

915 MHz Metamaterial-Inspired Antenna using a Split Ring Resonator structure

1. Features

- LPWA, 920MHz (920MHz Antenna for Smart meter, LPWA, etc)
- Compact Size
- High Efficiency
- Surface Mount Device
- Embossed Reel Package

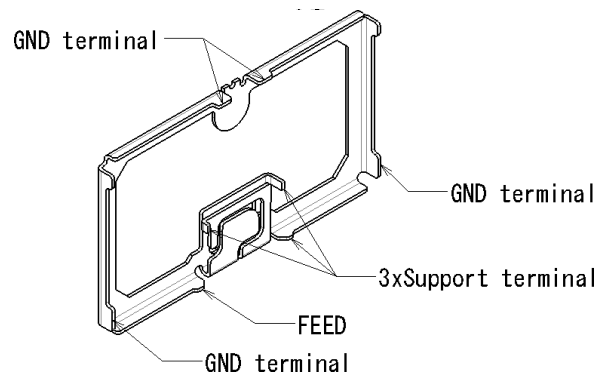
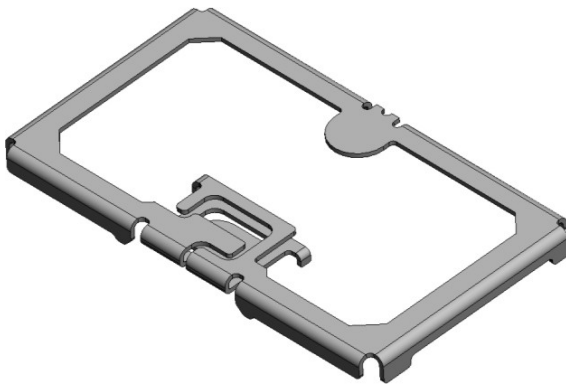
2. Part Number

RAC00915-R

1900 (1900-piece T&R)

3. Shape, Dimensions and Weight

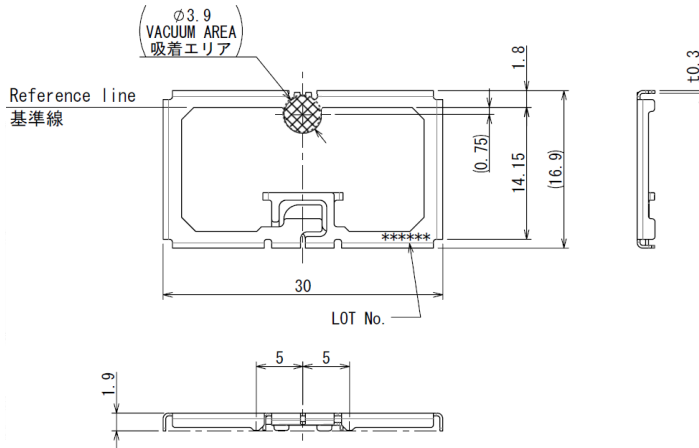
3.1. Shape



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3.2. Dimensions

w 30 x d 16.9 x h 1.9 mm



3.3. Weight

0.73 g (Typical)

