

Date		Business Development Section	
Dec. 13, 2018		Microwave Division	
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Ku-band 6W BUC

RF Frequency:

13.75 to 14.5 GHz / 14 to 14.5 GHz

Model No. NJT8376 series

RF Frequency: 14 to 14.5 GHz / 13.75 to 14.5 GHz

LO Frequency: 13.05 GHz / 12.8 GHz

IF Frequency: 950 to 1,450 MHz / 950 to 1,700 MHz

Output Power @ 1dB G.C.P.: +37.8 dBm min

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

DC Power / Ref. (10MHz) Input: IF Connector

Output Interface: Waveguide, WR-75

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Microwave Division

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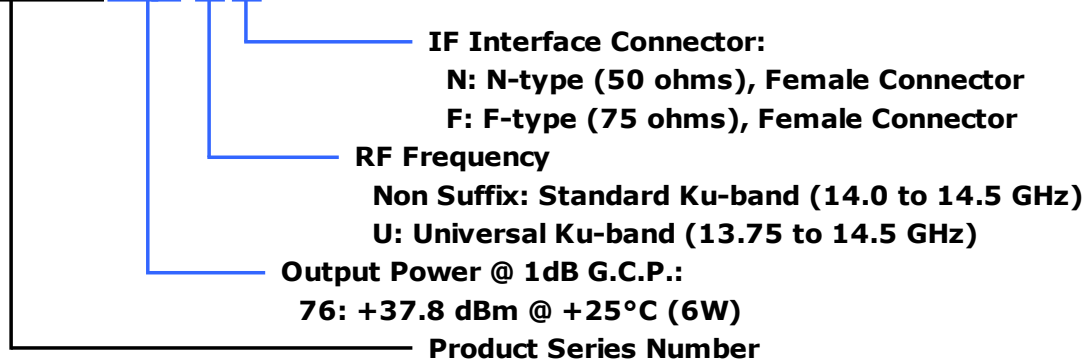
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New Japan Radio Co., Ltd. Microwave Division	Title: Preliminary Datasheet of NJT8376		
	Reference No.: PDS-T8376	Rev.: 00-04	Sheet: 1 / 9

Model Number

- **Numbering System**

N J T 8 3 7 6 U N



- **Line-up**

Model No.	RF Frequency	Local Frequency	IF Frequency	Output Power @ P1dB	IF Connector	Power Supply
NJT8376N	14.0 to 14.5GHz (Standard Ku-band)	13.05 GHz	950 to 1,450 MHz	6W Linear (+37.8dBm)	N-type	+12 to +30 V DC Power
NJT8376F					F-type	
NJT8376UN	13.75 to 14.5GHz (Universal Ku-band)	12.80 GHz	950 to 1,700 MHz		N-type	
NJT8376UF					F-type	

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1. Electrical Specifications

#	Items	Specifications
1.1.	Output RF Frequency Range	
	<Universal Ku-band>	13.75 to 14.5 GHz
	<Standard Ku-band>	14 to 14.5 GHz
1.2.	Input IF 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>	12.8 GHz
	<Standard Ku-band>	13.05 GHz
1.6.	Frequency Sense	Positive
1.7.	Output Power @ 1dB G.C.P. (P1dB)	+37.8 dBm min. over temperature as target, will be final defined after pre-production
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 any 54 MHz
	<Standard Ku-band>	5 dBp-p max. over 500 MHz 2 dBp-p max. over any 54 MHz
1.10.	Gain Stability over temperature @ fixed frequency	5 dBp-p max. 2 dBp-p typ.
1.11.	ACPR	-26 dBc typ. @ Pout = +37 dBm
1.12.	Requirement for External Reference	
	[Frequency]	10 MHz (sine-wave)
	[Input Power]	-5 to +5 dBm @ Input port
	[Phase Noise]	-120 dBc/Hz max. @ 100 Hz -130 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

