

# **Universal Ku-band 8W BUC**

RF Frequency: 13.75.0 to 14.5 GHz

## **Model No. NJT5218N**

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

## **Model No. NJT5218F**

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

## **Model No. NJT5218NM**

IF / Ref. (10MHz) Input: N-type Female Connector  
DC Power Input: MS Connector

## **Model No. NJT5218FM**

IF / Ref. (10MHz) Input: F-type Female Connector  
DC Power Input: MS Connector

## **Specifications**

**Rev.06 March 15, 2012**

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

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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.)
  - \* 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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## 1. Electrical Specifications

|       |                                                                                     |                                                                                                                                         |
|-------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| 1-1.  | Output Frequency Range                                                              | 13.75 to 14.5 GHz                                                                                                                       |
| 1-2.  | Input Frequency Range                                                               | 950 to 1,700 MHz                                                                                                                        |
| 1-3.  | Maximum IF Input Level<br>(without damage)                                          | +13 dBm max.                                                                                                                            |
| 1-4.  | Conversion Type                                                                     | Single, fixed L.O.                                                                                                                      |
| 1-5.  | L.O. Frequency                                                                      | 12.80 GHz                                                                                                                               |
| 1-6.  | Frequency Sense                                                                     | Positive                                                                                                                                |
| 1-7.  | Output Power @ 1dB G.C.P.                                                           | +39 dBm min. over temperature                                                                                                           |
| 1-8.  | Linear Gain                                                                         | 65 dB nom., 59 dB min.                                                                                                                  |
| 1-9.  | Gain Variation over frequency<br>@ fixed temperature                                | 5 dBp-p max. over 750 MHz<br>2 dBp-p max. over 54 MHz                                                                                   |
| 1-10. | Gain Stability over temperature<br>@ fixed frequency                                | 4 dBp-p max.<br>2 dBp-p typ.                                                                                                            |
| 1-11. | IM3                                                                                 | -28 dBc typ., -24 dBc max.<br>@ total power ≤ +39 dBm - 3 dB                                                                            |
| 1-12. | ACPR                                                                                | -28 dBc typ. @ Pout = +38 dBm                                                                                                           |
| 1-13. | Requirement for External Reference<br>[Frequency]<br>[Input Power]<br>[Phase Noise] | 10 MHz (sine-wave)<br>-5 to +5 dBm @ Input port<br>-125 dBc/Hz max. @ 100 Hz<br>-135 dBc/Hz max. @ 1 kHz<br>-140 dBc/Hz max. @ 10 kHz   |
| 1-14. | L.O. Phase Noise                                                                    | -60 dBc/Hz max. @ 100 Hz<br>-70 dBc/Hz max. @ 1 kHz<br>-80 dBc/Hz max. @ 10 kHz<br>-90 dBc/Hz max. @ 100 kHz<br>-100 dBc/Hz max. @ 1MHz |
| 1-15. | Spurious<br>[in band]<br>[in receive and]<br>[Out-of-band]                          | -50 dBc max. @ 13.75 to 14.5 GHz<br>-70 dBm max. @ 10.95 to 12.75 GHz<br>-50 dBc max. @ Pout = +39 dBm                                  |
| 1-16. | Receive Band Noise Density                                                          | -156 dBm/Hz max. @ 10.95 to 12.75 GHz                                                                                                   |
| 1-17. | Noise Figure                                                                        | 13 dB nom., 20 dB max.                                                                                                                  |
| 1-18. | Group Delay over any 54MHz                                                          | 2.5 nS p-p max.                                                                                                                         |
| 1-19. | Input Impedance<br><NJT5218N / NJT5218NM><br><NJT5218F / NJT5218FM>                 | 50 ohms nom.<br>75 ohms nom.                                                                                                            |
| 1-20. | Input V.S.W.R.                                                                      | 2 : 1 max                                                                                                                               |
| 1-21. | Output V.S.W.R.                                                                     | 2 : 1 max.                                                                                                                              |
| 1-22. | Output Load VSWR for Non Damage                                                     | Infinite : 1                                                                                                                            |
| 1-23. | DC Power Requirement<br>[Voltage Range]<br>[Power Consumption]                      | +24 / +48 VDC (+18 to +60 VDC)<br>75 W typ. @ No IF signal<br>79 W typ., 93 W max. @ Pout = +39 dBm                                     |
| 1-24. | Mute                                                                                | Shut off the HPA in case of L.O. unlocked or no 10 MHz reference signal.                                                                |
| 1-25. | LED Indicator                                                                       | GREEN: L.O. locked<br>RED: L.O. unlocked<br>(or no 10 MHz reference signal)                                                             |

