

## **Ku-band 1.5W BUC**

RF Frequency:

13.75 to 14.5 GHz and 14.0 to 14.5 GHz

### Model No. NJT8301 series

RF Frequency : 14.0 to 14.5 GHz / 13.75 to 14.5 GHz  
LO Frequency : 13.05 GHz / 12.80 GHz  
IF Frequency : 950 to 1,450 MHz / 950 to 1,700 MHz  
Output Power @ 1dB G.C.P. :  
+31.0 dBm (1.5W)  
IF / Ref. (10MHz) Input :  
N-type / F-type, Female Connector  
DC Power Input : IF Connector

## **Specifications**

Rev.09 February 3, 2017

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New Japan Radio Co., Ltd.  
Microwave Division

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## Caution

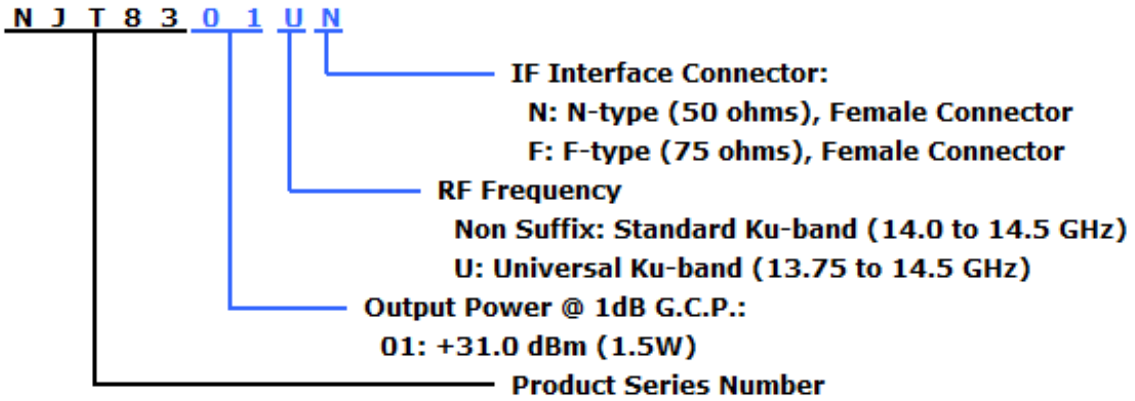
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### Model Number

- Numbering System



- Line-up

Model No.	RF Frequency	Local Frequency	IF Frequency	Output Power @ P1dB	IF Connector	Power Supply
<b>NJT8301N</b>	14.0 to 14.5GHz (Standard Ku-band)	13.05 GHz	950 to 1,450 MHz	1.5W Linear (+31dBm min.)	N-type	+12 to +30 V DC Power
<b>NJT8301F</b>					F-type	
<b>NJT8301UN</b>	13.75 to 14.5GHz (Universal Ku-band)	12.80 GHz	950 to 1,700 MHz		N-type	
<b>NJT8301UF</b>					F-type	

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## 1. Electrical Specifications

#	Items	Specifications
1-1.	Output Frequency Range	
	<Universal Ku-band>	13.75 to 14.5 GHz
	<Standard Ku-band>	14.0 to 14.5 GHz
1-2.	Input Frequency Range	
	<Universal Ku-band>	950 to 1,700 MHz
	<Standard Ku-band>	950 to 1,450 MHz
1-3.	Maximum IF Input Level (without damage)	+13 dBm max.
1-4.	Conversion Type	Single, fixed L.O.
1-5.	L.O. Frequency	
	<Universal Ku-band>	12.80 GHz
	<Standard Ku-band>	13.05 GHz
1-6.	Frequency Sense	Positive
1-7.	Output Power @ 1dB G.C.P. (P1dB)	+31.0 dBm min. over temperature
1-8.	Linear Gain	55 dB typ. 48 dB min.
1-9.	Gain Variation over frequency @ fixed temperature	
	<Universal Ku-band>	5 dBp-p max. over 750 MHz 2 dBp-p max. over any 36 MHz
	<Standard Ku-band>	5 dBp-p max. over 500 MHz 2 dBp-p max. over any 36 MHz
1-10.	Gain Stability over temperature @ fixed frequency	5 dBp-p max. 2 dBp-p typ.
1-11.	ACPR	-26 dBc typ. @ Pout = +31 dBm
1-12.	Requirement for External Reference [Frequency] [Input Power] [Phase Noise]	10 MHz (sine-wave) -5 to +5 dBm @ Input port -125 dBc/Hz max. @ 100 Hz -135 dBc/Hz max. @ 1 kHz -140 dBc/Hz max. @ 10 kHz
1-13.	L.O. Phase Noise	-60 dBc/Hz max. @ 100 Hz -70 dBc/Hz max. @ 1 kHz -80 dBc/Hz max. @ 10 kHz -90 dBc/Hz max. @ 100 kHz -100 dBc/Hz max. @ 1MHz
1-14.	Spurious @ Pout = +31 dBm [in band] [in receive band] [Out-of-band]	-50 dBc max. @ RF Frequency -70 dBm max. @ 10.95 to 12.75 GHz -50 dBc max.
1-15.	Receive Band Noise Density	
	<Universal Ku-band>	* In case of RF Freq.: 14.0 to 14.5 GHz -156 dBm/Hz max. @10.95 to 12.25 GHz * In case of RF Freq.: 13.75 to 14.0 GHz -156 dBm/Hz max. @10.95 to 12.25 GHz -142 dBm/Hz max. @12.25 to 12.75 GHz
	<Standard Ku-band>	* In case of RF Freq.: 14.0 to 14.5GHz -156 dBm/Hz max. @ 10.95 to 12.75 GHz
1-16.	Noise Figure	20 dB nom., 25 dB max.
1-17.	Input Impedance	
	<N-type Model>	50 ohms nom.
	<F-type Model>	75 ohms nom.

