

- Specification -

# Lower Ku-band 4W BUC

## Model No. NJT8316L series

RF Frequency	Local Frequency	IF Frequency
12.75 to 13.25 GHz	11.8 GHz	950 to 1,450 MHz

Saturation Output Power: +36 dBm (4W)

IF Input Interface: N-type / F-type, Female Connector

Ref. (10MHz) Input: IF Connector

DC Power Input: Circular Connector

RF Output Interface: Waveguide, WR-75

DC Power Voltage Range: +12 to +30 V

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Microwave Business Headquarters**

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Those specifications listed in this document are subject to change at any time.



## Caution

1. While Nisshinbo Micro Devices Inc. (NISD) continually strives to improve the quality and reliability of our products, failures will occur in microwave products over time. For this reason, it is important that customers fulfill their responsibilities to ensure designed-in safety – including failsafe functions, redundancy, and measures to prevent malfunctions and the spread of fire – in order to avoid injuries, accidents, or social repercussions resulting from the failure of any products related to satellite communications on this website (hereinafter, “the product”). Customers must pay careful attention to ensuring the safety of their equipment.
2. The product is designed and tested to function in accordance with its specifications. Do not use under conditions that deviate from the product specifications included in the delivery specifications. NISD assume no responsibility and shall not be liable for any injuries, accidents, or social repercussions resulting from the product being in a poor or damaged state because it was used under conditions that depart from the specifications.
3. The product is covered by a warranty for one year following delivery unless otherwise stipulated in the contract or delivery conditions. In the event of a failure for which NISD are responsible occurring during the warranty period, NISD undertake to repair or replace the product free of charge. Note, however, that the warranty does not cover failures such as those listed here (see bullets below), even if they occur within the warranty period. In addition, in the case of a product being repaired or replaced by us, the starting date for the warranty period is still the original delivery date of the product.
  - Failure due to the product being used in conditions other than those stipulated in the data sheet, specification sheet, etc.
  - Failure due to modifications or repairs carried out by some entity other than our company
  - Failure determined to be the result of unsuitable maintenance or replacement of a consumable item that requires due maintenance
  - Failure due to circumstances that were unforeseeable given the scientific/technological standards at the time of shipment
  - Other failures due to external factors such as fire, earthquake, flood and power supply anomalies for which NISD are not responsible

In addition, the product warranty is limited to the provision of repair services or replacement at no cost. It does not cover secondary damage (to equipment, business opportunities, profits, etc.) or any other damage that may have resulted from failure of the product.

4. The product must be handled appropriately to ensure its continued reliability. Since it can be damaged by the intrusion of water, dust, oil, chemicals, etc., it must be given appropriate protection. Even in the case of a product with an airtight construction, avoid using it in an environment that exceeds the stated levels of waterproofing/dustproofing. Also, be sure to use connectors and waveguides properly.  
 If replacement parts such as fans are included, proper maintenance is necessary. To maintain product performance and functionality, it is necessary to conduct inspections and maintenance at appropriate intervals and exchange replacement parts when necessary. Improper inspections or maintenance may result in failure.  
 In addition, the warranty does not cover the use of the product in areas where salt damage can be expected or where there is a substantial presence of corrosive gases such as Cl<sub>2</sub>, H<sub>2</sub>S, SO<sub>2</sub>, and NO<sub>2</sub>. If the product is to be used in such areas, at the time of installation you must take appropriate steps to protect the product.
5. If the product is to be used with equipment/systems that must meet special quality and reliability standards (aerospace equipment, medical equipment, power generation control equipment, automotive/railway transportation equipment, safety equipment, disaster prevention and security equipment, etc.), please consult with our sales staff in advance.
6. Some products contain gallium arsenide (GaAs), classified as a harmful substance. To avoid danger, do not incinerate, crush, or chemically treat the product in such a way that gases or dust are released. When disposing of the product, comply with all applicable laws and regulations and do not treat it as general industrial waste or household waste.
7. When exporting a product or technology, observe export laws and regulations such as those governing foreign exchange and foreign trade, and obtain any necessary licenses for export, service transactions, etc.  
 NISD request that you do not use our products or the technical data published on this website for developing weapons of mass destruction or for any other military purposes or applications.
8. The product specifications in this document are subject to change without notice. If you are considering using a product, delivery specifications must first be settled.

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## 1. Electrical Specifications

#	Items	Specifications
1.1.	Output Frequency Range	12.75 to 13.25 GHz
1.2.	Input Frequency Range	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	11.80 GHz
1.6.	Frequency Sense	Positive
1.7.	Output Power @ 1dB G.C.P. (P1dB)	+36.0 dBm min. over temperature
1.8.	Linear Gain	62 dB nom., 56 dB min.
1.9.	Gain Variation over frequency @ fixed temperature	5 dBp-p max. over 500 MHz 2 dBp-p max. over 54 MHz
1.10.	Gain Stability over temperature @ fixed frequency	5 dBp-p max. 2 dBp-p typ.
1.11.	ACPR	-26 dBc min. @ Pout = +35 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 @ P1dB Output [in band] [in receive band] [Out-of-band]	-50 dBc max. @ RF Frequency -70 dBm max. @ 10.70 to 11.45 GHz -50 dBc max.
1.15.	Receive Band Noise Density	-156 dBm/Hz max. @10.70 to 11.45 GHz
1.16.	Noise Figure	18 dB nom., 23 dB max.
1.17.	Input Impedance <N-type Model> <F-type Model>	50 ohms nom. 75 ohms nom.
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

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# NJT8316L series

#	Items	Specifications
1.21.	DC Power Requirement [Voltage Range] [Power Consumption]	+24 VDC (+12 to +30 VDC) 28 W typ., 32 W max. @ Pout = +36 dBm 20 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.

