

# Universal Ku-band PLL LNB

RF Frequency: (Low band) 10.7 to 11.7 GHz / (High band) 11.7 to 12.75 GHz

Local Frequency: (Low band) 9.75 GHz / (High band) 10.6 GHz

## LO Stability Line-up:

- **Extrenal Reference**
- **Intrenal Reference (+/-3ppm, +/-10ppm , +/-50ppm)**

## Model No. NJR2841 series

Local Selection: Outside Mechanical Switch

(IF / Ref. (10MHz) / DC Power Interface: F or N-type Female Connector)

## Model No. NJR2842 series

Local Selection: 22kHz Tone

(IF / Ref. (10MHz) / DC Power Interface: F or N-type Female Connector)

## Model No. NJR2843 series

Local Selection: Input Voltage High/Low

(IF / Ref. (10MHz) / DC Power Interface: F or N-type Female Connector)

## Specifications

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New Japan Radio Co., Ltd.  
Microwave Components Division

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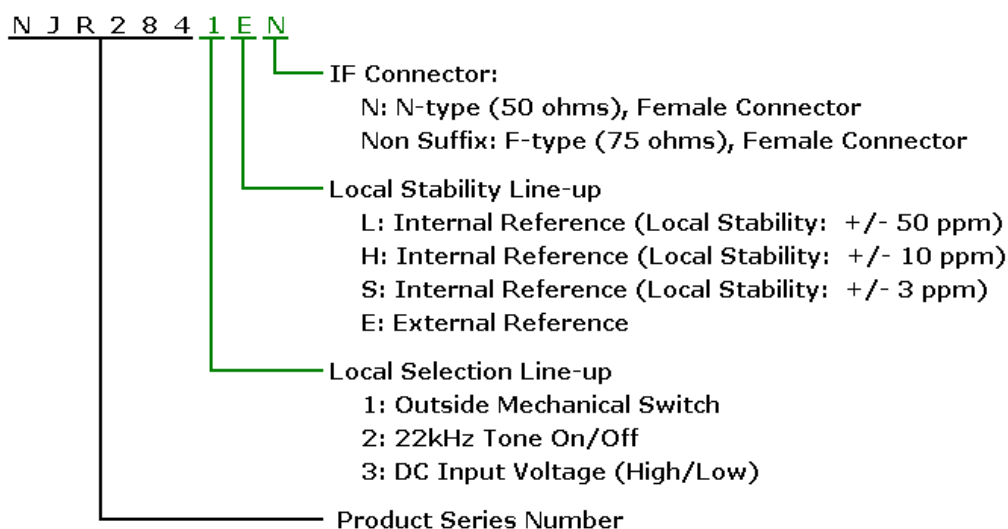


## Caution

1. NJRC strives to produce reliable and high quality microwave components. NJRC's microwave components are intended for specific applications and require proper maintenance and handling. To enhance the performance and service of NJRC's microwave components, the devices, machinery or equipment into which they are integrated should undergo preventative maintenance and inspection at regularly scheduled intervals. Failure to properly maintain equipment and machinery incorporating these products can result in catastrophic system failures.
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.
3. NJRC offers a variety of microwave components intended for particular applications. It is important that you select the proper component for your intended application. You may contact NJRC's sales office or sales representatives, if you are uncertain about the products listed in the catalog and the specification sheets.
4. Special care is required in designing devices, machinery or equipment, which demand high levels of reliability. This is particularly important when designing critical components or systems whose foreseeable failure can result in situations that could adversely affect health or safety. In designing such critical devices, equipment or machinery, careful consideration should be given to, amongst other things, their safety design, fail-safe design, back-up and redundancy systems, and diffusion design.
5. The products listed in the catalog and specification sheets may not be appropriate for use in certain equipment where reliability is critical or where the products may be subjected to extreme conditions. You should consult our sales office or sales representatives before using the products in any of the following types of equipment.
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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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7. The product specifications and descriptions listed in the catalog and specification sheets are subject to change at any time, without notice.

