

# ISM Band 434/315MHz Chip Antenna

## 1. Explanation of Product Number

R	A	0	1	L	P	F	B	0	1	R	A	0	0	1
		(1)	(2)	(3)	(4)	(5)	(6)							



✂ The direction of white dot forwards to feed point

Product Code:

(1) Dimensions:

01: 16x5.1x0.8(mm)

(2) Polarization:

L: linear polarization

(3) Product categories:

PF: polymer substrate

(4) Working frequency:

B: 433.925/315MHz

(5) Applications::

01: ISM band system

(6) Antenna series:

RA001: serial number

**Tolerances (Unless otherwise specified)**

X :  $\pm 1$       X.X :  $\pm 0.1$       X.XX :  $\pm 0.01$

Angle :  $\pm$       Hole Dia. :  $\pm$



RIFO Technologies Corporation

Website: [www.rifo.com.tw](http://www.rifo.com.tw)

Scale :

Unit : mm

Prepared By : Helen

Checked By : Jeff

Designed By : Jason

Approved By : Allen

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## 2. Features

- \*Stable and reliable in performances
- \*Compact size
- \*RoHS compliance
- \*Low temperature coefficient of frequency
- \*SMD type

## 3. Applications

- \*ISM Band system

## 4. Description

RIFO's chip antenna series are specially designed for 433.925/315MHz band application. Based on RIFO's proprietary designs and processes, this chip antenna has excellent stability and sensitivity to consistently provide high signal reception efficiency.

## 5. Electrical Specifications

No	Item	SPEC.	Unit
1	Dimensions (LxWxH)	16*5.1*0.8	mm
2	Operating Frequency Range	433.925/315	MHz
3	VSWR	2 max.	
4	Impedance	50	$\Omega$
5	Polarization	Linear	
6	Peak gain	0.5	dBi
7	Bandwidth(typ.)	10	MHz
8	Pattern	Omni-directional	

\*The antenna performance is measured on 93\*55mm test Board.

\*Center frequency will be offset to operating frequency according to the conditions of user's ground plane and radome.