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## 2. Mechanical Specifications

#	Items	Specifications
2.1.	Input Interface	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	98 (L) × 98 (W) × 42.5 (H) mm [3.86" (L) × 3.86" (W) × 1.67" (H)] without interface connectors and screws
2.4.	Weight	500 g max. [1.1 lbs max.]

## 3. Environmental Specifications

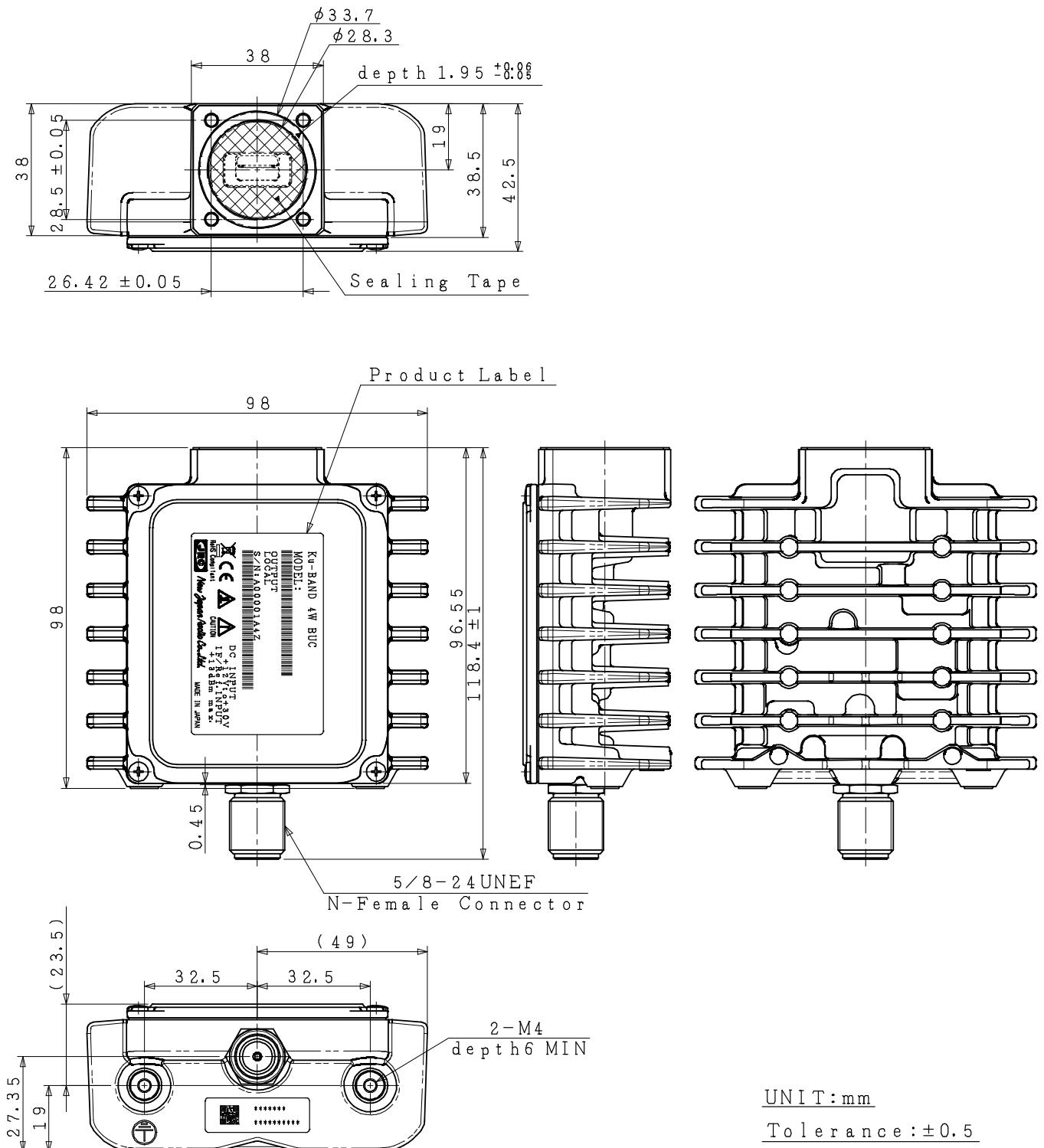
#	Items	Specifications
3.1.	Temperature Range (ambient) [Operating] [Storage]	-40 to +60 °C *1 -40 to +75 °C
3.2.	Humidity	0 to 100 %
3.3.	Altitude	15,000 feet (4,572 m)
3.4.	Vibration	5 G [49.03 m/s <sup>2</sup> ] (3 axis, 50 Hz to 2 kHz) 1 mm p-p (3 axis, 5 to 50 Hz)
3.5.	Shock	30 G [294.20 m/s <sup>2</sup> ] (3 axis)
3.6.	Waterproof / Dustproof (IP Code)	IP 67
3.7.	Regulations	EU Directive (CE Marking) EMC (2014/30/EU) RoHS (2011/65/EU) Safety: EN62368-1
3.8.	Comply with RoHS (Restricting the use of Hazardous Substances) directives	