3.4. Plating

None

3.5. Type

Split Ring

4. RF Characteristics

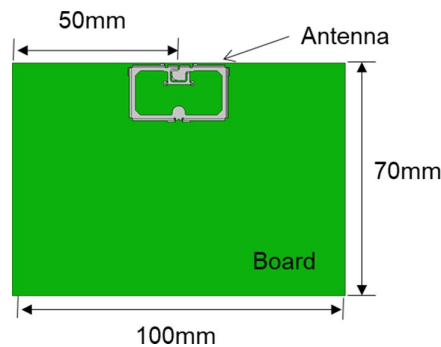
4.1. Frequency Range

902- 928 MHz

4.2. Impedance 50 Ω

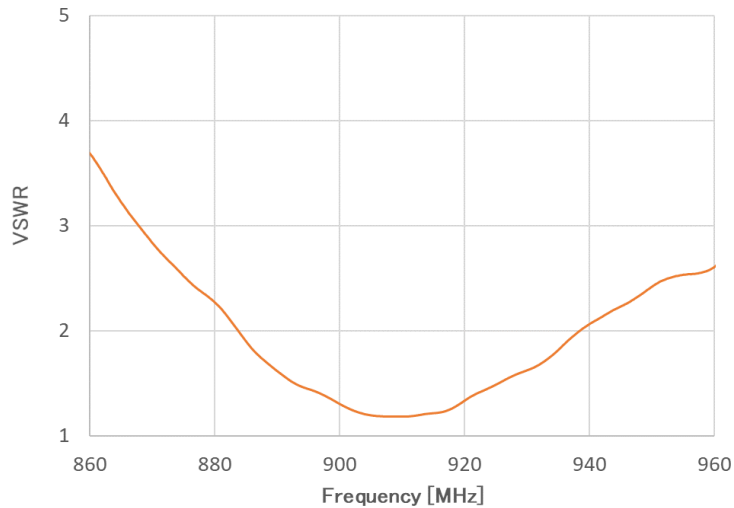
4.3. VSWR (Voltage Standing Wave Ratio)

100x70mm VSWR (VSWR characteristics of the antenna on a referenceboard of 100 x 70mm)



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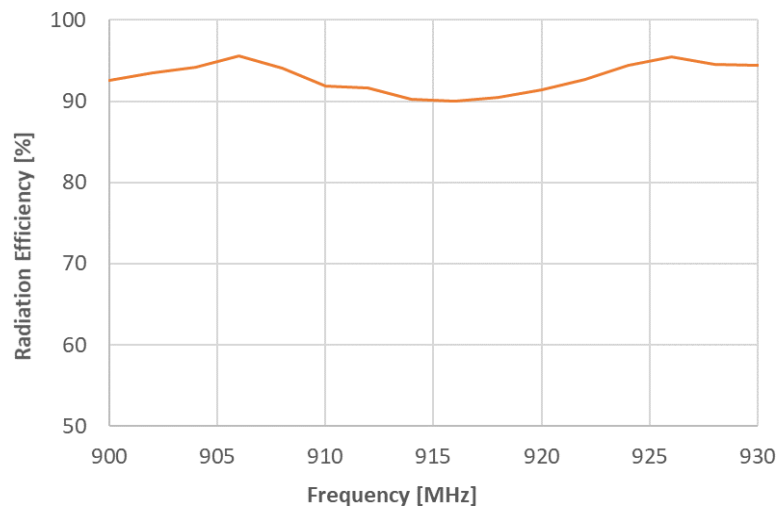
VSWR < 2.5 (Frequency Range: 902 – 928 MHz)



Radiation Efficiency

100x70mm (Radiation efficiency of the antenna mounted on a reference board of 100 x 70mm, excluding cable and feeder line loss)

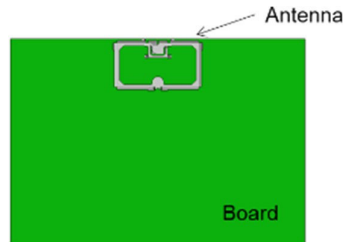
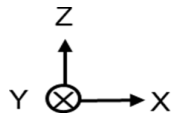
Radiation Efficiency > 90 % (Frequency Range: 902 - 928 GHz)



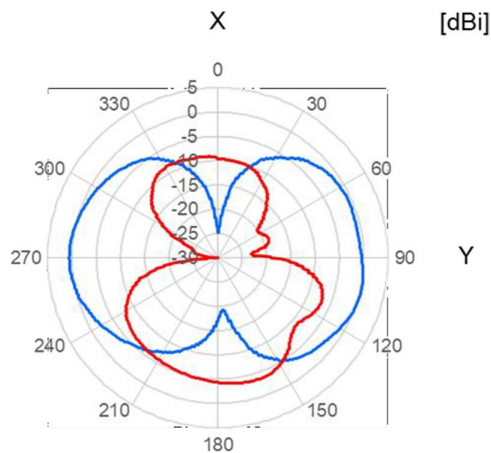
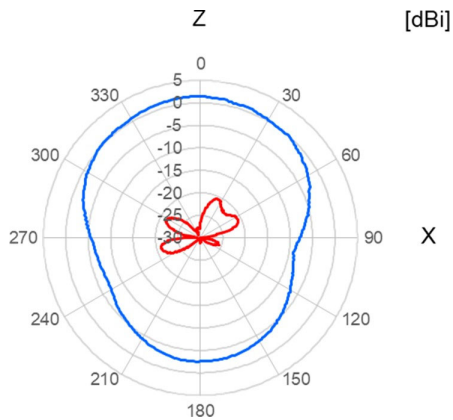
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4.4. Radiation Pattern:

