

Ku-band 4W BUC

RF Frequency:

13.75 to 14.5 GHz and 14.0 to 14.5 GHz

Model No. NJT8304 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. :
+36.0 dBm (4W)
IF / Ref. (10MHz) Input :
N-type / F-type, Female Connector
DC Power Input : IF Connector

Specifications

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**New Japan Radio Co., Ltd.
Microwave Division**

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Caution

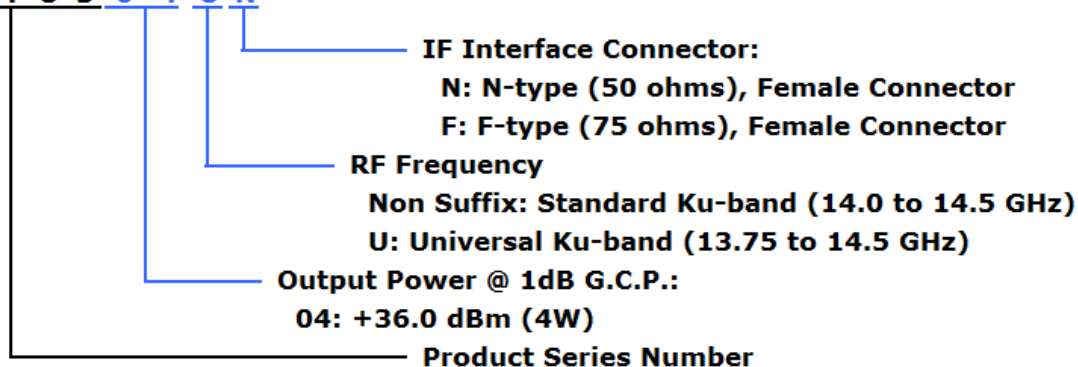
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2. To ensure the highest levels of reliability, NJRC products must always be properly handled. The introduction of external contaminants (e.g. dust, oil or cosmetics) can result in failures of microwave components.
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 - * Equipment Used in the Deep Sea
 - * Power Generator Control Equipment (nuclear, steam, hydraulic)
 - * Life Maintenance Medical Equipment
 - * Fire Alarm/Intruder Detector
 - * Vehicle Control Equipment (automobile, airplane, railroad, ship, etc.)
 - * Various Safety Equipment
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Model Number

- Numbering System

N J T 8 3 0 4 U N



- Line-up

Model No.	RF Frequency	Local Frequency	IF Frequency	Output Power @ P1dB	IF Connector	Power Supply
NJT8304N	14.0 to 14.5GHz (Standard Ku-band)	13.05 GHz	950 to	4W Linear (+36dBm min.)	N-type	+12 to +30 V DC Power
NJT8304F			1,450 MHz		F-type	
NJT8304UN	13.75 to 14.5GHz (Universal Ku-band)	12.80 GHz	950 to		N-type	
NJT8304UF			1,700 MHz		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)	+36.0 dBm min. over temperature
1-8.	Linear Gain	62 dB nom., 56 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 54 MHz
	<Standard Ku-band>	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 = +35.5 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 = +36.0 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 12.75 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	18 dB nom., 23 dB max.
1-17.	Input Impedance	
	<N-type Model>	50 ohms nom.
	<F-type Model>	75 ohms nom.
1-18.	Input V.S.W.R.	2 : 1 max.

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#	Items	Specifications
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) 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.

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	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