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## Model Numbering System



### Reference & Local Stability Line-up:

- (L-type) Internal Reference, +/- 50 ppm Local Stability
- (H-type) Internal Reference, +/- 10 ppm Local Stability
- (S-type) Internal Reference, +/- 3 ppm Local Stability
- (E-type) External Reference

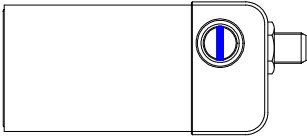
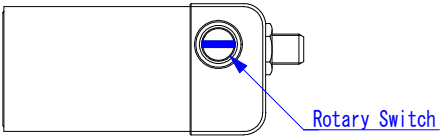
## 1. Electrical Specifications

#	Item	Specification
1-1.	Input Frequency Band [Low band] [High band]	10.70 to 11.70 GHz 11.70 to 12.75 GHz
1-2.	Output Frequency Band [Low band] [High band]	950 to 1,950 MHz 1,100 to 2,150 MHz
1-3.	Local Frequency [Low band] [High band]	9.75 GHz 10.60 GHz
1-4.	Conversion Gain	48 dB min., 62 dB max.
1-5.	Gain Variation	6 dB max. over frequency 1.5 dB max. in any 36 MHz segment
1-6.	Noise Figure at + 25 degree C	0.8 dB typ., 1.0 dB max.
1-7.	Output Power for 1 dB Gain Compression	0 dBm min. @ +25 C
1-8.	Output Intercept Point of 3 <sup>rd</sup> Order Intermodulation	+5 dBm min.
1-9.	Tx Signal Immunity [Gain Change] [Noise Figure Change]	0.2 dB max. 0.1 dB max. at -20 dBm Tx Input

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#	Item	Specification
1-10.	Requirement for External Reference (Only E-type Specified) [Input Port] [Frequency] [Input Power] [Phase Noise]	IF Output Connector (Combine DC Supply with IF Signal) 10 MHz (sine-wave) -10 to 0 dBm -125 dBc/Hz max. @ 100 Hz -135 dBc/Hz max. @ 1 kHz -140 dBc/Hz max. @ 10 kHz
1-11.	Local Stability (Initial Setting Error & Over Temperature) <L-type> <H-type> <S-type> <E-type>	+/- 50 ppm max. +/- 10 ppm max. +/- 3 ppm max. Depend on External Reference Stability
1-12.	L. O. Phase Noise (SSB)	-50 dBc/Hz typ. @ 100 Hz -70 dBc/Hz typ. @ 1 kHz -75 dBc/Hz typ. @ 10 kHz -85 dBc/Hz typ. @ 100 kHz -105 dBc/Hz typ. @ 1 MHz In case of E-type, depend on External Reference Stability
1-13.	Local Leakage Levels	-40 dBm max. at the IF Output Connector -60 dBm max. at the RF Input Flange
1-14.	Image Rejection	40 dB min.
1-15.	Spurious	a) -120 dBm max. at input, fixed frequency spur, unrelated to test CW signal. b) -40 dBc typ., -30 dBc max. with test CW signal -10 dBm IF output
1-16.	Input V.S.W.R.	2.5 : 1 typ.
1-17.	Output Impedance <NJR2841*/42*/43*> <NJR2841*N/42*N/43*N>	75 ohms nom. (F-type Female Connector) 50 ohms nom. (N-type Female Connector)
1-18.	Output V.S.W.R.	2.3 : 1 max.
1-19.	Requirement for DC Supply [Input Port] [Input Voltage] [Current Drain] <L/H/S-type> <E-type>	IF Output Connector (Combine DC Supply with IF Signal) +10 to +24 VDC 170 mA max. 200 mA max.