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## 2. Mechanical Specifications

|      |                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2-1. | Input Interface     | <p>&lt;NJT5218N&gt; IF / Ref. / DC Power: N-type, female</p> <p>&lt;NJT5218F&gt; IF / Ref. / DC Power: F-type, female</p> <p>&lt;NJT5218NM&gt; IF / Ref.: N-type, female<br/>DC Power: MS connector</p> <p>&lt;NJT5218FM&gt; IF / Ref.: F-type, female<br/>DC Power: MS connector</p> <p>- MS connector -<br/>Model: MS3102E 12S-3P<br/>Mating connector: MS3106E 12S-3S<br/>Assignment:</p>  <p><b>Pin A: Prime (+24/+48VDC)</b><br/><b>Pin B: Prime Return</b></p> |
| 2-2. | Output Interface    | Waveguide, WR-75 (with Groove)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 2-3. | Dimension & Housing | 219.5 (L) x 175 (W) x 99 (H) mm<br>[8.64" (L) x 6.89" (W) x 3.90" (H)]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 2-4. | Weight              | 3.2 kg typ., 3.3 kg max.<br>[7.0 lbs typ., 7.3 lbs max.]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

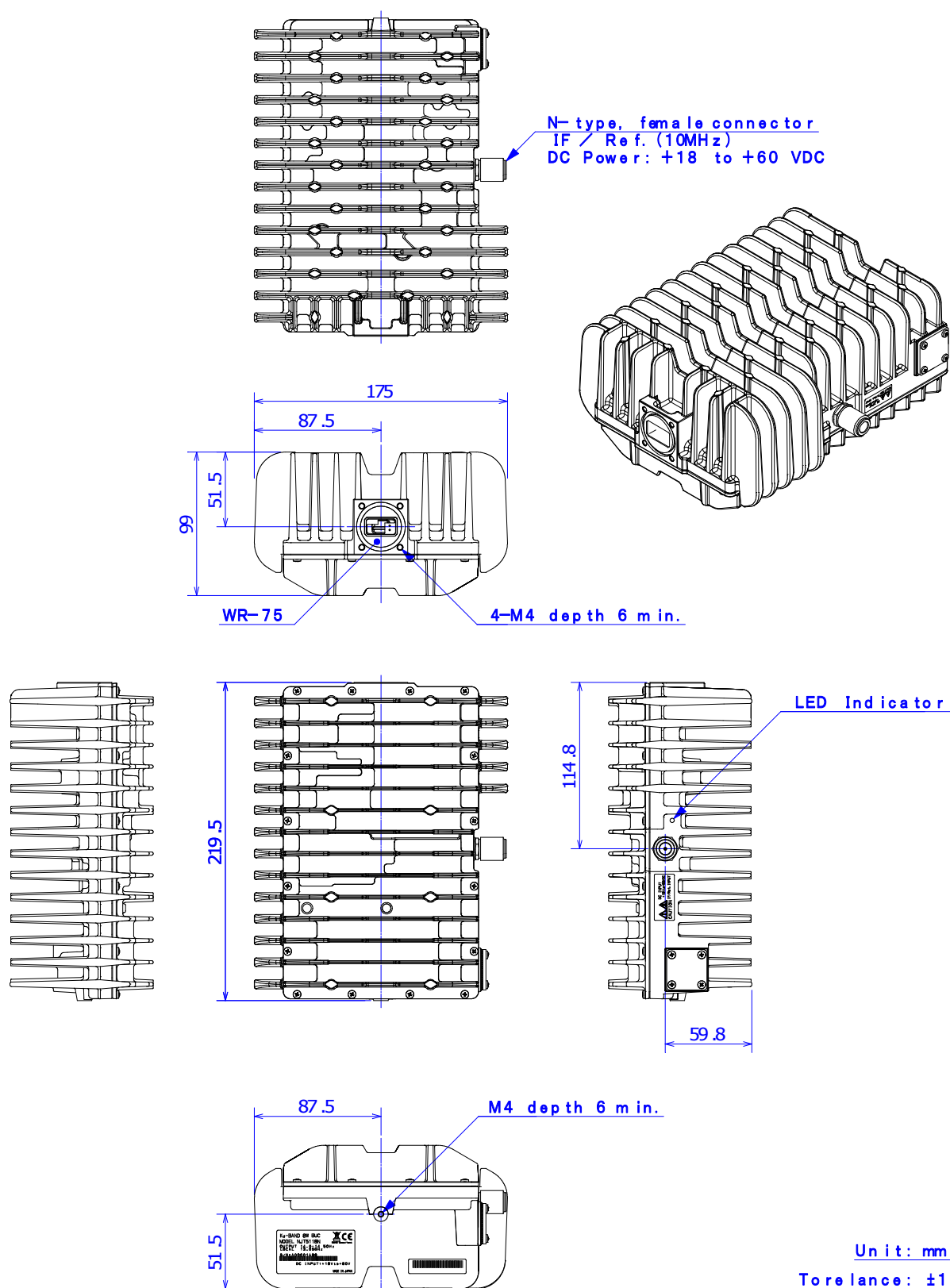
## 3. Environmental Specifications

|      |                                                                           |                                                                                         |
|------|---------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 3-1. | Temperature Range (ambient)                                               | -40 to +55 C (operating)<br>-40 to +75 C (storage)                                      |
| 3-2. | Humidity                                                                  | 0 to 100 %                                                                              |
| 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)<br>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. | Comply with RoHS (Restricting the use of Hazardous Substances) directives |                                                                                         |

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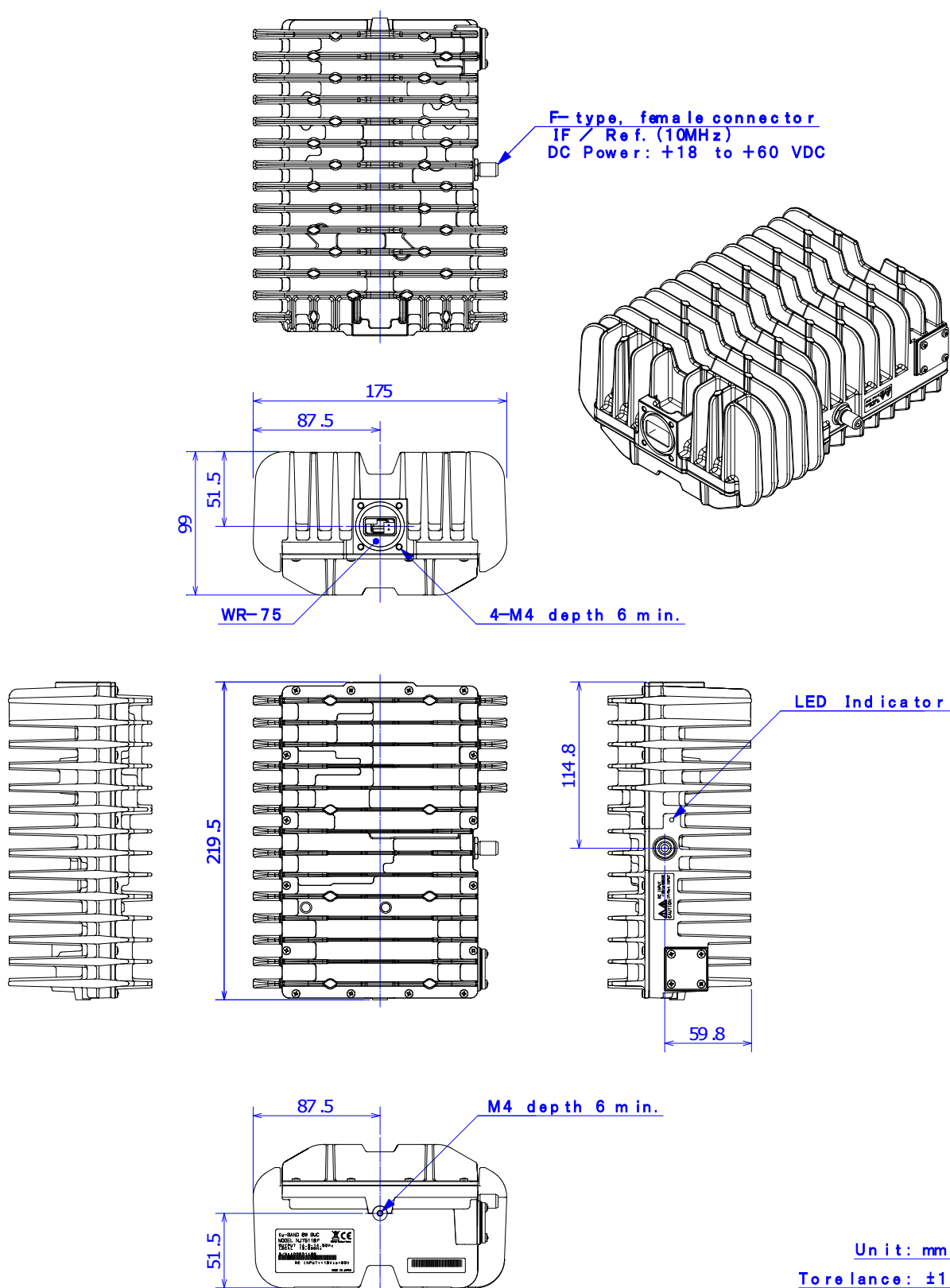
## 4. Outline Drawing