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#	Items	Specifications
1-18.	Input V.S.W.R.	2 : 1 max.
1-19.	Output V.S.W.R.	2 : 1 max.
1-20.	Output Load VSWR for Non Damage	Infinite : 1
1-21.	DC Power Requirement [Voltage Range] [Power Consumption]	+24 VDC (+12 to +30 VDC) 12 W typ., 14 W max. @ Pout = +31 dBm 11 W max. @ No IF, +25 C 2 W max. @ 10 MHz reference off (Mute on)
1-22.	Mute	Shut off the HPA in case of L.O. unlocked or no 10 MHz reference signal.

## 2. Mechanical Specifications

#	Items	Specifications
2-1.	Input Interface <N-type Model> <F-type Model>	IF / Ref. / DC Input: N-type female connector, 50 ohms F-type female connector, 75 ohms
2-2.	Output Interface	Waveguide, WR-75 (with Groove)
2-3.	Dimension & Housing	91.55 (L) x 68 (W) x 42.5 (H) mm [3.60" (L) x 2.68" (W) x 1.67" (H)] without interface connectors
2-4.	Weight	350 g max. [0.77 lbs max.]

## 3. Environmental Specifications

#	Items	Specifications
3-1.	Temperature Range (ambient) [Operating] [Storage]	-40 to +55 °C *1 -40 to +75 °C
3-2.	Humidity	0 to 100 % *2
3-3.	Altitude	15,000 feet
3-4.	Vibration	5 G [49.03 m/s <sup>2</sup> ] (3 axis, 50 Hz to 2 kHz) 1 mm p-p (3 axis, 5 to 50 Hz)
3-5.	Shock	30 G [294.20 m/s <sup>2</sup> ] (3 axis)
3-6.	Waterproof / Dustproof (IP Code)	IP 67
3-7.	Regulations	EU Directive (CE Marking) EMC (2014/30/EC) RoHS (2011/65/EU) Safety: EN60950-1
3-8.	Comply with RoHS (Restricting the use of Hazardous Substances) directives	