100x70mm (Radiation pattern of the antenna mounted on a reference board of 100 x 70mm)



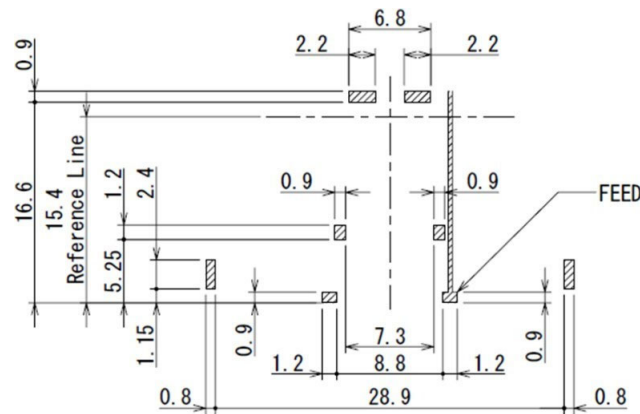
Radiation Pattern @920 MHz



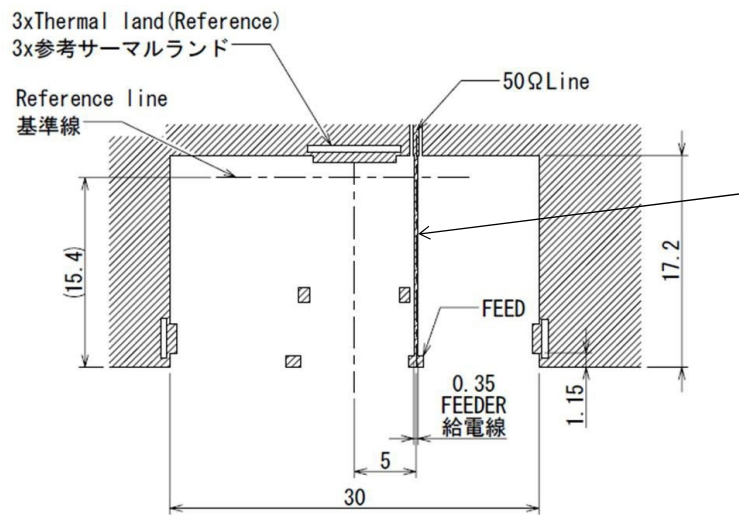
blue line: Horizontal Polarization red line: Vertical Polarization

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5. Environmental Conditions
 - 5.1 Operating Temperature Range
-40 °C to +125 °C
 - 5.2 Storage Conditions
IEC 61760-2
Stock Temperature Range
+5 °C to +40 °C
Relative Humidity
10 % to 75 %
6. Recommended Land Pattern and Reference Board



