

## 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

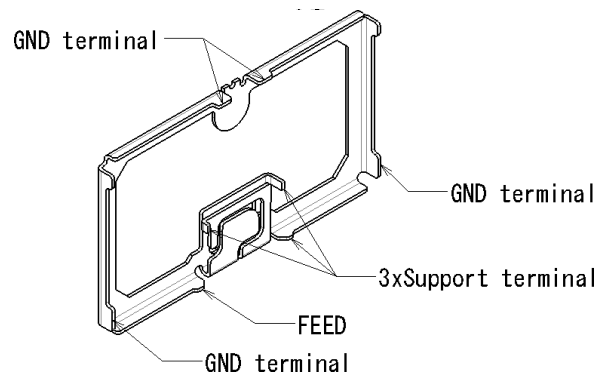
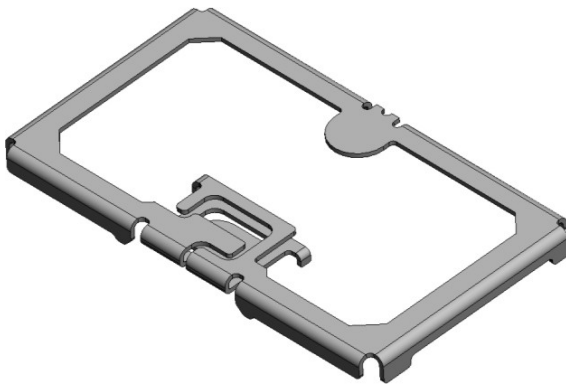
### 2. Part Number

RAC00915-R

1900 (1900-piece T&R)

### 3. Shape, Dimensions and Weight

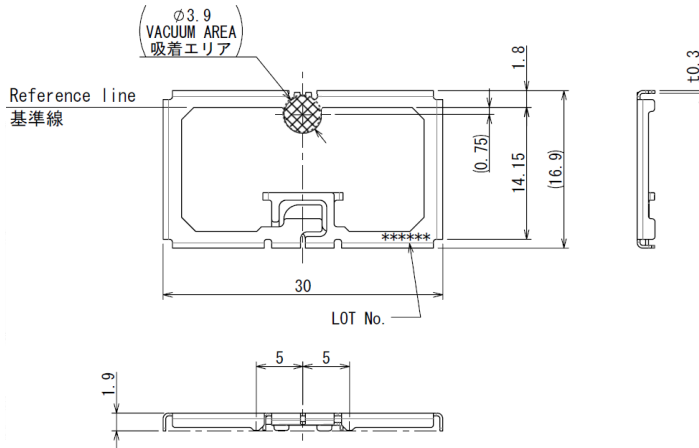
#### 3.1. Shape



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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

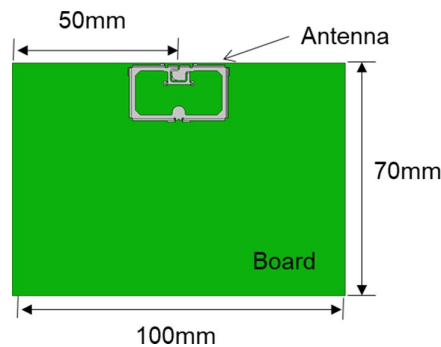
### 4.1. Frequency Range

902- 928 MHz

### 4.2. Impedance 50 $\Omega$

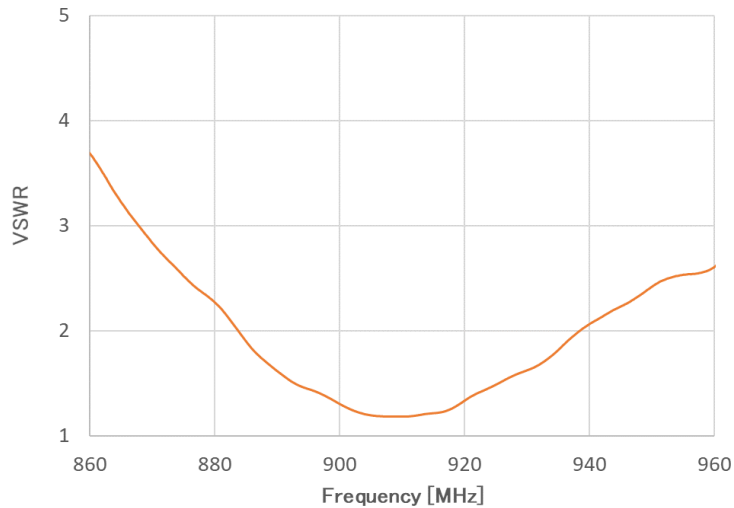
### 4.3. VSWR (Voltage Standing Wave Ratio)