- NJT5218N: IF / Ref. / DC Power Input: N-type Female Connector



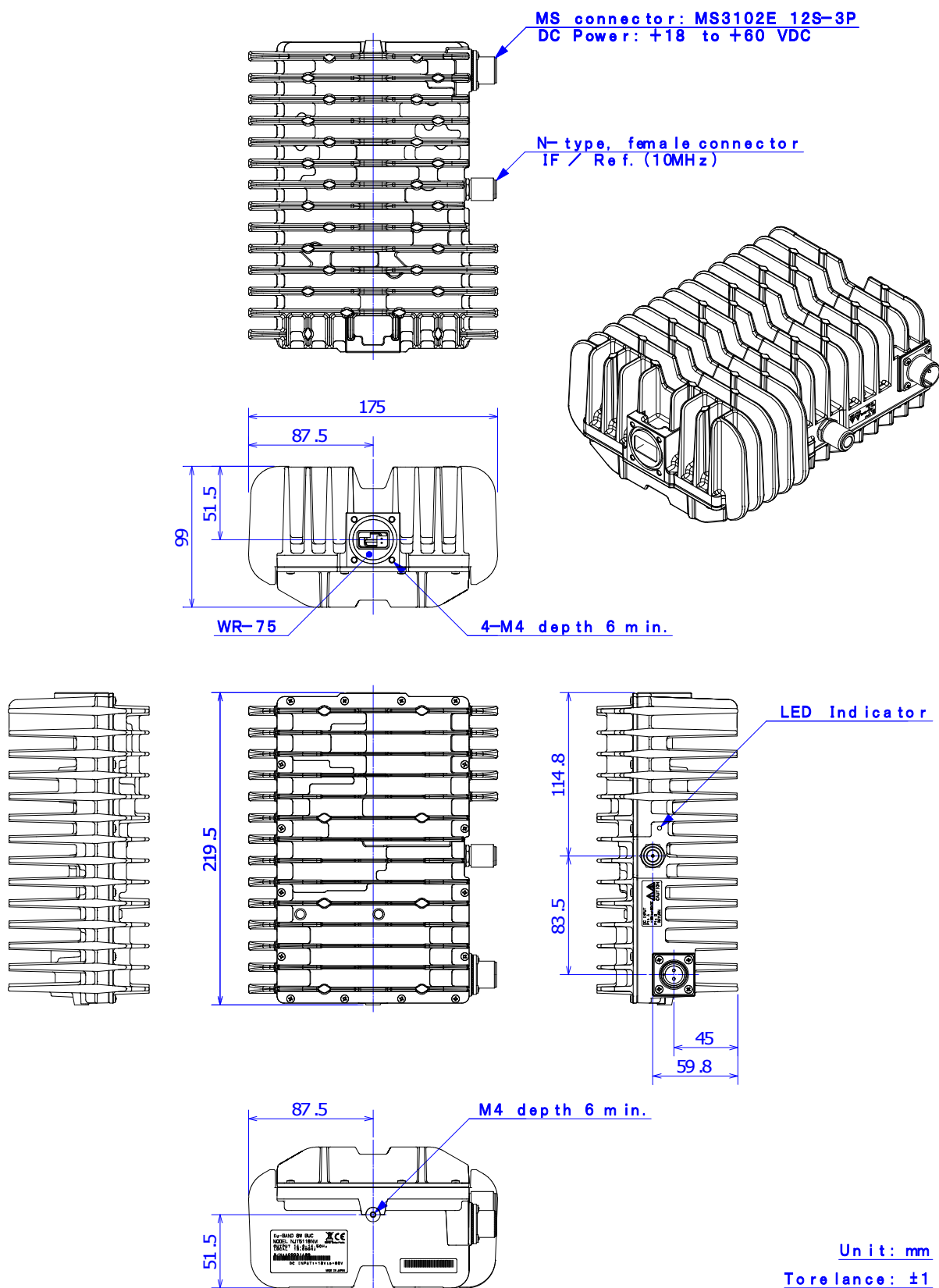
\* Above Specifications are subject to change without notice.