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#	Item	Specification
1-20.	<p>Frequency Band Select Function &lt;NJR2841 series&gt;</p> <p>[Select Type] [Band Selection]</p> <p>[Switch Side Definition]</p> <p>&lt;NJR2842 series&gt;</p> <p>[Select Type] [Band Selection]</p> <p>[22kHz Specifications]</p> <p>&lt;NJR2843 series&gt;</p> <p>[Select Type] [Band Selection]</p>	<p>Outside Mechanical Switch Low Band: A side: (Initial Set) High Band: B side</p> <p>A side:</p>  <p>B side:</p>  <p>&lt;NJR2842 series&gt;</p> <p>22 kHz Tone (Compliance with DiSEqC Standard) Low Band: 0 to 0.2 Vp-p High Band: 0.4 to 0.8 Vp-p Input Port: IF Output Connector (Combine DC Supply with IF Signal) Wave Form: Square-wave Frequency: 22 +/- 4 kHz Duty Cycle: 30 to 70 %</p> <p>&lt;NJR2843 series&gt;</p> <p>Input Voltage (High/Low) Low Band: Low Voltage (+10 to +14 V) High Band: High Voltage (+15.5 to +24 V)</p>

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## 2. Mechanical Specifications

#	Item	Specification
2-1.	Input Interface	Waveguide, WR-75 with Groove
2-2.	Output Interface <NJR2841*/42*/43*> <NJR2841*N/42*N/43*N>	F-type, Female connector N-type, Female connector
2-3.	Dimension & Housing (without Interface Connector & Rotary SW) <NJR2841 series> <NJR2842/43 series>	(L) 83.4 x (W) 42 x (H) 42 mm [(L) 3.28" x (W) 1.65" x (H) 1.65"] (L) 82.2 x (W) 40 x (H) 40 mm [(L) 3.24" x (W) 1.57" x (H) 1.57"]
2-4.	Weight <NJR2841*/42*/43*> <NJR2841*N/42*N/43*N>	210 g [0.46 lbs] 240 g [0.53 lbs]