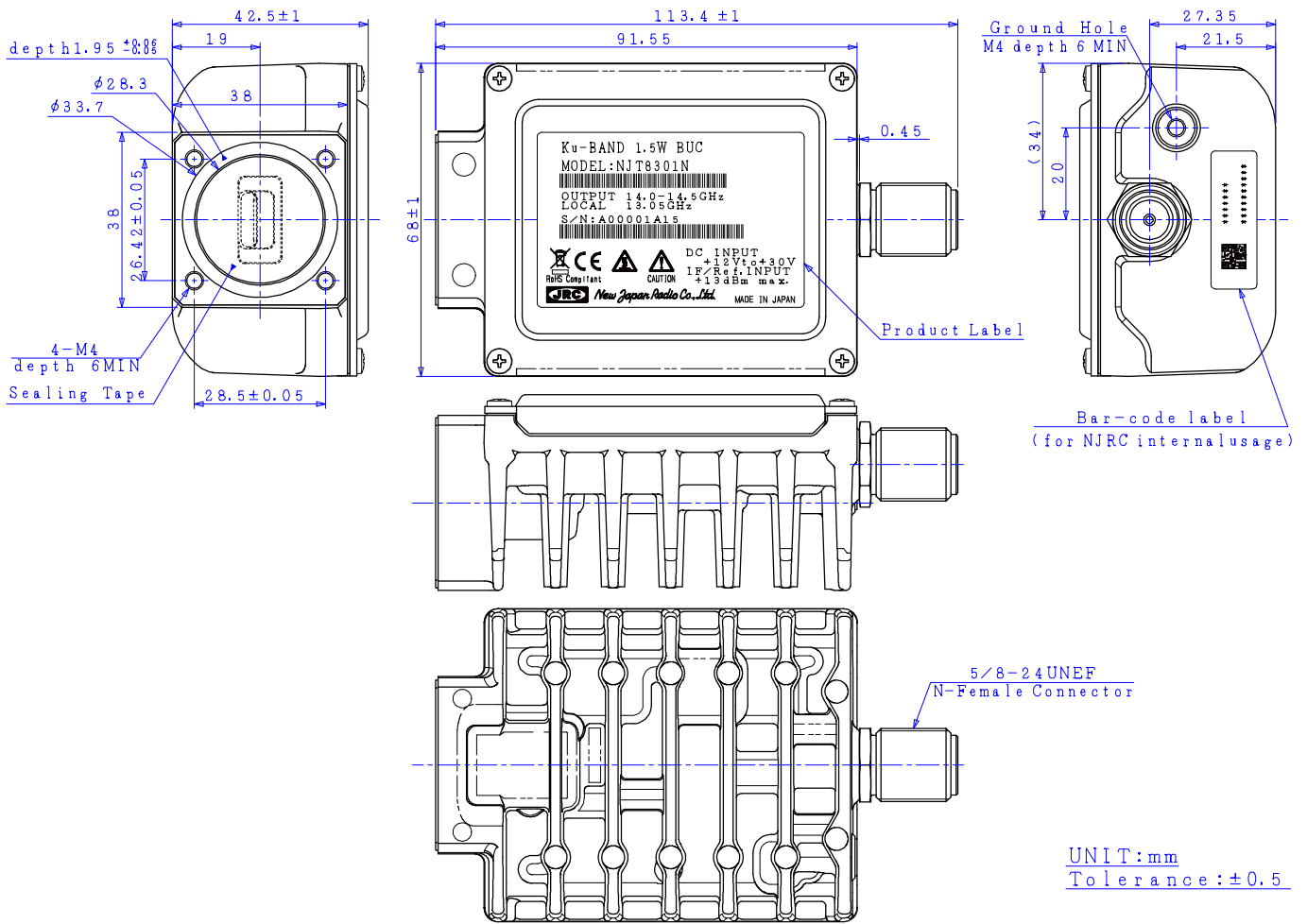
\*1: Conditioned on connection with OMT and TRF.

\*2: Premised on connection with the hermetically-sealed OMT and Feed horn.