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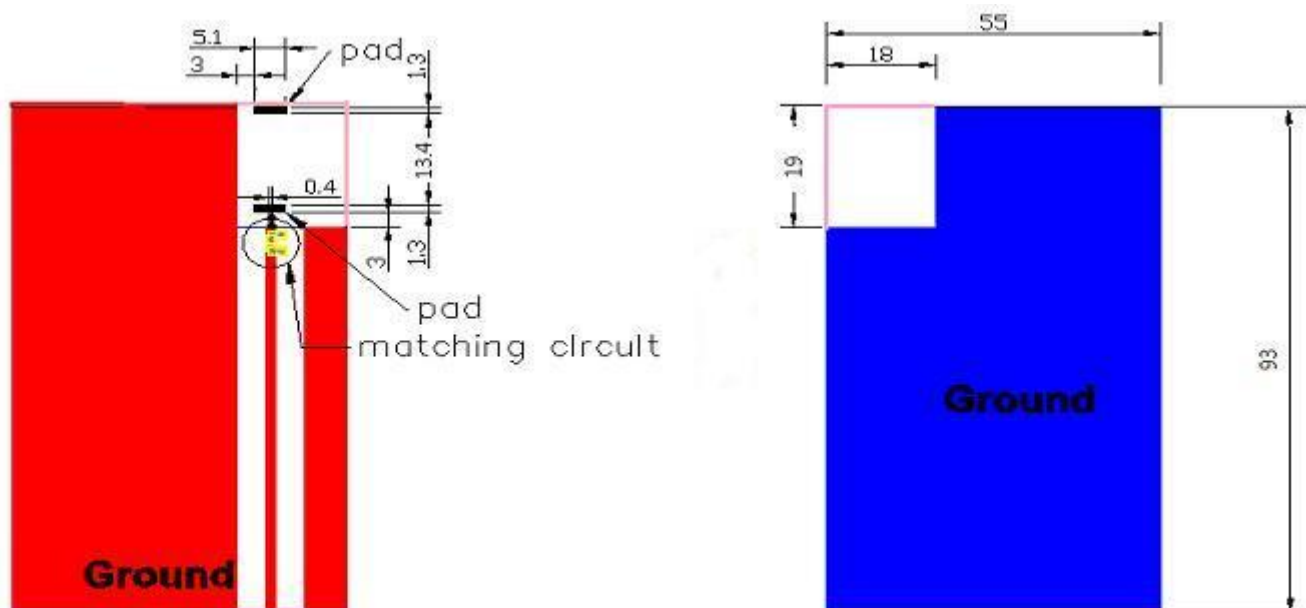
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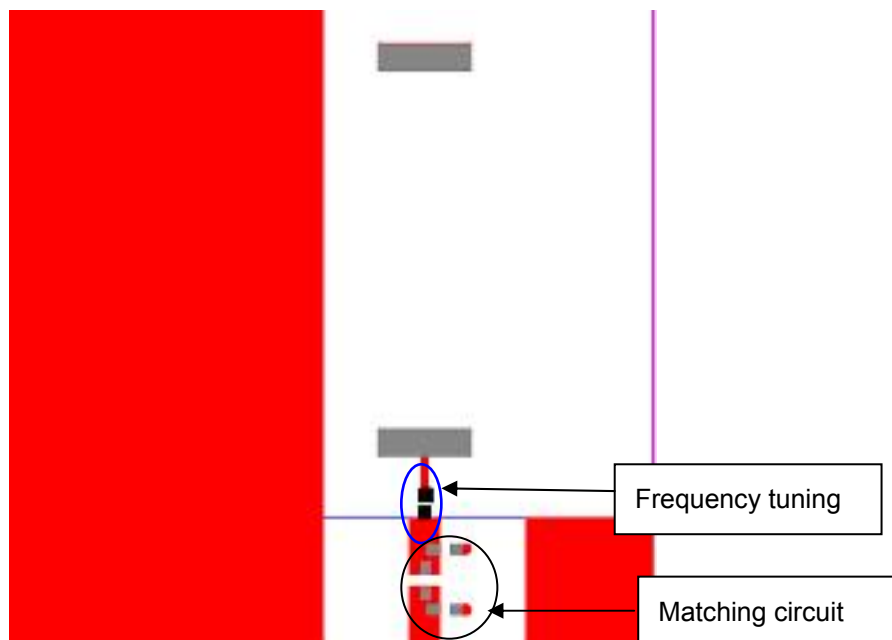
## 6. Layout Guide

### 6.1 Test Board Dimension



※ Test Board size is 93\*55mm

### 6.2 PCB Design Guide



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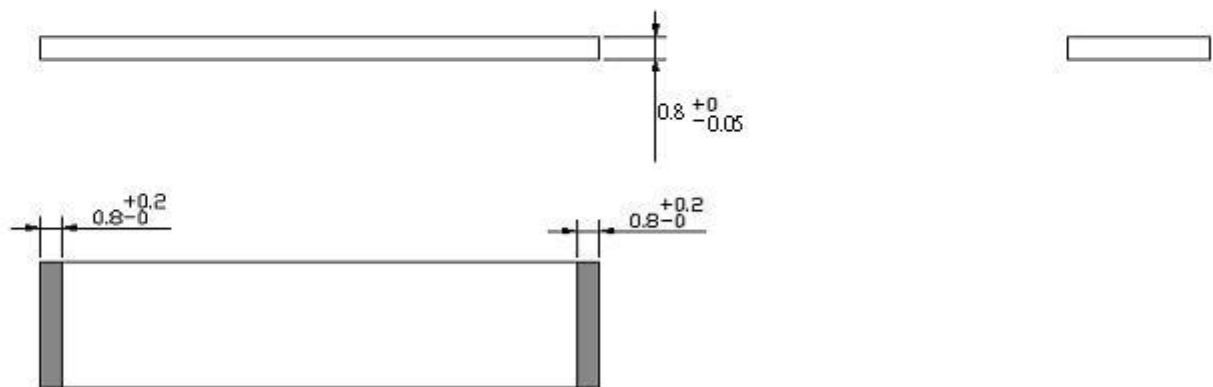
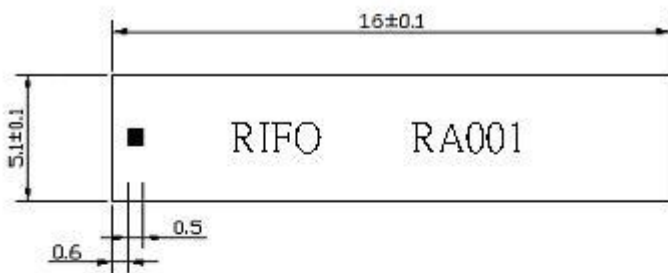
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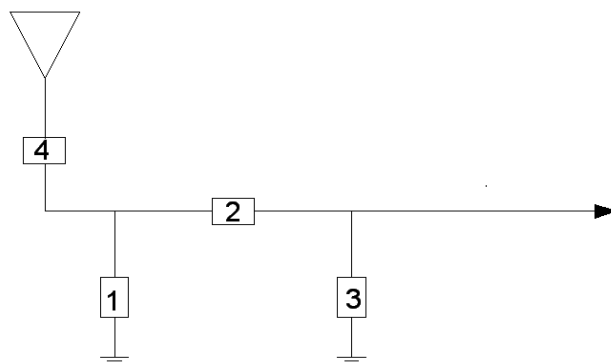
## 7. Antenna Dimensions (unit: mm)