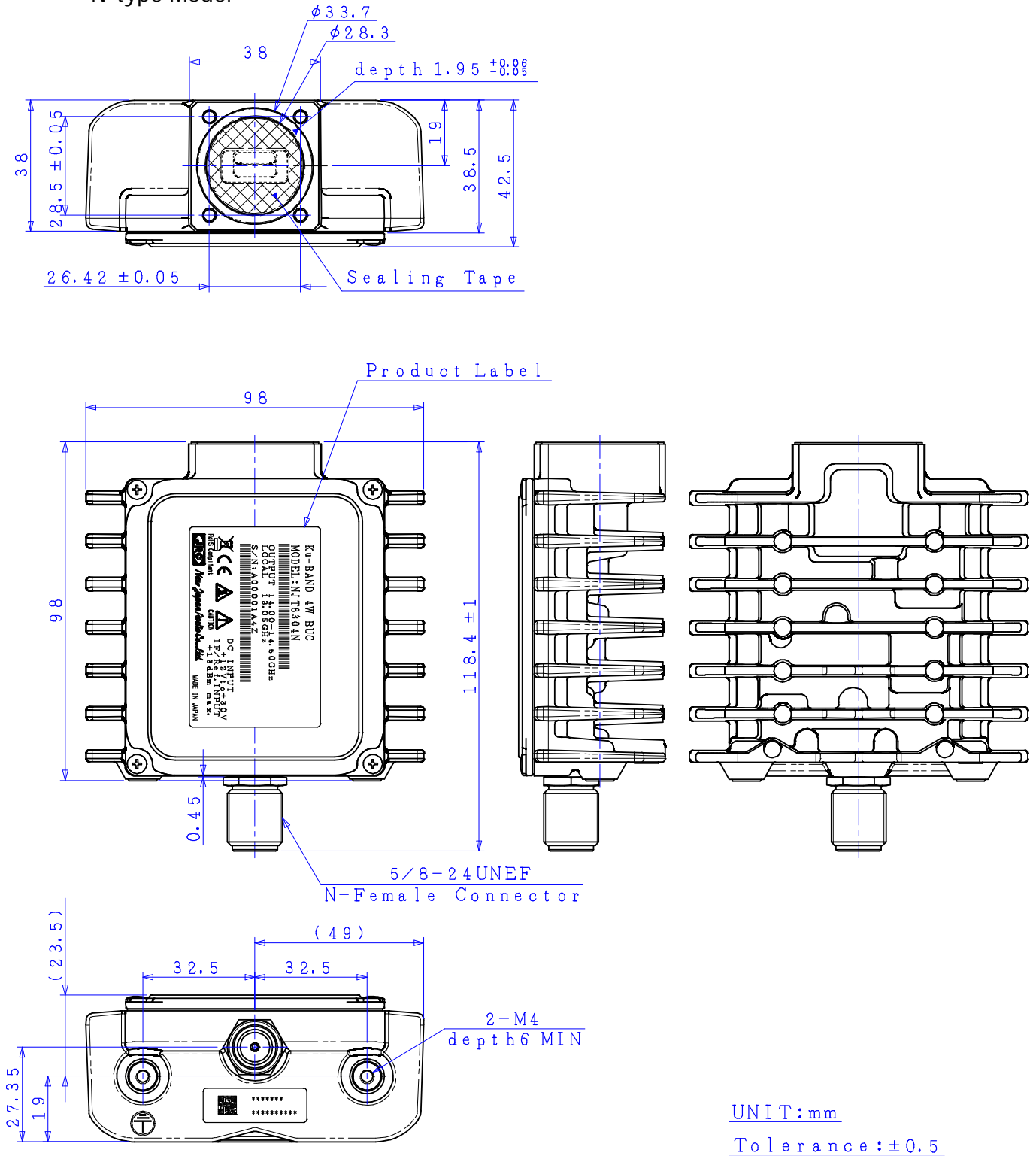
#	Items	Specifications
3-1.	Temperature Range (ambient) [Operating] [Storage]	-40 to +60 °C *1 -40 to +75 °C
3-2.	Humidity	0 to 100 %
3-3.	Altitude	15,000 feet (4,572 m)
3-4.	Vibration	5 G [49.03 m/s ²] (3 axis, 50 Hz to 2 kHz) 1 mm p-p (3 axis, 5 to 50 Hz)
3-5.	Shock	30 G [294.20 m/s ²] (3 axis)
3-6.	Waterproof / Dustproof (IP Code)	IP 67
3-7.	Regulations	EU Directive (CE Marking) EMC (2014/30/EU) RoHS (2011/65/EU) Safety: EN60950-1
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