- NJT5218F: IF / Ref. / DC Power Input: F-type Female Connector



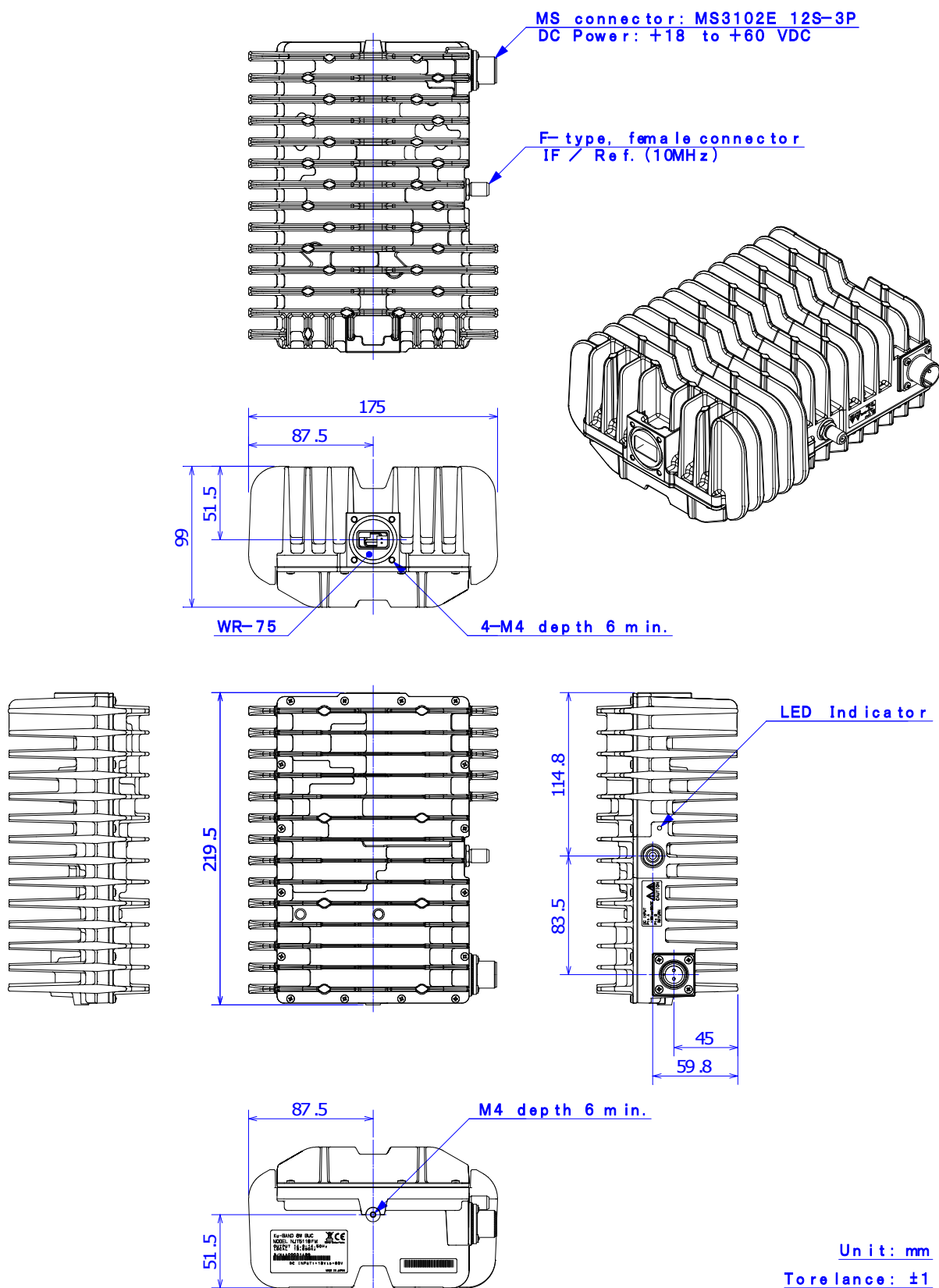
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- NJT5218NM: IF / Ref. Input: N-type Female Connector  
DC Power Input: MS Connector



