NSR201MX

Schottky Barrier Diode for Mixer and Detector

This Schottky Barrier Diode is designed for high frequency application. It can be used widely for power detector of C Band and Mixer of Ku Band etc. X2DFN2 package is suitable for compact and efficient designs.

Features

- Small Interterminal Capacitance
- Less Parasitic Components
- Small Forward Voltage
- Small−sized Package
- Pb−Free, Halogen Free and RoHS compliance

Typical Applications

- Microwave and Submilliwave Mixer
- Microwave and Submilliwave Power Detector

Specifications

Table 1. ABSOLUTE MAXIMUM RATINGS at T_A = 25°C

Parameter	Symbol	Value	Unit
Reverse Voltage	V_R	2	V
Forward Current	I_F	50	mA
Operating Junction and Storage Temperature	T_J, T_{stg}	−55 to +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.

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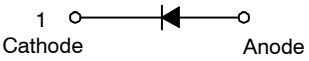
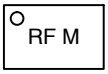
2 V, 50 mA
C = 0.15 pF typ.
Schottky Barrier Diode

X2DFN2 1.0 x 0.6, 0.65P
CASE 714AB

ELECTRICAL CONNECTION



MARKING DIAGRAM



RF = Specific Device Code
M = Date Code

ORDERING INFORMATION

See detailed ordering and shipping information on page 2 of this data sheet.

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Table 2. ORDERING INFORMATION

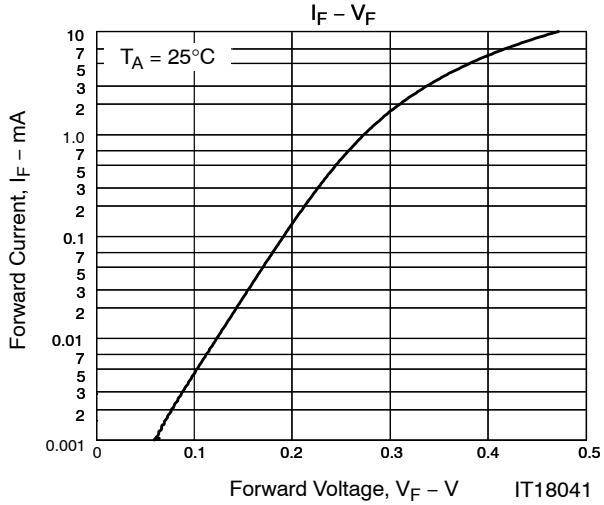
Device	Marking	Package	Shipping†
NSR201MXT5G	RF	X2DFN2 1.0 x 0.65 P (Pb−Free / Halogen Free)	8,000 / Tape & Real

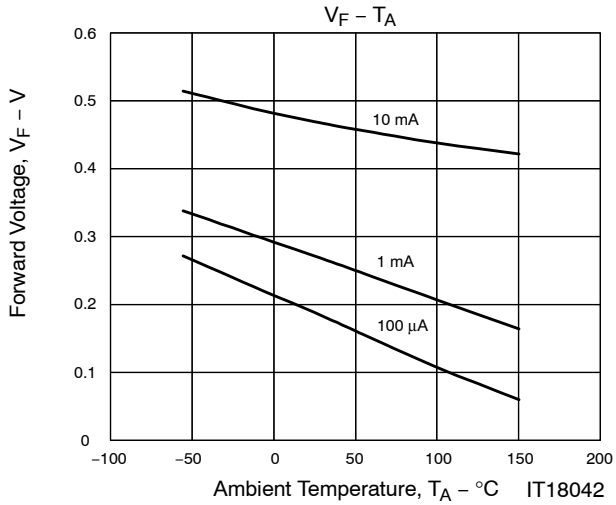
†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification Brochure, BRD8011/D.

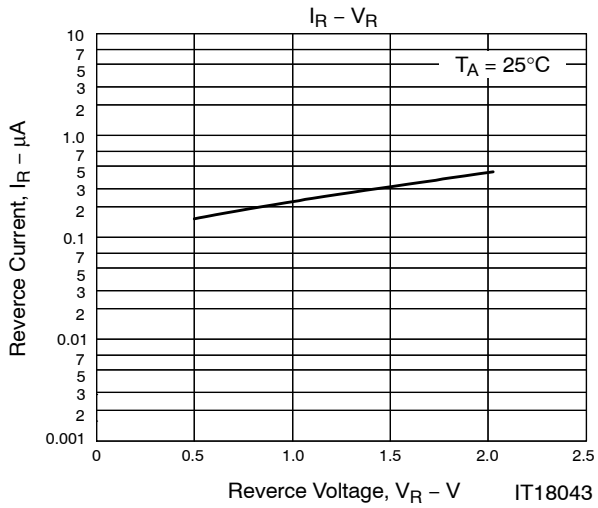
Table 3. ELECTRICAL CHARACTERISTICS at T_A = 25°C (Notes 1, 2)