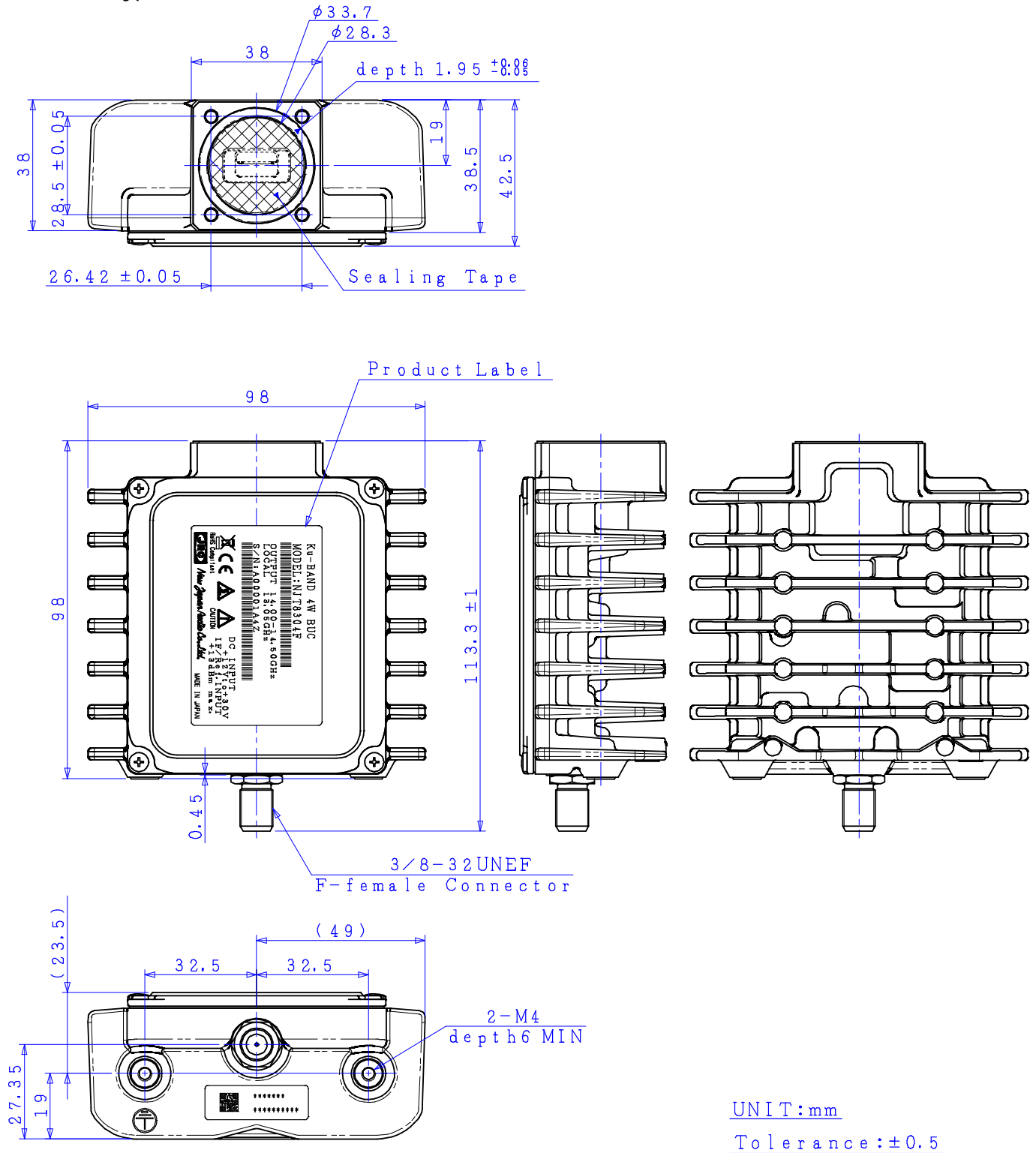
● N-type Model



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

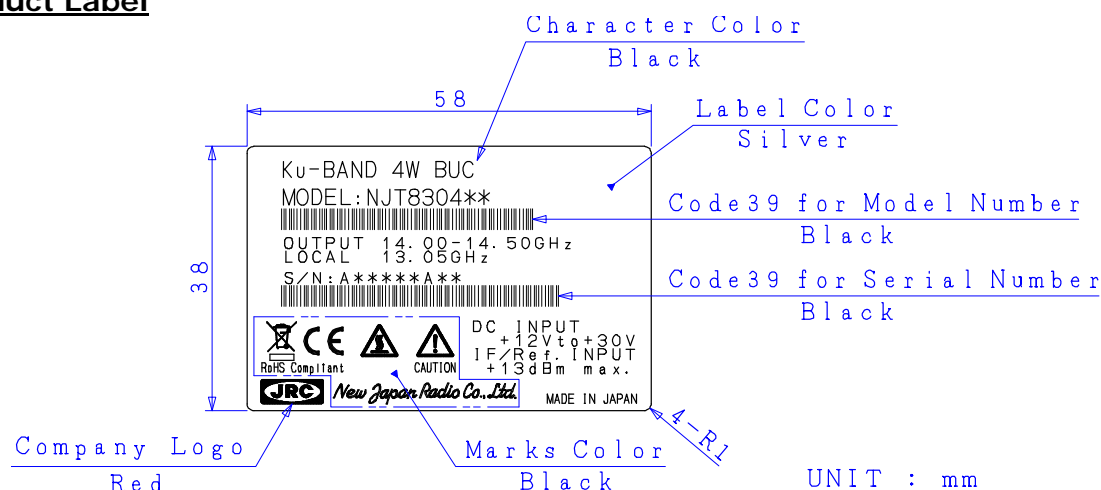


Caution: DO NOT remove the sealing tape on the waveguide. If the sealing tape is removed, it may lose the performance of waterproof.

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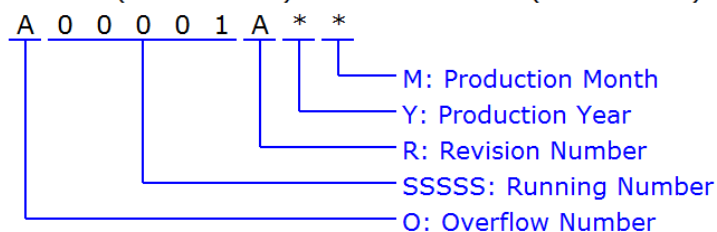
5. Label

Product Label



Definition of Serial Number

Serial Number (OSSSSSRYM) - ALPHANUMERIC (9 characters)



O: Overflow Number - ALPHABET (1 character)