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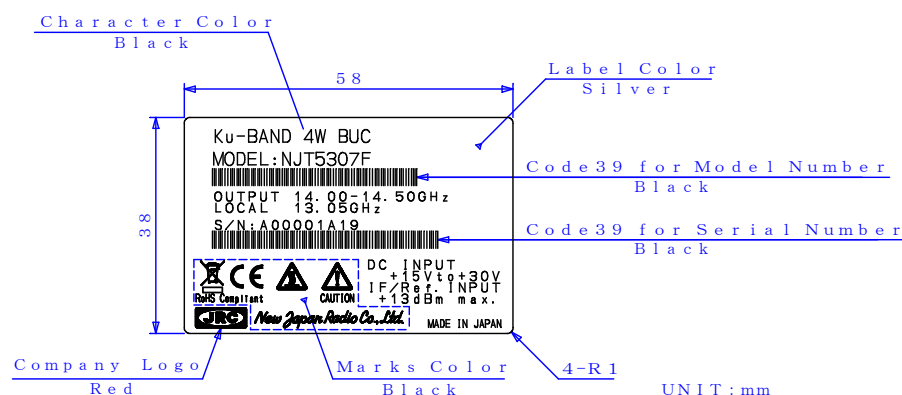
- NJT5218FM: IF / Ref. Input: F-type Female Connector  
DC Power Input: MS Connector



\* Above Specifications are subject to change without notice.