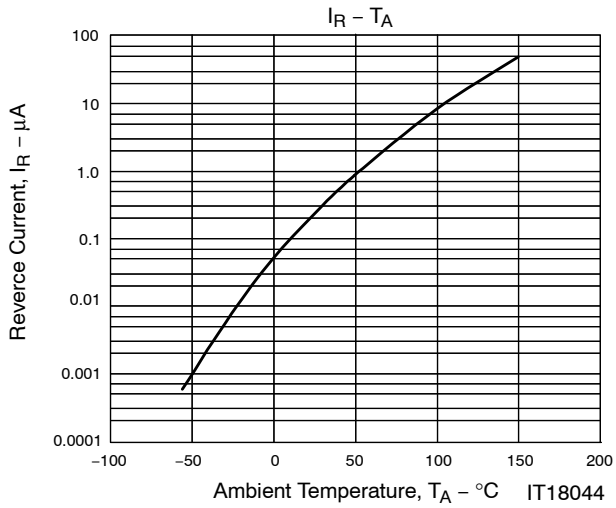
Parameter	Symbol	Conditions	Value			Units
			Min	Typ	Max	
Reverse Voltage	V_R	I_R = 10 μA	2			V
Forward Voltage	V_F	I_F = 1 mA			320	mV
Series Resistance	R_S	I_F = 10 mA		14	18	Ω
Interterminal Capacitance	C	V_R = 0 V, f = 1 MHz		0.15	0.20	pF

1. 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.
2. Pay attention to handling since it is liable to be affected by static electricity due to the high−frequency process adopted.


$I_F - V_F$
T_A = 25°C
Forward Current, I_F – mA
Forward Voltage, V_F – V
IT18041


$V_F - T_A$
10 mA
1 mA
100 µA
Forward Voltage, V_F – V
Ambient Temperature, T_A – °C
IT18042


$I_R - V_R$
T_A = 25°C
Reverce Current, I_R – µA
Reverce Voltage, V_R – V
IT18043


$I_R - T_A$
Reverce Current, I_R – µA
Ambient Temperature, T_A – °C
IT18044

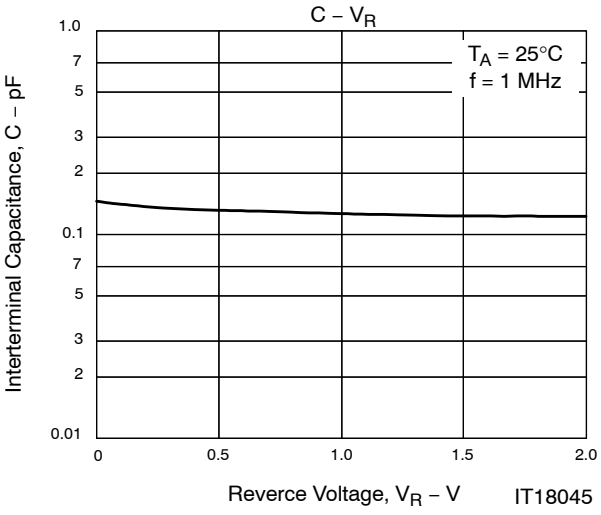

$C - V_R$
T_A = 25°C
f = 1 MHz
Interterminal Capacitance, C – pF
Reverce Voltage, V_R – V
IT18045

Figure 1.

Table 4. S PARAMETER (Z_O = 50 Ω)