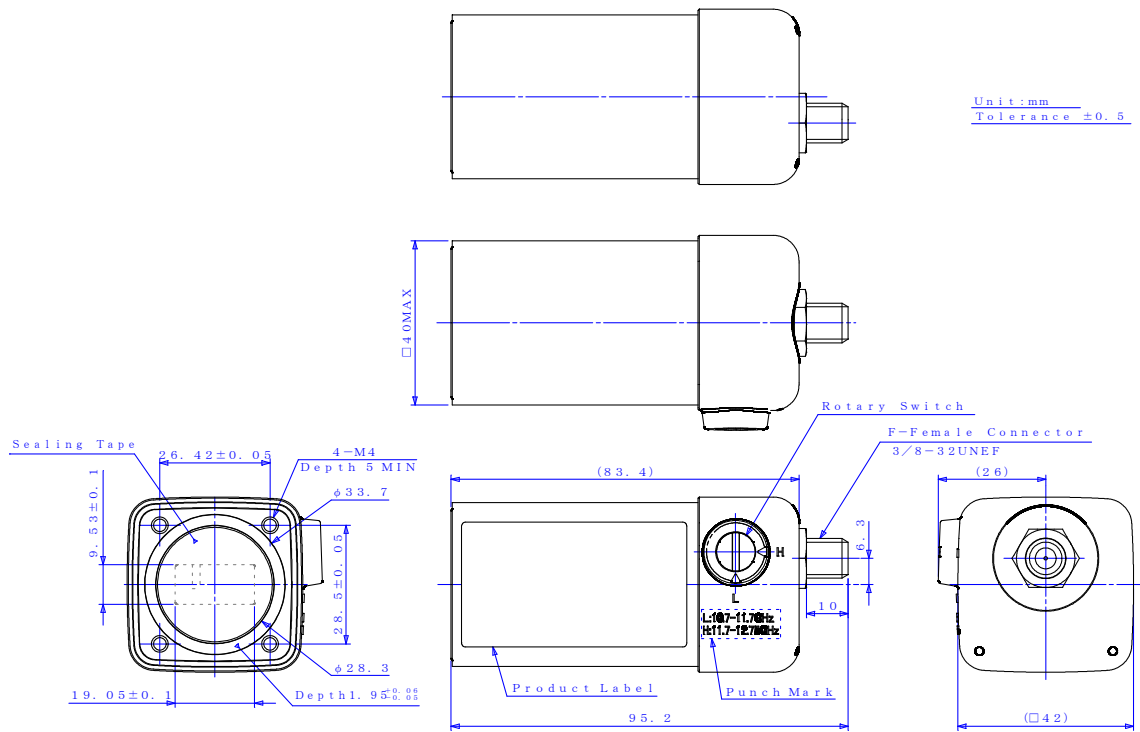
## 3. Environmental Specifications

#	Item	Specification
3-1.	Temperature Range (ambient) [Operating] [Storage]	-40 to +60 C -40 to +80 C
3-2.	Humidity	0 to 100 % Rh
3-3.	Altitude	15,000 feet max.
3-4.	Vibration	5 G (f: 50 Hz, T: 5 min. Direction: X,Y,Z)
3-5.	Shock	15 G (Direction: X,Y,Z)
3-6.	Comply with RoHS (Restricting the use of Hazardous Substances) directives	

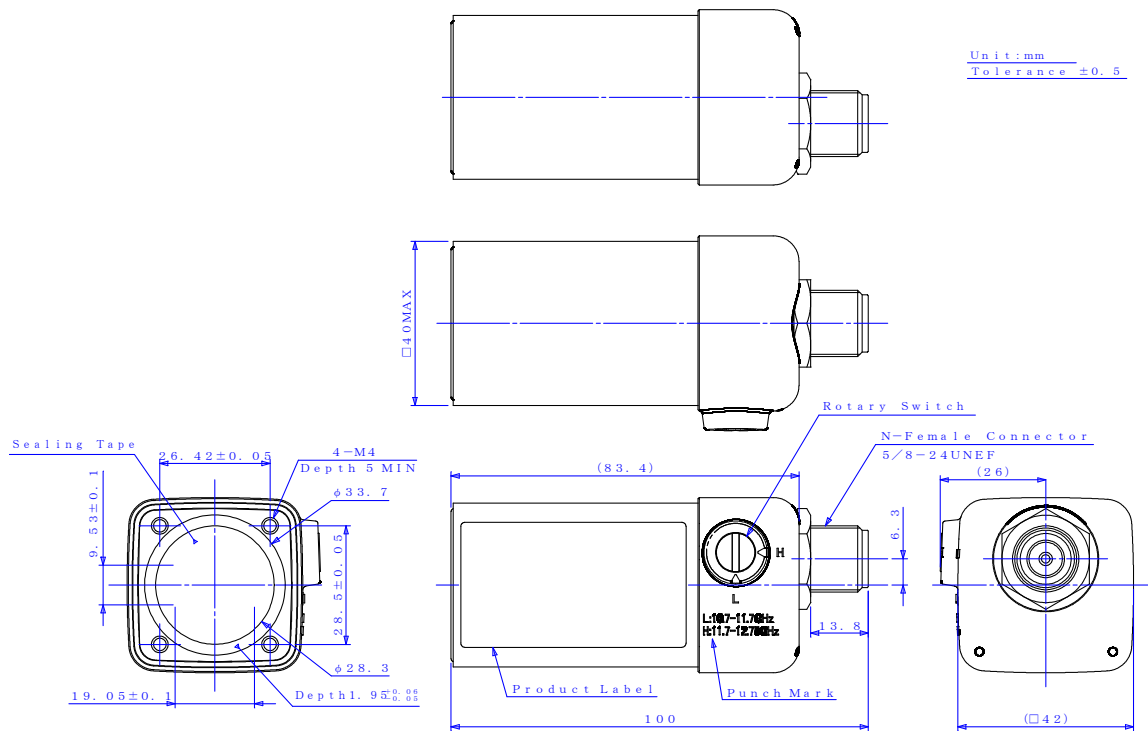
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#### 4. Outline Drawing