\*1: Conditioned on connection with waveguide.

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## 4. Outline Drawing

- N-type Model: NJT8316LN



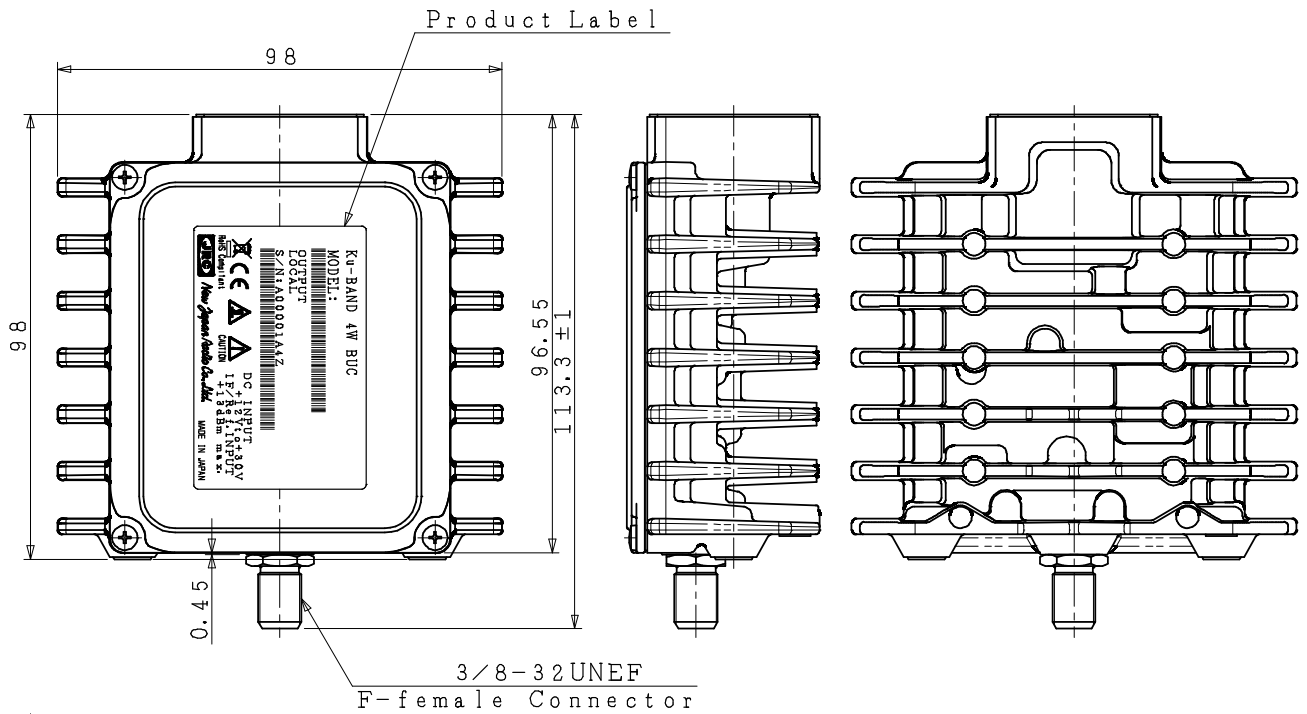
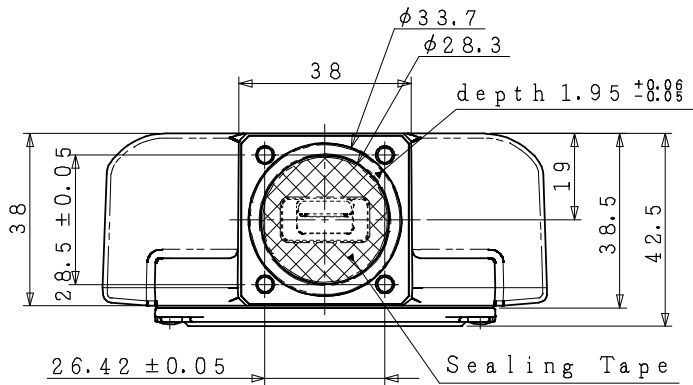
UNIT: mm  
Tolerance:  $\pm 0.5$

**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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# NJT8316L series

- F-type Model: NJT8316LF



UNIT: mm

Tolerance:  $\pm 0.5$

**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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