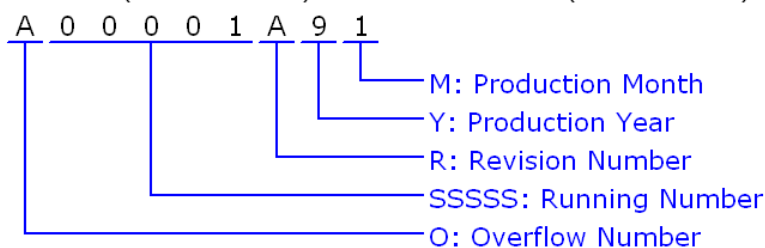
## 5. Label

### 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 ....

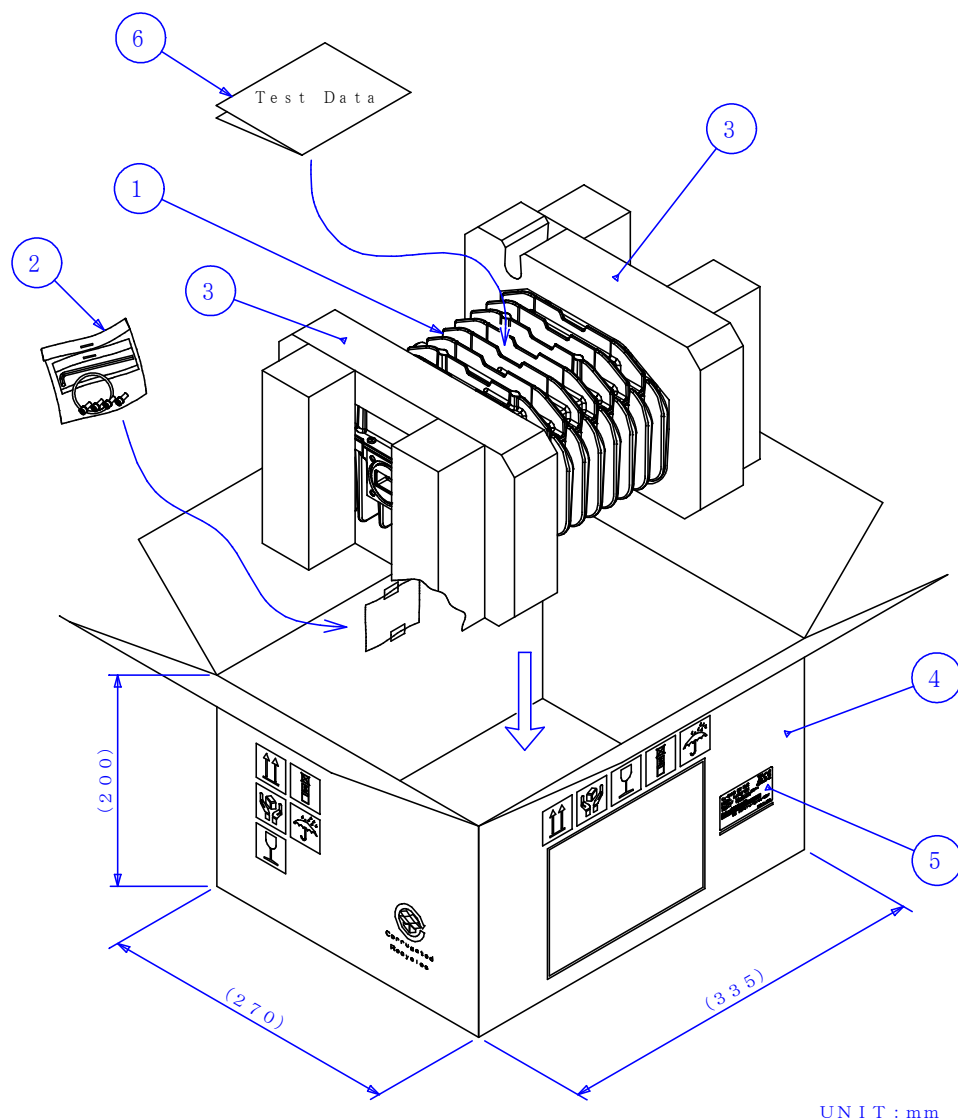
M: Production Month - ALPHANUMERIC (1character)

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

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## 6. Package

- NJT5218N: IF / Ref. / DC Power Input: N-type Female Connector
- NJT5218F: IF / Ref. / DC Power Input: F-type Female Connector