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



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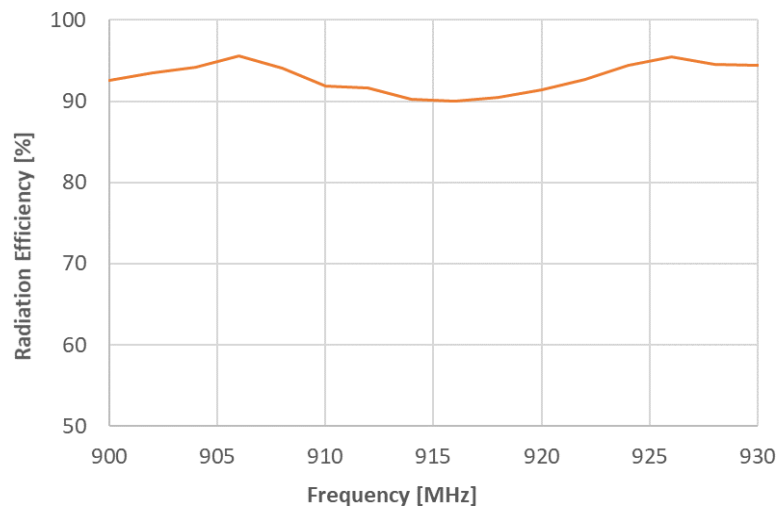
VSWR < 2.5 (Frequency Range: 902 – 928 MHz)



Radiation Efficiency

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

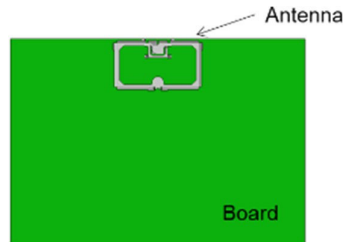
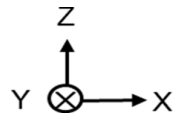
Radiation Efficiency > 90 % (Frequency Range: 902 - 928 GHz)



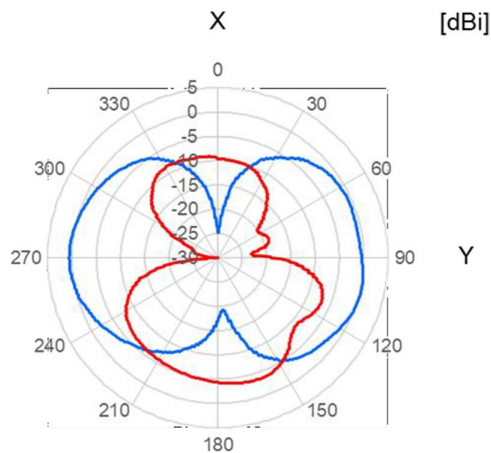
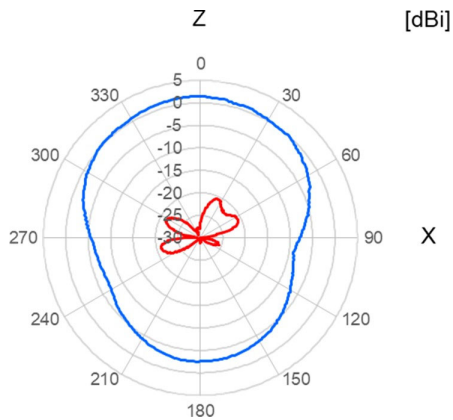
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### 4.4. Radiation Pattern:

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



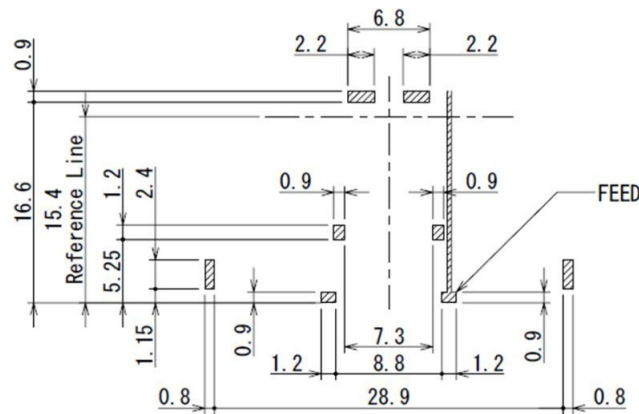
### Radiation Pattern @920 MHz



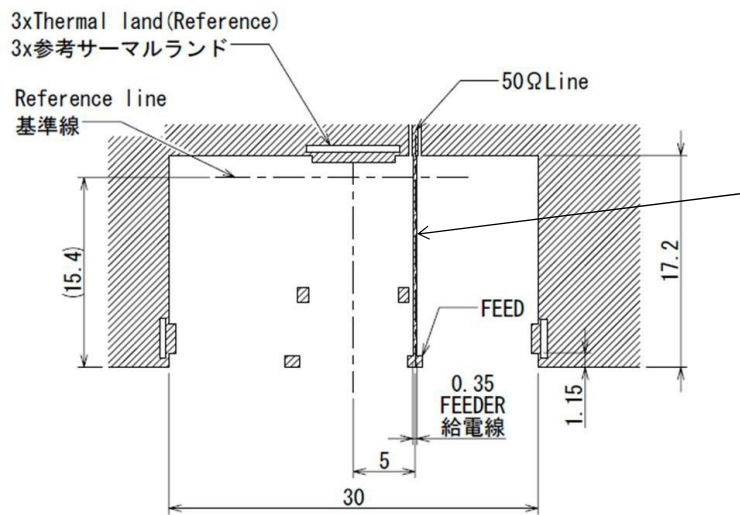
blue line: Horizontal Polarization red line: Vertical Polarization

