

ON Semiconductor

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PIN Diode

Single PIN Diode for Attenuator and RF Switch

NSDP301MX3

Low r_s characteristics is enable to use high frequency applications. This PIN diode is designed to realize compact and efficient designs. NSDP301MX3 in a X3DFN2 miniature package enables designers to meet the challenging task of achieving higher efficiency and meeting reduced space requirements.

Features

- Low Series Resistance ($r_s = 1.3 \Omega$ typ.)
- Small Interterminal Capacitance ($C = 0.33$ pF typ.)
- Less Parasitic Components
- Small-sized Package X3DFN2
- Pb-Free, Halogen Free and RoHS Compliance

Typical Applications

- RF Attenuator
- RF Switch

MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$)

Parameter	Symbol	Value	Unit
Reverse Voltage	V_R	80	V
Forward Current	I_F	100	mA
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 to +150	$^\circ\text{C}$

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.



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80 V, 100 mA
 $r_s = 1.3 \Omega$ typ.
PIN Diode



X3DFN2
CASE 152AF

MARKING DIAGRAM



R = Specific Device Code
M = Date Code

ORDERING INFORMATION

Device	Package	Shipping†
NSDP301MX3T5G	X3DFN2 (Pb-Free)	10,000 / 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.

NSDP301MX3

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Reverse Voltage	V _R	I _R = 1 μA	80			V
Reverse Current	I _R	V _R = 80 V			50	nA
Forward Voltage	V _F	I _F = 1 mA		0.78	0.81	V
Series Resistance	r _s	I _F = 10 mA, f = 100 MHz		1.3		Ω
Interterminal Capacitance	C	V _R = 0 V, f = 1 MHz		0.33		pF

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.

NSDP301MX3

TYPICAL CHARACTERISTICS

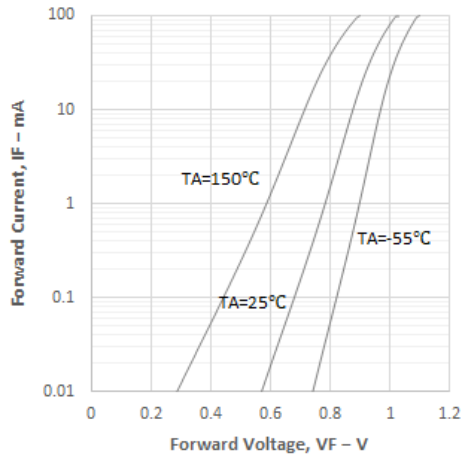


Figure 1. I_F – V_F

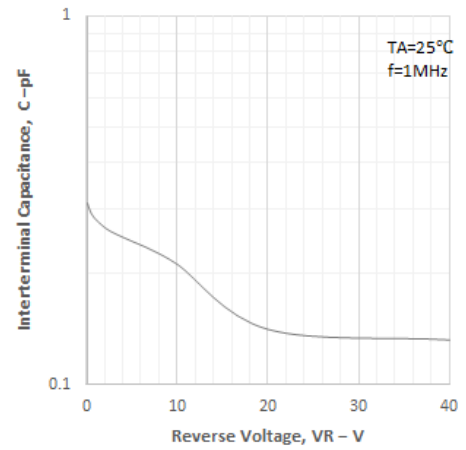


Figure 2. C – V_R

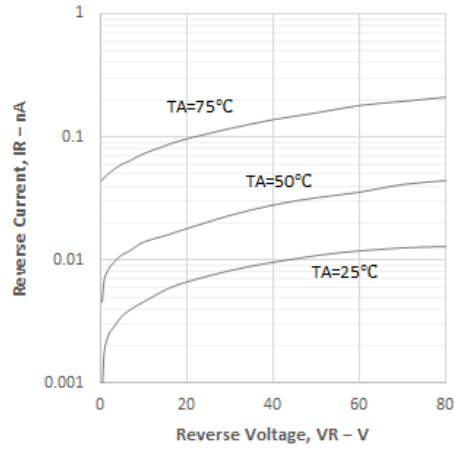


Figure 3. I_R – V_R

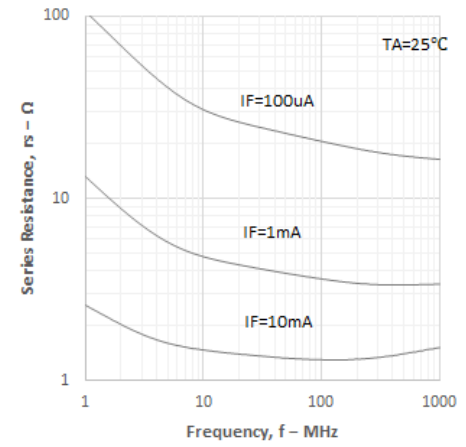


Figure 4. r_s – f

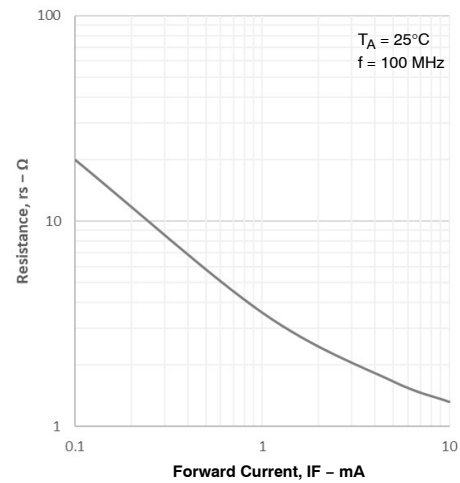


Figure 5. r_s – I_F

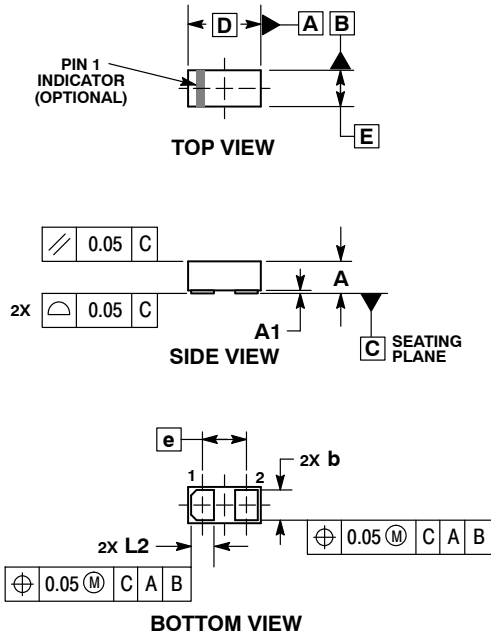
NSDP301MX3

PACKAGE DIMENSIONS

X3DFN2, 0.62x0.32, 0.355P, (0201)

CASE 152AF

ISSUE A

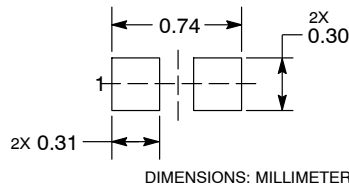


NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.

MILLIMETERS		
DIM	MIN	MAX
A	0.25	0.33
A1	0.05	
b	0.22	0.28
D	0.58	0.66
E	0.28	0.36
e	0.355 BSC	
L2	0.17	0.23

RECOMMENDED MOUNTING FOOTPRINT*



See Application Note AND8398/D for more mounting details

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

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