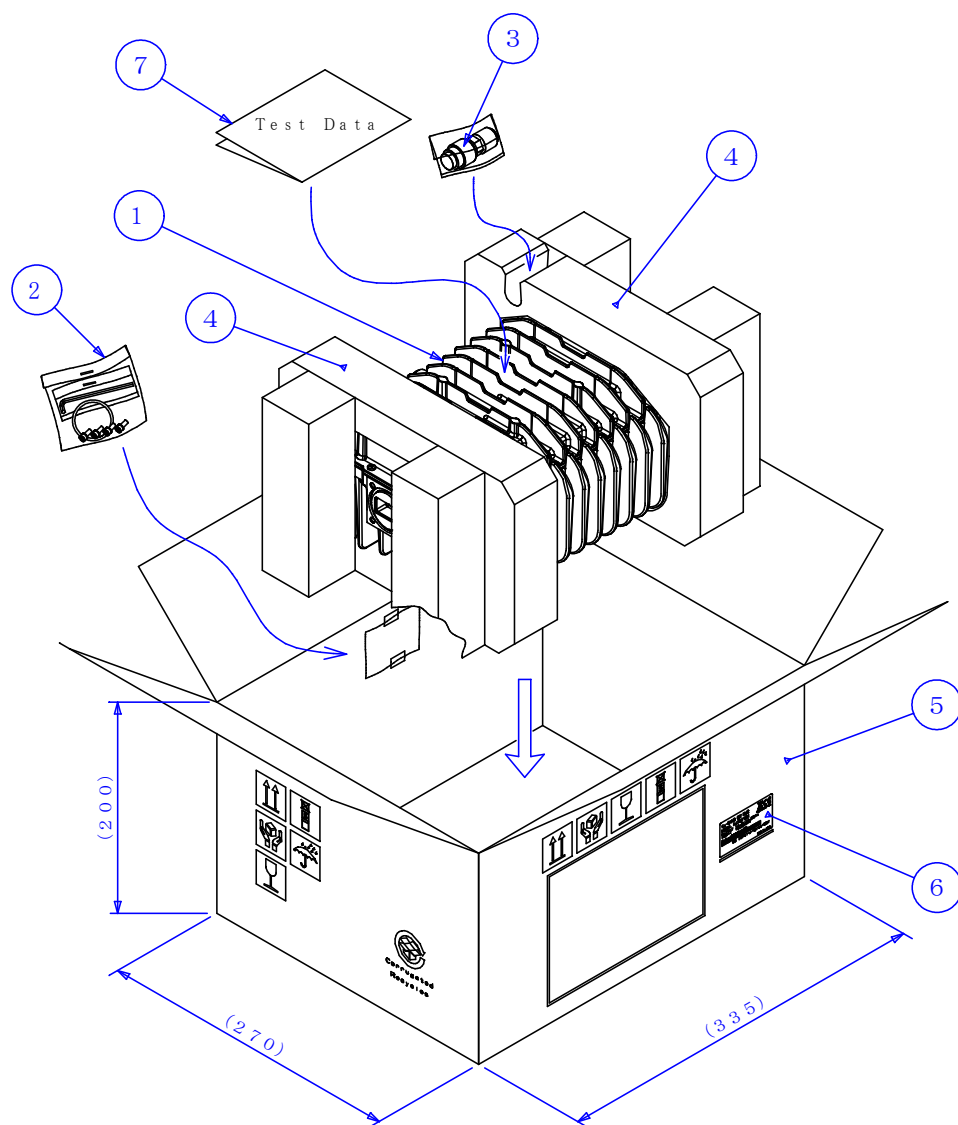


UNIT : mm

- ① : BUC
- ② : Accessories
  - O-RING
  - Hexagon Socket Head Bolts  
M4×10 4 pieces (SUS, SW and W)
  - Hexagon Wrench Keys (M4 Type)
- ③ : Polyethylene Foam For Package Cushioning
- ④ : Corrugated Fibreboard (Double Wall)
- ⑤ : Label
- ⑥ : Test Data

\* Above Specifications are subject to change without notice.

- NJT5218NM: NJT5218FM: IF / Ref. Input: N-type Female Connector  
DC Power Input: MS Connector
- NJT5218FM: NJT5218FM: IF / Ref. Input: F-type Female Connector  
DC Power Input: MS Connector



UNIT : mm

- ① : BUC
- ② : Accessories
  - O-RING
  - Hexagon Socket Head Bolts  
M4×10 4 pieces (SUS, SW and W)
  - Hexagon Wrench Keys (M4 Type)
- ③ : Accessory
  - MS mating connector
- ④ : Polyethylene Foam For Package Cushioning
- ⑤ : Corrugated Fibreboard (Double Wall)
- ⑥ : Label
- ⑦ : Test Data

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