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#	Items	Specifications
1.14.	Spurious @ Pout = +37.8 dBm <div style="text-align: right;">[In-band]</div> <div style="text-align: right;">[Receive band]</div> <div style="text-align: right;">[Out-of-band]</div>	-50 dBc max. @ RF Frequency -70 dBm max. @ 10.95 to 12.75 GHz -50 dBc max.
1.15.	Receive Band Noise Density <div style="text-align: center;"><Universal Ku-band></div> <hr/> <div style="text-align: center;"><Standard Ku-band></div>	* In case of RF Freq.:14 to 14.5 GHz -156 dBm/Hz max. @10.95 to 12.25 GHz * In case of RF Freq.:13.75 to 14 GHz -156 dBm/Hz max. @10.95 to 12.25 GHz -142 dBm/Hz max. @12.25 to 12.75 GHz <hr/> * In case of RF Freq.:14 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 <div style="text-align: center;"><N-type Model></div> <div style="text-align: center;"><F-type Model></div>	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 V.S.W.R. <div style="text-align: right;">[Recommendation]</div> <div style="text-align: right;">[Non Damage]</div>	1.3 : 1 max. 3.0 : 1 max.
1.21.	DC Power Requirement <div style="text-align: right;">[Voltage Range]</div> <div style="text-align: right;">[Power Consumption]</div>	+24 VDC (+12 to +30 VDC) 34 W typ., 38 W max. @ Pout = +37.8 dBm 21 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 Power Input:
	<N-type Model>	N-type female connector, 50 ohms
	<F-type Model>	F-type female connector, 75 ohms
2.2.	Output Interface	Waveguide, WR-75 (with Grooved)
2.3.	Dimension & Housing	98 (L) × 128 (W) × 42.5 (H) mm [3.86" (L) × 5.04" (W) × 1.67" (H)] without interface connectors and screws
2.4.	Weight	540 g [1.2 lbs]

3. Environmental Specifications

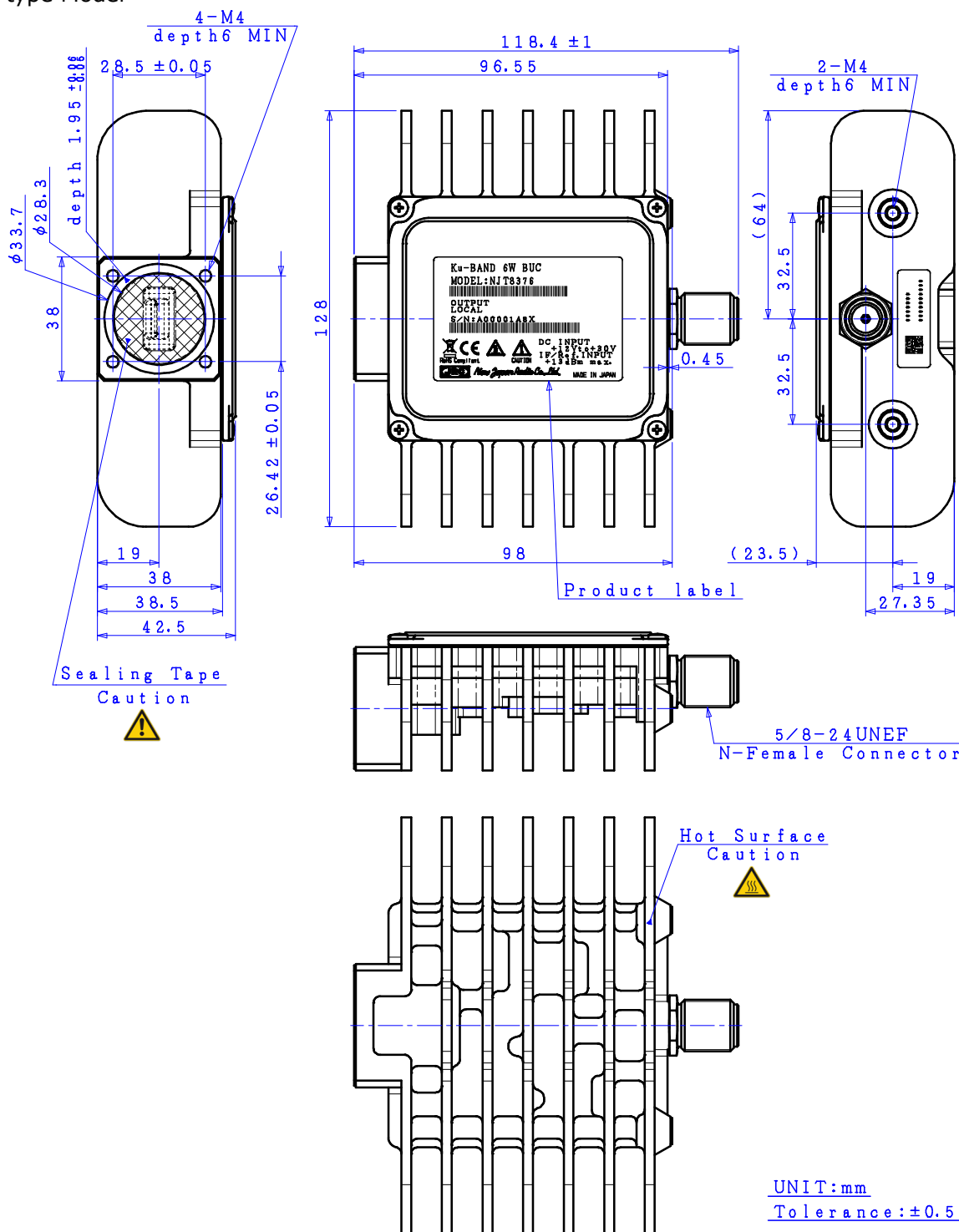
#	Items	Specifications
3.1.	Temperature Range (ambient)	
	[Operating]	-40 to +60 °C *1
	[Storage]	-40 to +75 °C
3.2.	Humidity	0 to 100 % RH
3.3.	Altitude	15,000 feet (4,572 m)
3.4.	Vibration	5 G [49.03 m/s ²] (3 axis, 50 Hz to 2 kHz)
		1 mm p-p (3 axis, 5 to 50 Hz)
3.5.	Shock	30 G [294.20 m/s ²] (3 axis)
3.6.	Waterproof / Dustproof (IP Code)	IP 67
3.7.	Regulations	EU Directive (CE Marking)
		EMC (2014/30/EC)
		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