Recommended Land Pattern

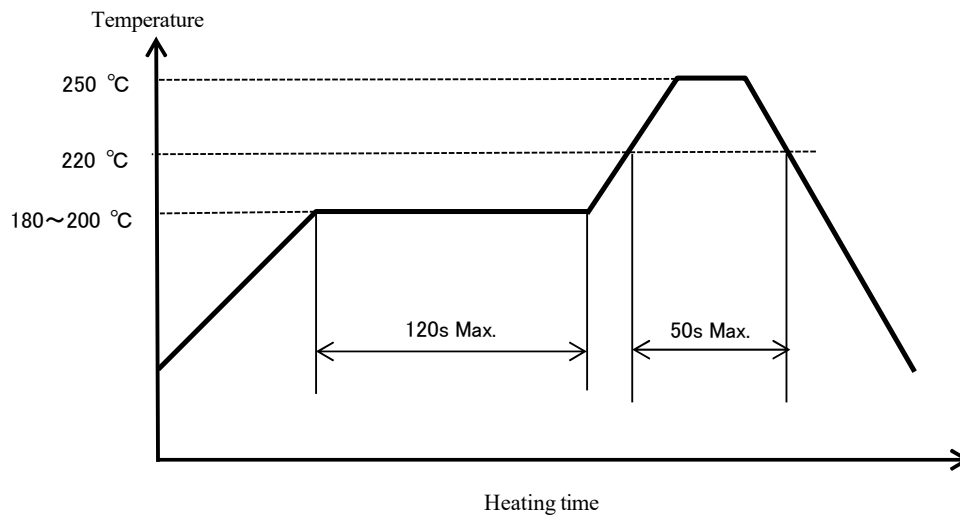


Reference Board

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7. Recommended Reflow Temperature Profile

	Temperature	Heating Time
Preheating Temperature	180 to 200 °C Max	120s Max
Main Heating Temperature	220 °C Max	50s Max
Peak Temperature	250 °C Max	-

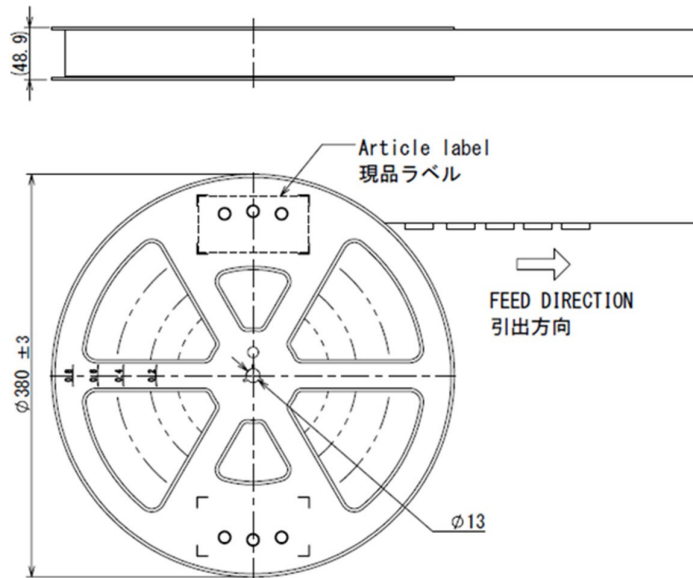


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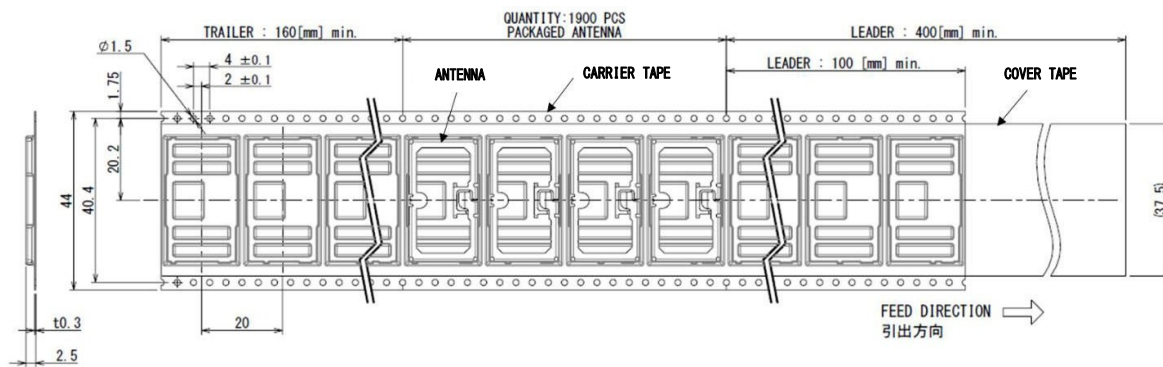
8. Packaging

8.1 Package Quantity: 1,900 pieces/reel

8.2 Embossed Reel Dimensions



8.3 Tape Dimensions



Revision History

Version	Date	Revision
A	13 May 2021	Initial Version
B	29 August 2022	Name revision