"A" to "Z", e.g.: A99999 ⇒ B00001

SSSSS: 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

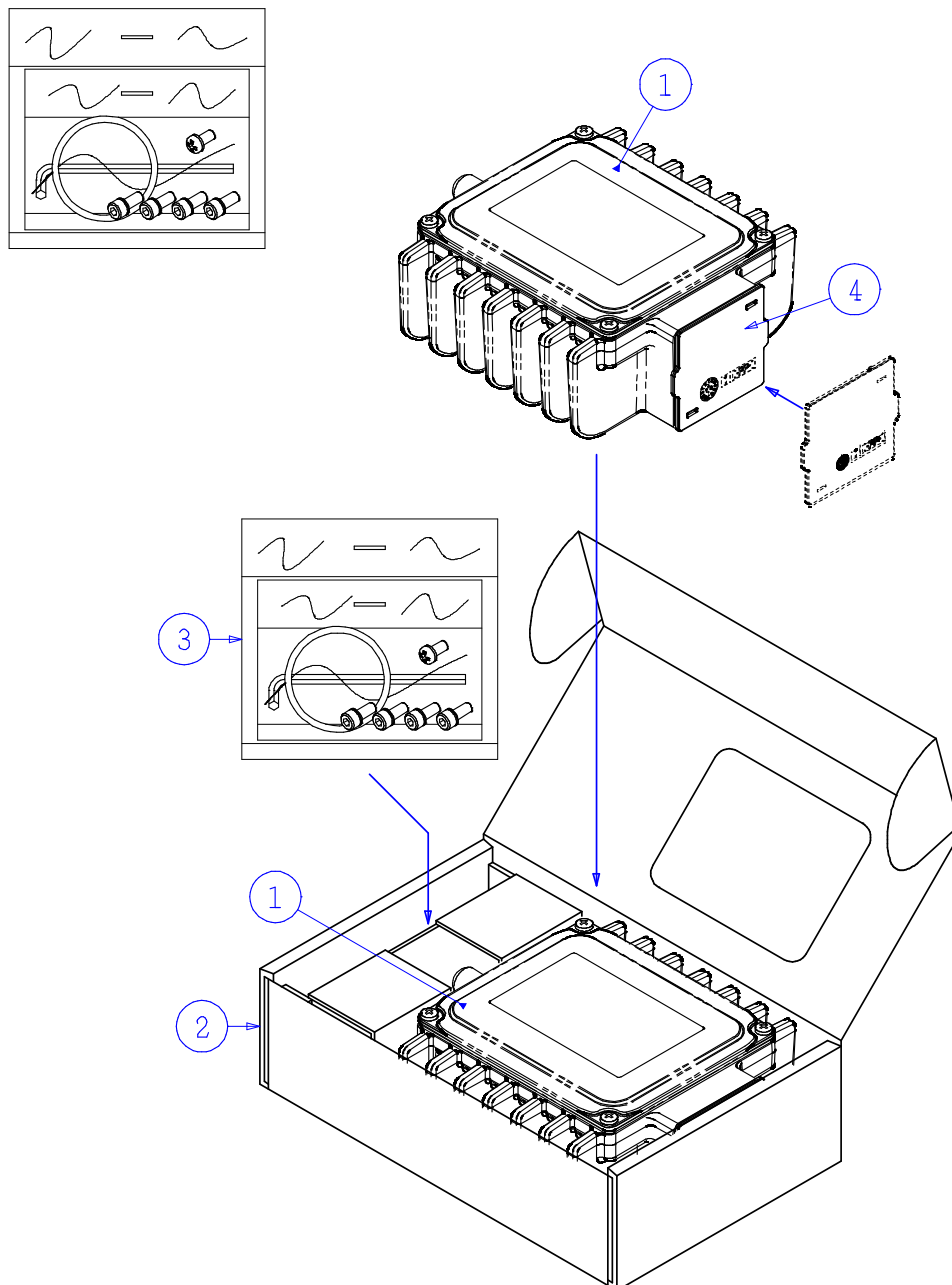
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6. Package

Individual Package

Accessories

- O-ring
- Cross Recessed Head Screws
M4×6 1 piece (SUS, SW) for Ground Hole
- Hexagon Socket Head Bolts
M4×10 4 Pieces (SUS, SW and W) for Waveguide Flange Holes
- Hexagon Wrench Keys (M4 Type)