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## 4. Outline Drawing

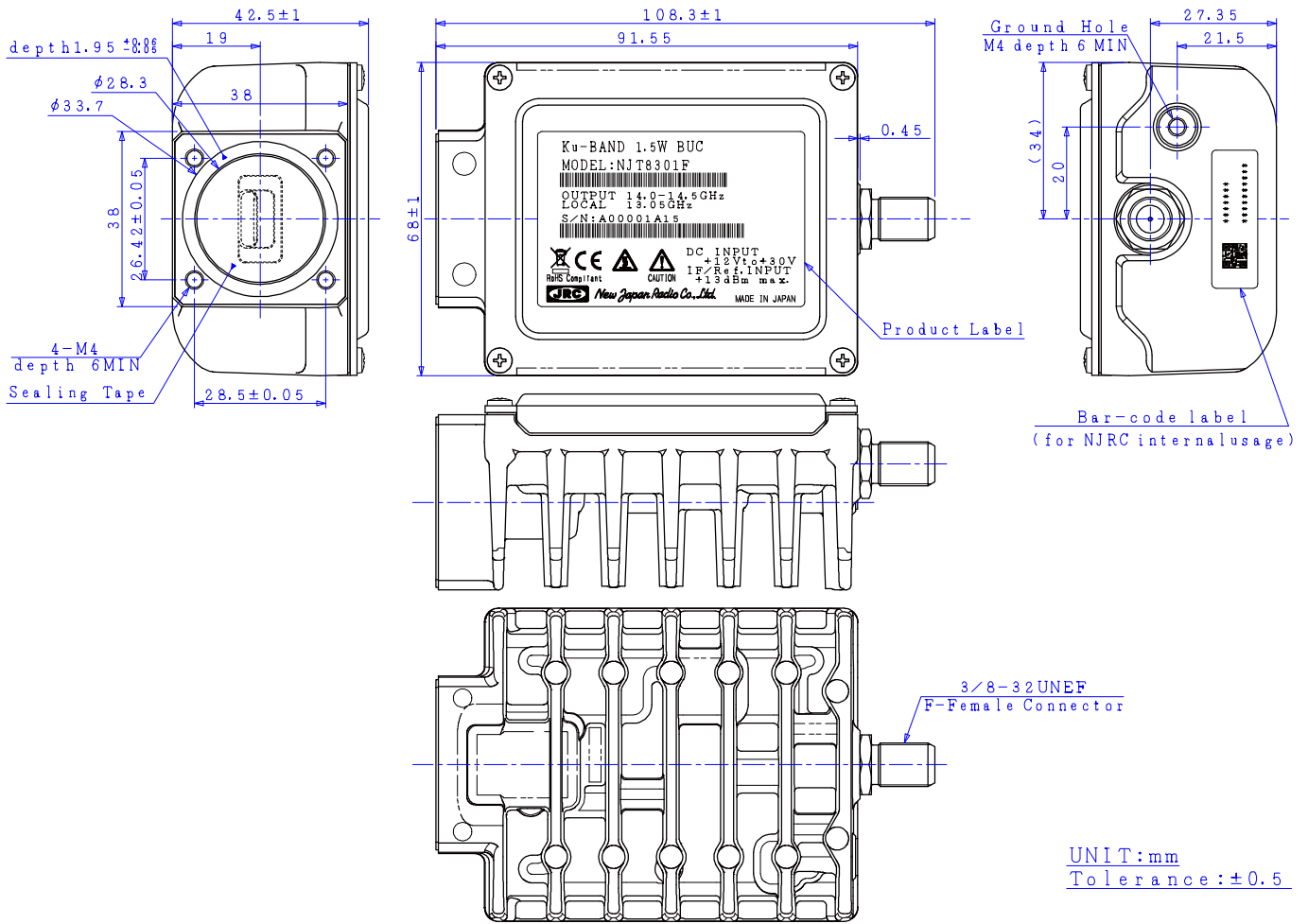
- N-type Model



**Caution:** DO NOT remove the sealing tape on the waveguide. If the sealing tape is removed, it may lose the performance of waterproof.

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● F-type Model

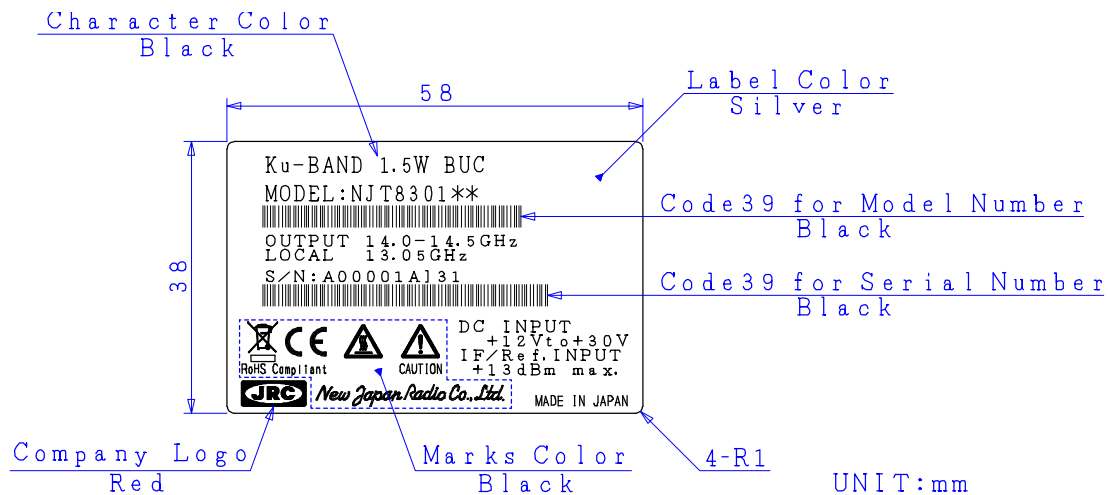


**Caution:** *DO NOT* remove the sealing tape on the waveguide. If the sealing tape is removed, it may lose the performance of waterproof.