4.1. N-type Model

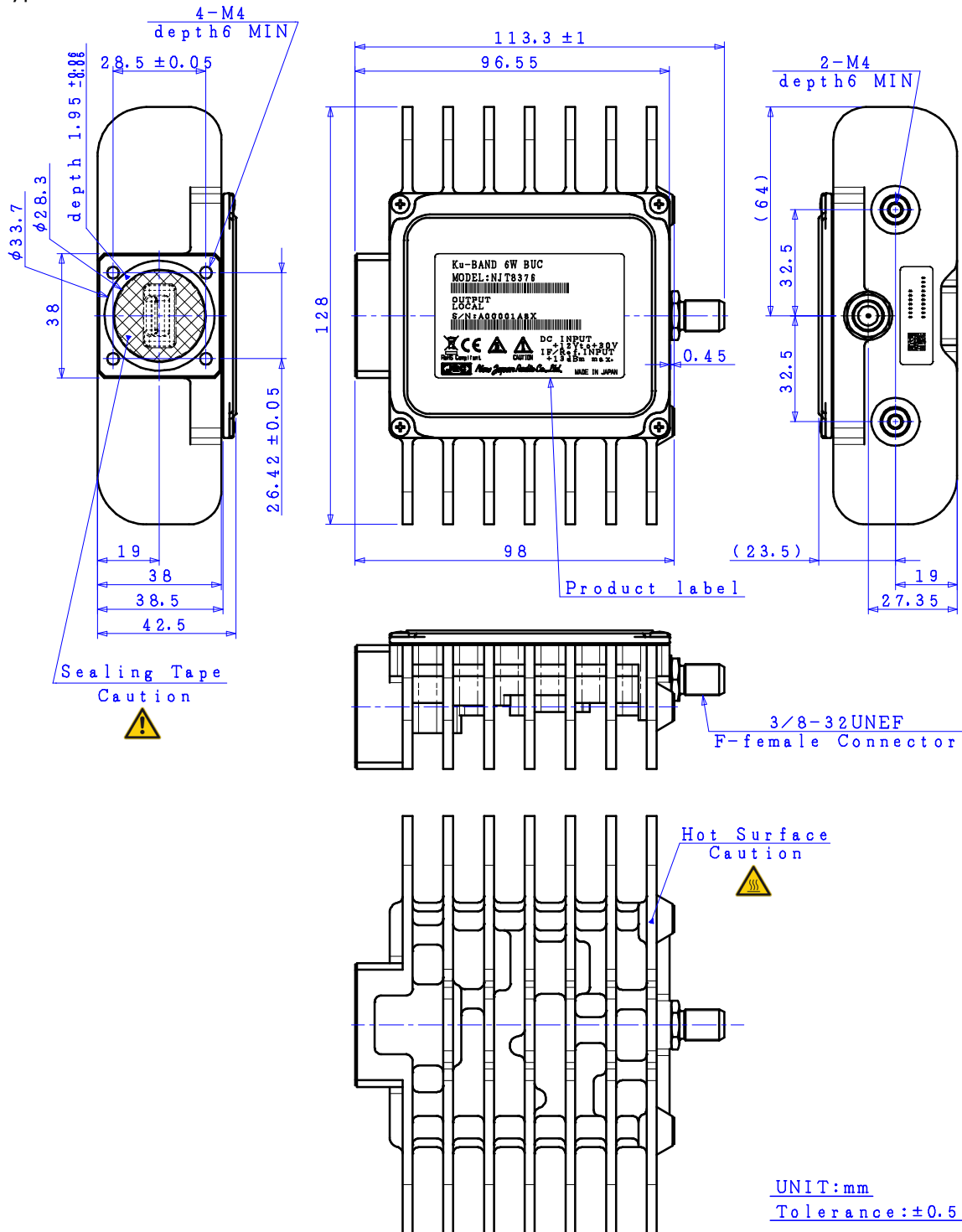


CAUTION

- **Sealing Tape:** DO NOT remove the sealing tape on the waveguide. If the sealing tape is removed, it may lose the performance of waterproof.
- **Hot Surface:** Body and heat sink becomes hot when the unit is powered and even after power is disconnected until it is cooled down.
DO NOT touch hot surface to avoid a burn hazard.

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4.2. F-type Model



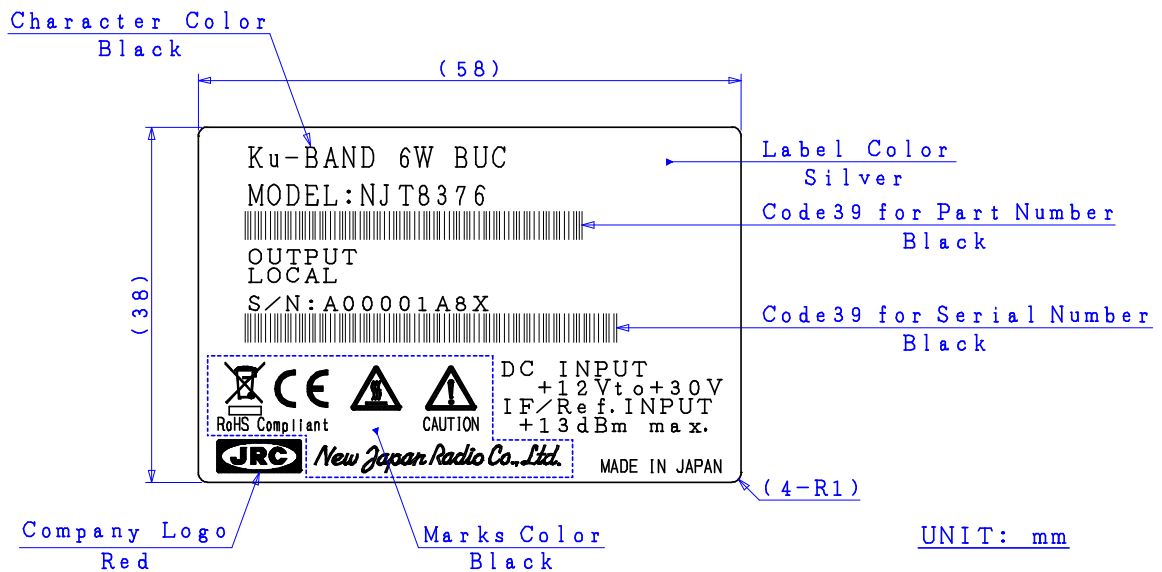
CAUTION

- **Sealing Tape:** DO NOT remove the sealing tape on the waveguide. If the sealing tape is removed, it may lose the performance of waterproof.
- **Hot Surface:** Body and heat sink becomes hot when the unit is powered and even after power is disconnected until it is cooled down.
DO NOT touch hot surface to avoid a burn hazard.

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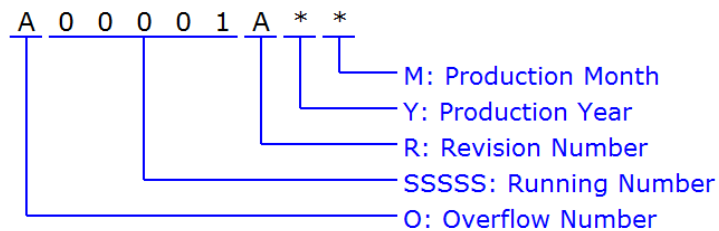
5. Label

5.1. Label Outline



5.2. Definitions

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

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 - * Power Generator Control Equipment (nuclear, steam, hydraulic)
 - * Life Maintenance Medical Equipment
 - * Fire Alarm/Intruder Detector
 - * Vehicle Control Equipment (automobile, airplane, railroad, ship, etc.)
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