Freq [GHz]	I = 0 mA		I = 0.02 mA		I = 0.05 mA		I = 0.1 mA		I = 0.2 mA		I = 0.5 mA	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
1	0.964	−4.4	0.988	−4.3	0.978	−4.3	0.963	−4.3	0.933	−4.4	0.845	−4.3
2	0.967	−9.7	0.990	−9.6	0.981	−9.6	0.966	−9.7	0.937	−9.7	0.852	−9.5
3	0.957	−15.2	0.981	−15.1	0.971	−15.2	0.956	−15.2	0.925	−15.4	0.838	−15.7
4	0.956	−20.5	0.980	−20.3	0.970	−20.5	0.956	−20.5	0.925	−20.6	0.840	−20.4
5	0.961	−26.0	0.986	−25.7	0.977	−25.9	0.960	−26.0	0.929	−26.2	0.838	−26.3
6	0.954	−32.3	0.981	−31.9	0.970	−32.1	0.953	−32.3	0.919	−32.5	0.822	−32.5
7	0.943	−39.2	0.969	−38.7	0.959	−39.0	0.942	−39.2	0.909	−39.6	0.814	−40.4
8	0.943	−45.7	0.967	−45.2	0.958	−45.4	0.942	−45.7	0.911	−46.2	0.823	−47.4
9	0.947	−52.8	0.975	−52.2	0.963	−52.5	0.946	−52.8	0.910	−53.3	0.809	−54.2
10	0.940	−60.6	0.968	−59.9	0.957	−60.2	0.938	−60.6	0.902	−61.2	0.799	−62.6
11	0.921	−69.7	0.950	−68.9	0.939	−69.3	0.919	−69.7	0.883	−70.4	0.777	−72.0
12	0.895	−80.4	0.928	−79.4	0.914	−79.9	0.893	−80.4	0.852	−81.2	0.738	−83.5
13	0.882	−88.8	0.912	−87.7	0.900	−88.2	0.881	−88.8	0.843	−89.6	0.735	267.9
14	0.872	261.9	0.906	263.1	0.893	262.4	0.871	261.9	0.831	261.0	0.715	258.8
15	0.870	252.7	0.900	253.9	0.887	253.2	0.868	252.6	0.830	251.6	0.723	249.0
16	0.874	242.8	0.903	244.1	0.891	243.4	0.873	242.7	0.838	241.6	0.733	238.1
17	0.874	231.6	0.907	233.1	0.894	232.3	0.873	231.6	0.833	230.4	0.720	227.0
18	0.877	220.8	0.911	222.5	0.898	221.6	0.875	220.7	0.833	219.3	0.715	215.4
19	0.860	210.3	0.895	212.1	0.881	211.1	0.859	210.2	0.817	208.7	0.700	204.2
20	0.847	198.7	0.880	200.7	0.866	199.6	0.845	198.7	0.806	197.2	0.692	192.7
21	0.841	185.5	0.875	187.4	0.860	186.4	0.840	185.4	0.800	184.0	0.687	179.7
22	0.847	171.1	0.883	173.3	0.868	172.2	0.846	171.1	0.803	169.3	0.683	164.0
23	0.845	157.2	0.877	159.6	0.864	158.3	0.843	157.1	0.804	155.1	0.696	149.5
24	0.822	142.0	0.854	144.5	0.840	143.2	0.821	142.1	0.782	140.1	0.680	134.7
25	0.823	130.3	0.852	132.6	0.840	131.4	0.822	130.3	0.788	128.6	0.695	123.3
26	0.833	118.3	0.863	120.7	0.850	119.5	0.832	118.2	0.797	116.5	0.703	111.1

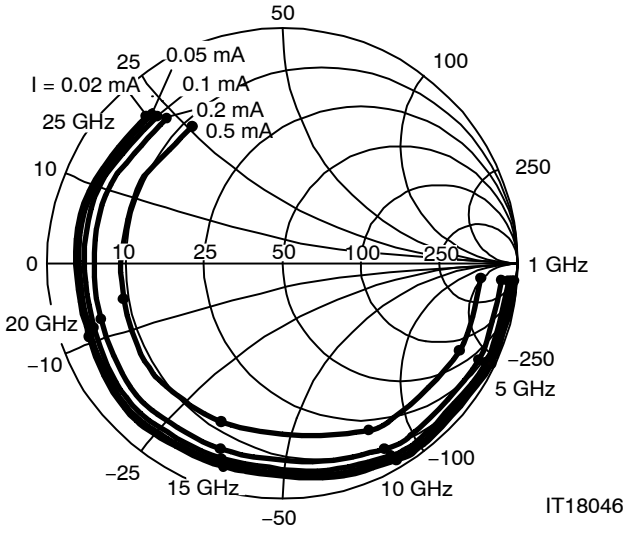


Figure 2.

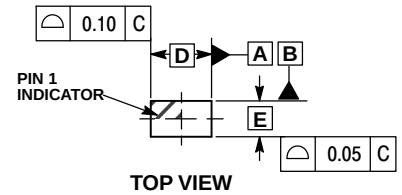
MECHANICAL CASE OUTLINE
PACKAGE DIMENSIONS

ON Semiconductor®

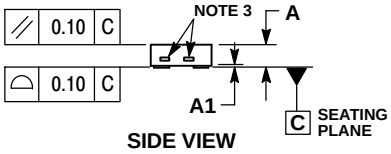
X2DFN2 1.0x0.6, 0.65P
CASE 714AB
ISSUE B

SCALE 8:1

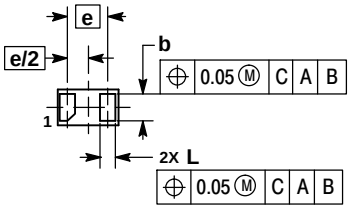
DATE 21 NOV 2017



TOP VIEW



SIDE VIEW

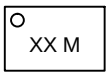


BOTTOM VIEW

NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. EXPOSED COPPER ALLOWED AS SHOWN.

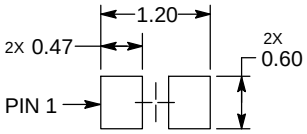
DIM	MILLIMETERS		
	MIN	NOM	MAX
A	0.34	0.37	0.40
A1	–––	0.03	0.05
b	0.45	0.50	0.55
D	0.95	1.00	1.05
E	0.55	0.60	0.65
e	0.65 BSC		
L	0.20	0.25	0.30

GENERIC MARKING DIAGRAM*



XX = Specific Device Code
M = Date Code

RECOMMENDED SOLDER FOOTPRINT*



DIMENSIONS: MILLIMETERS

*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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DESCRIPTION:	**X2DFN2 1.0X0.6, 0.65P**		**PAGE 1 OF 2**

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