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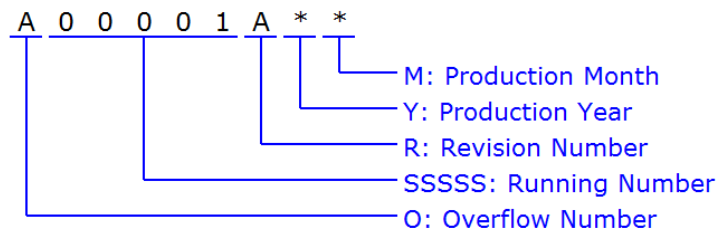
## 5. Label

### Product Label



### Definition of Serial Number

Serial Number (OSSSSRYM) - ALPHANUMERIC (9 characters)



O: Overflow Number - ALPHABET (1 character)

"A" to "Z", e.g.: A99999 ⇒ B00001

SSSS: Running Number - NUMBER (5 digits)

"00001" to "99999"

R: Revision Number - ALPHABET (1 character)

"A" to "Z"

Y: Production Year - NUMBER (1 digit)

Calendar Number, e.g.: 2009:9, 2010:0, 2011:1, 2012:2 .....

M: Production Month - ALPHANUMERIC (1character)

"1" to "9", "X" as October, "Y" as November, "Z" as December

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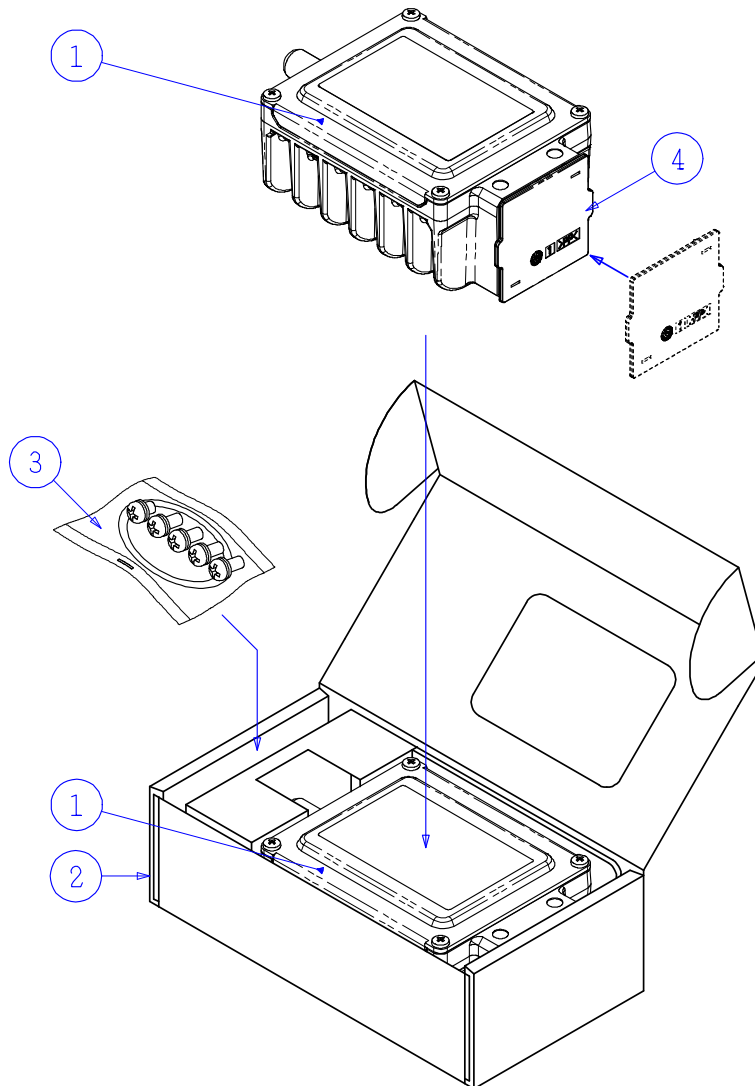
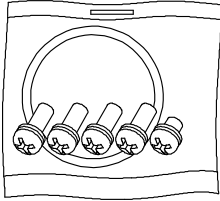


## 6. Package

### Individual Package

#### Accessories

- O-ring
- Cross Recessed Head Screws  
 M4×10 4 pieces(SUS, SW and W) for Waveguide Flange Holes  
 M4×6 1 piece(SUS, SW and W) for Ground Hole



- ①: BUC
- ②: Single Wall Corrugated Fiberboard
- ③: Accessories
- ④: Polypropylene Flange Cover

UNIT:mm

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