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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

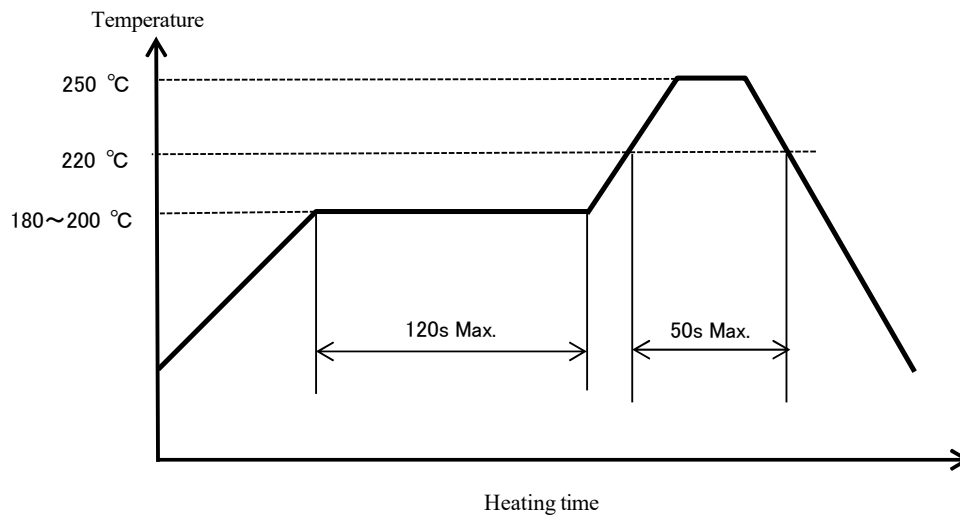


Reference Board

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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	-

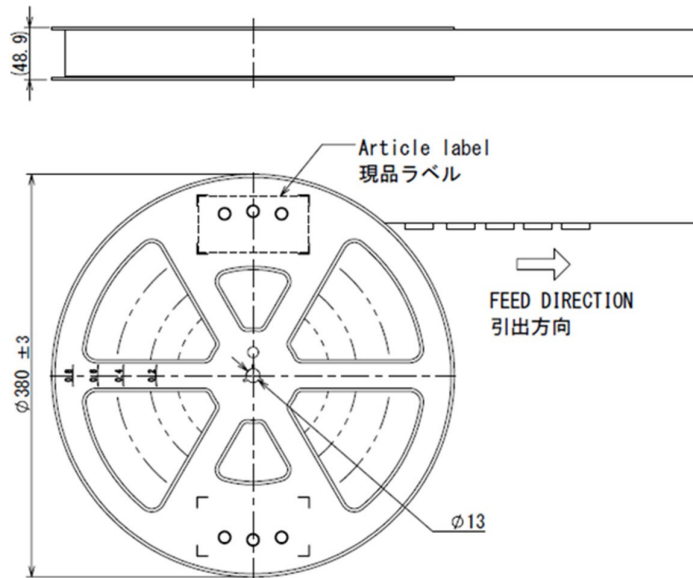


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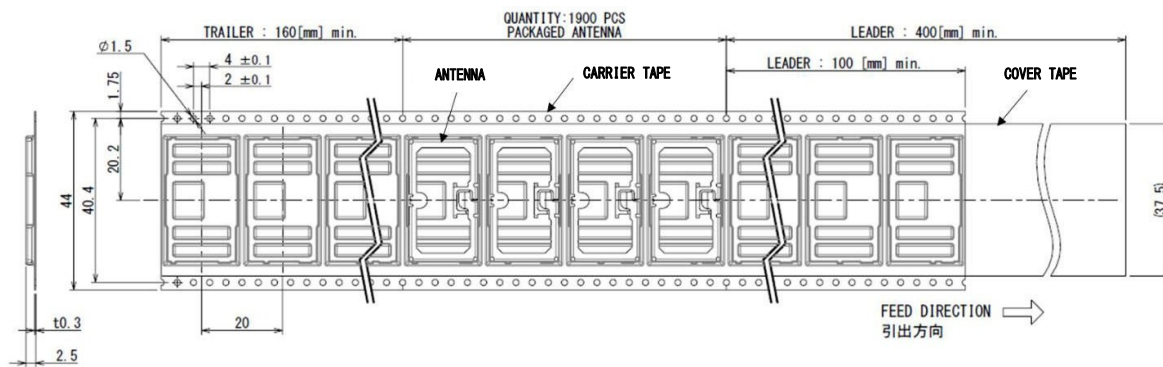
### 8. Packaging

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