##### ● NJR2841\* (F-type Female Connector):

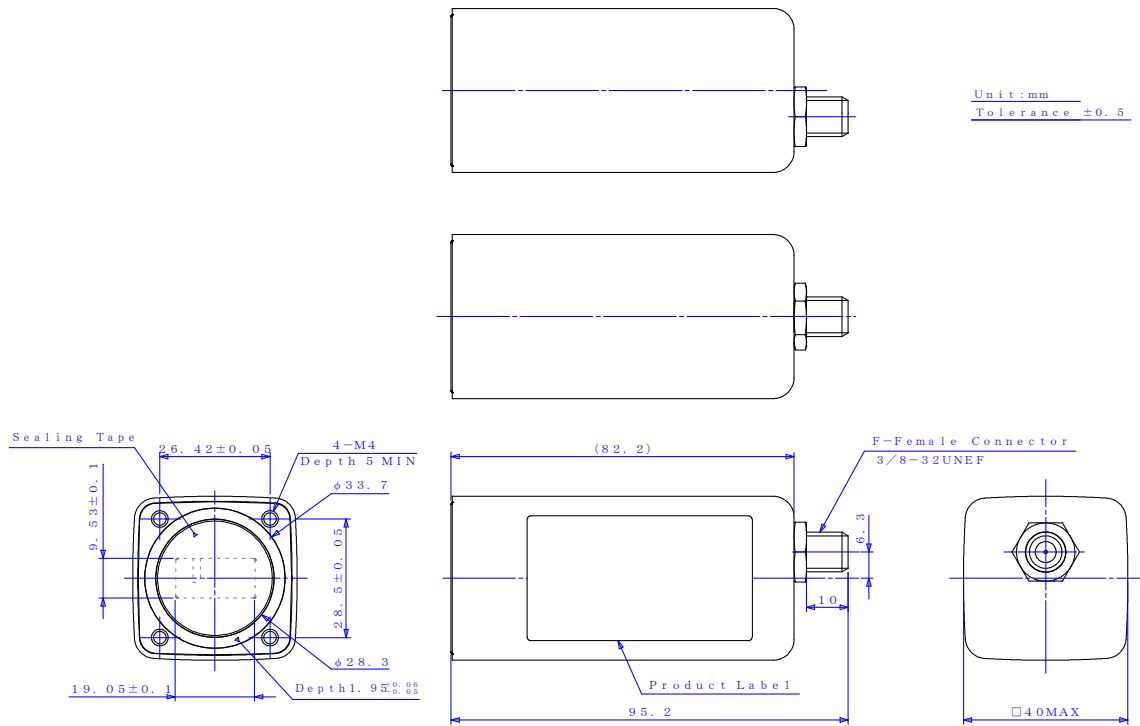


##### ● NJR2841\*N (N-type Female Connector):

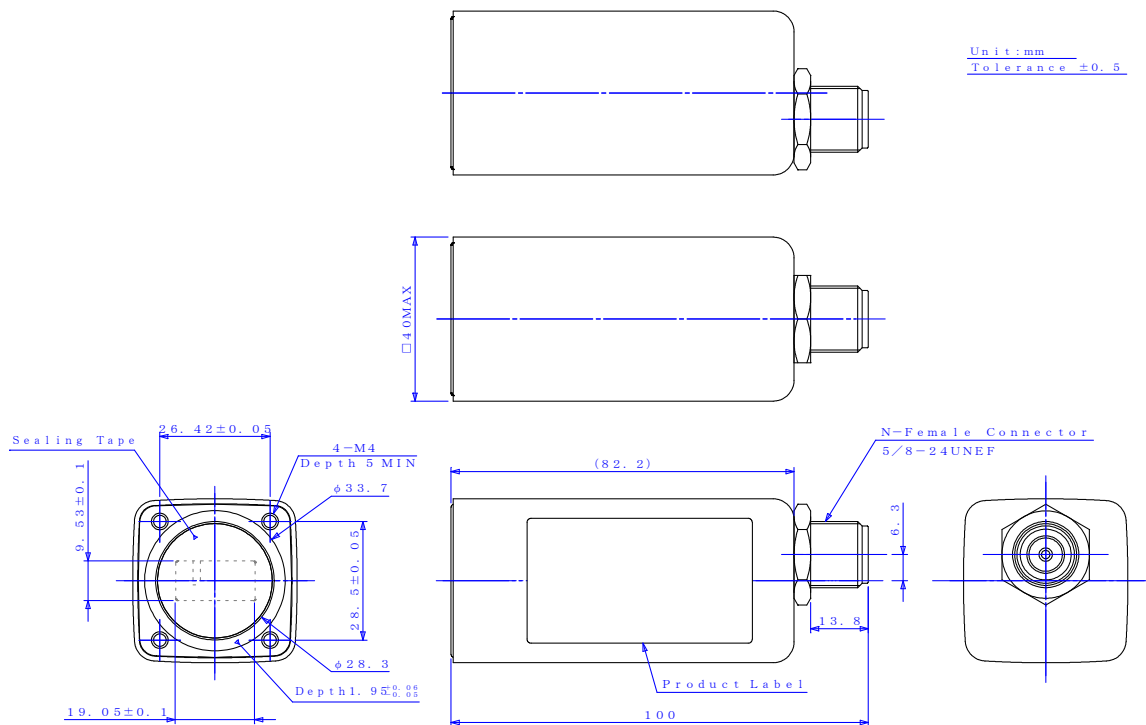


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● **NJR2842\*/43\* (F-type Female Connector):**



● **NJR2842\*N/43\*N (N-type Female Connector):**