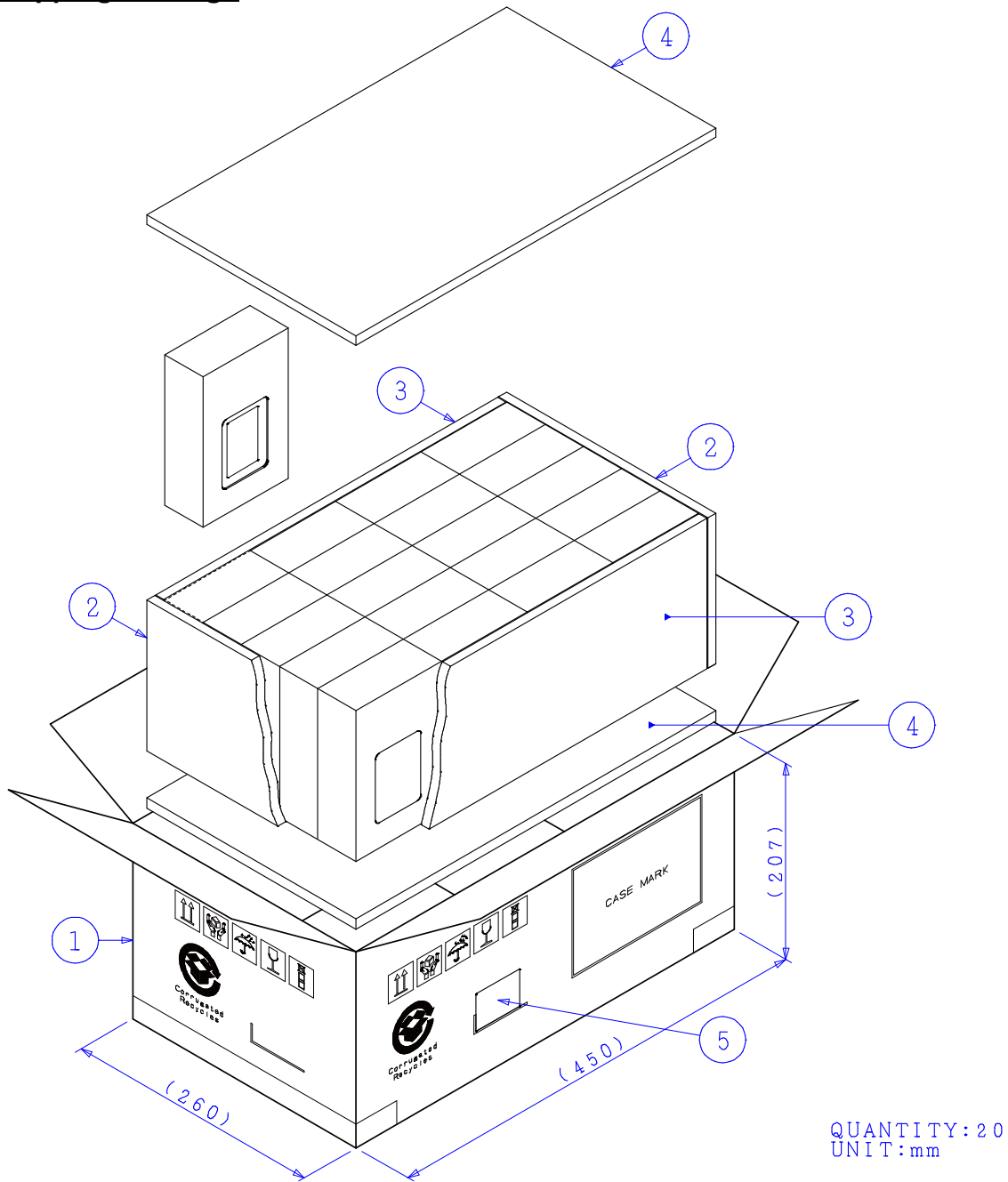


- ①: BUC
 ②: Single Wall Corrugated Fiberboard
 ③: Accessories
 ④: Polypropylene Flange Cover

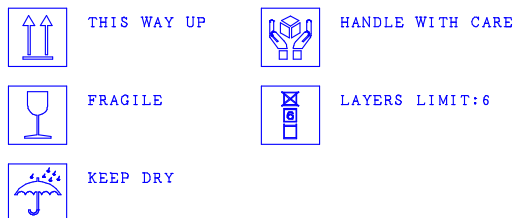
UNIT:mm

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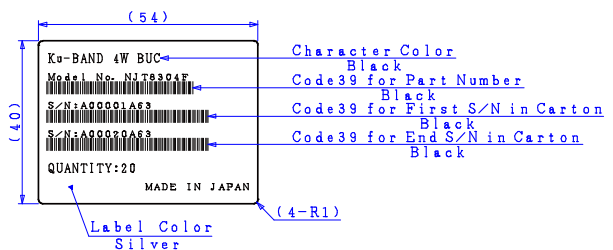
Shipping Package



Pictorial Marking for Handling of Goods



Package Label



- ①: Double Wall Corrugated Fiberboard
- ②: Polystyrene Foam for Package Cushioning
- ③: Polystyrene Foam for Package Cushioning
- ④: Polystyrene Foam for Package Cushioning
- ⑤: Package Label

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