE
6. CATHODE

STYLE 7:
PIN 1. CATHODE
2. ANODE
3. CATHODE
4. CATHODE
5. ANODE
6. CATHODE

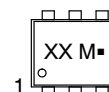
STYLE 8:
PIN 1. DRAIN
2. DRAIN
3. GATE
4. SOURCE
5. DRAIN
6. DRAIN

STYLE 9:
PIN 1. SOURCE 1
2. GATE 1
3. DRAIN 2
4. SOURCE 2
5. GATE 2
6. DRAIN 1

STYLE 10:
PIN 1. CATHODE 1
2. N/C
3. CATHODE 2
4. ANODE 2
5. N/C
6. ANODE 1

STYLE 11:
PIN 1. EMITTER 2
2. BASE 2
3. COLLECTOR 1
4. EMITTER 1
5. BASE 1
6. COLLECTOR 2

**GENERIC
MARKING DIAGRAM***



XX = Specific Device Code
M = Month 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. Some products may not follow the Generic Marking.

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