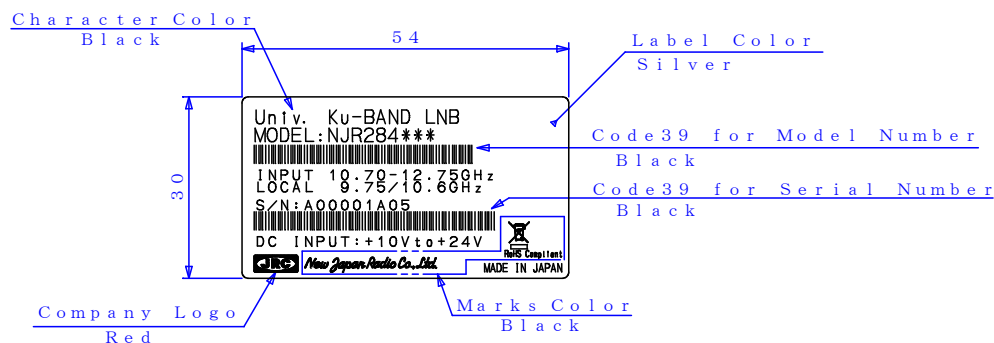


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## 5. Label

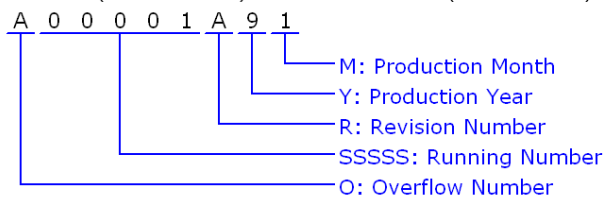
### ● Product Label



UNIT: mm

### ● Definition of Serial Number

Serial Number (OSSSSRYM) - 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 .....

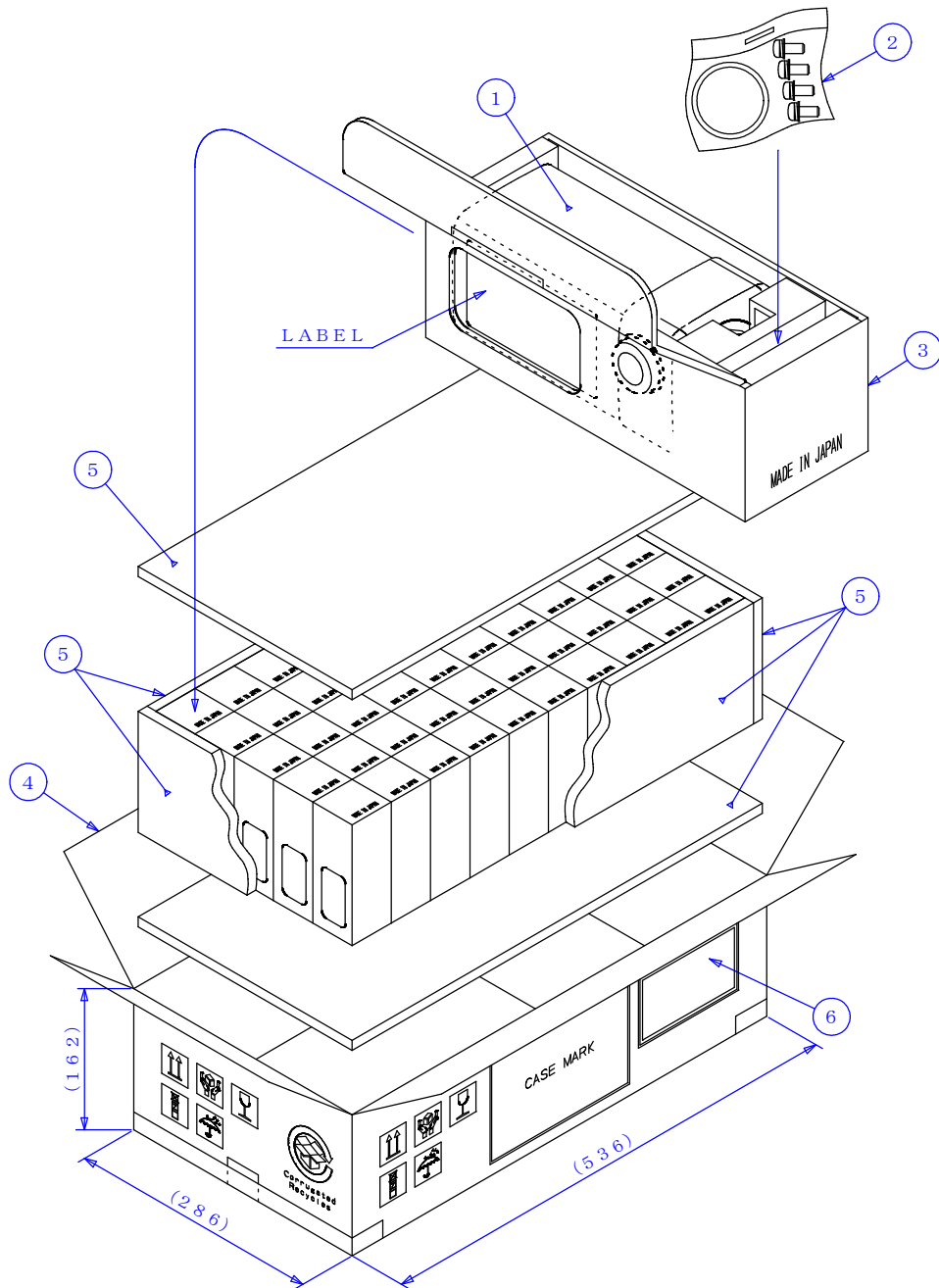
M: Production Month - ALPHANUMERIC (1 character)

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

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## 6. Packing

### ● NJR2841 series:



①: LNB

②: Accessory

O-RING, Screw (M4×12 4Pieces SUS, SW and W)

③: Single Wall Corrugated Fibreboard

④: Double Wall Corrugated Fiberboard

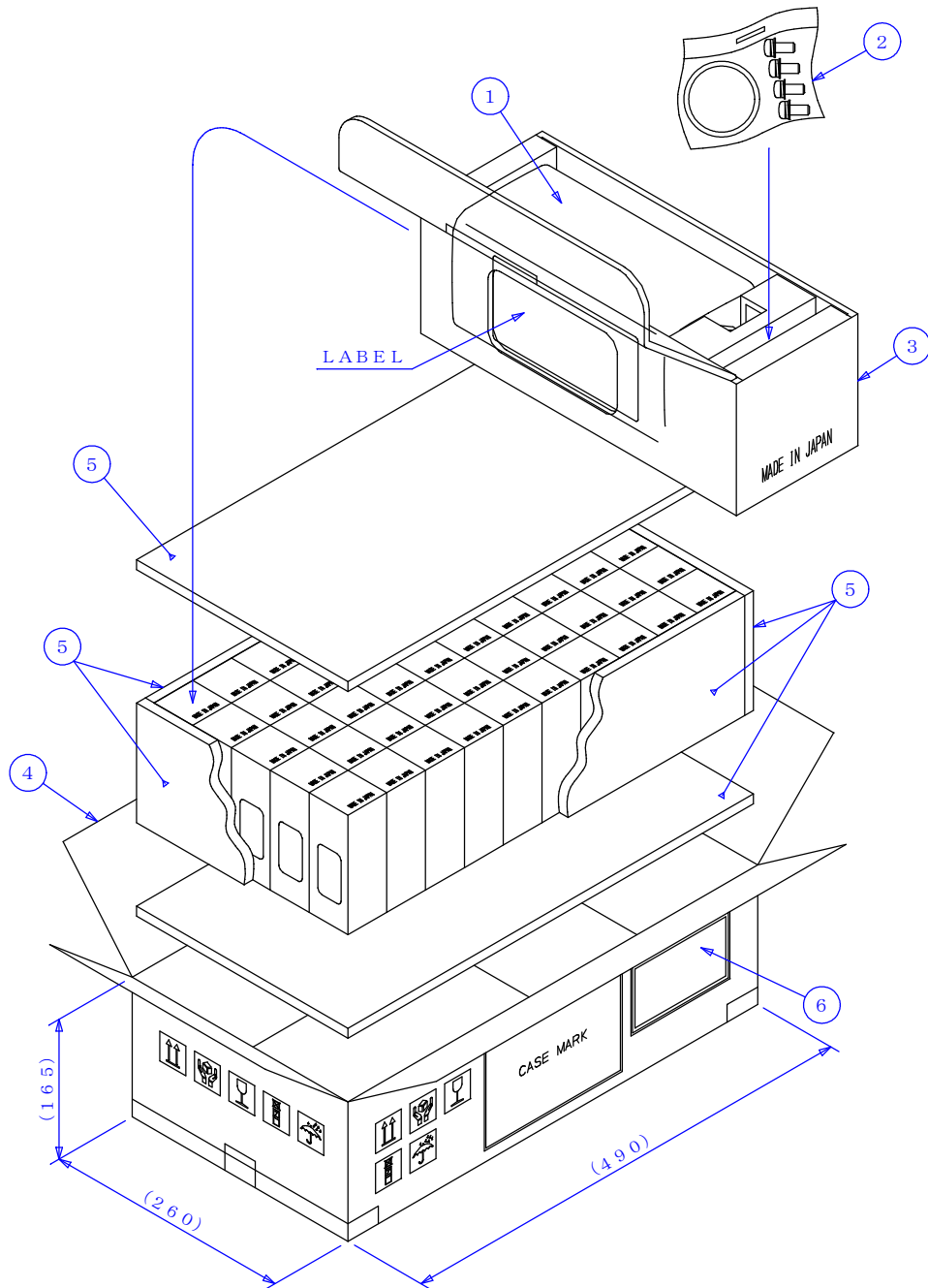
⑤: Polystyrene Foam For Package Cushioning

⑥: Package Label (MODEL No, QUANTITY)

UNIT : mm

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● NJR2842/43 series:



- ①: LNB
- ②: Accessory  
O-RING, Screw (M4×12 4Pieces SUS, SW and W)
- ③: Single Wall Corrugated Fibreboard
- ④: Double Wall Corrugated Fiberboard
- ⑤: Polystyrene Foam For Package Cushioning
- ⑥: Package Label (MODEL No, QUANTITY)

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