## 8. Measurement Result

### 8.1 Matching circuit for 433.925MHz

#### Antenna



System Matching Circuit Component		
Location	Description	Vendor
1	22nH	DARFON(0402)-
2	3.3pF	YAGEO(0402)
3	3.9pF	YAGEO(0402)
4	0 ohm	(0402)

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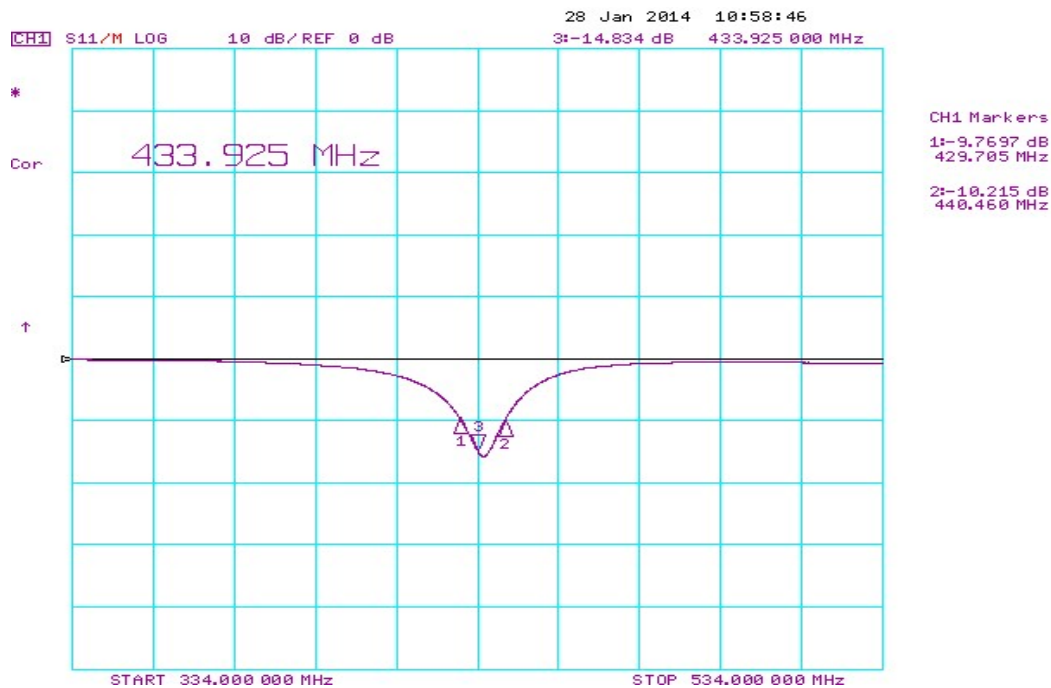
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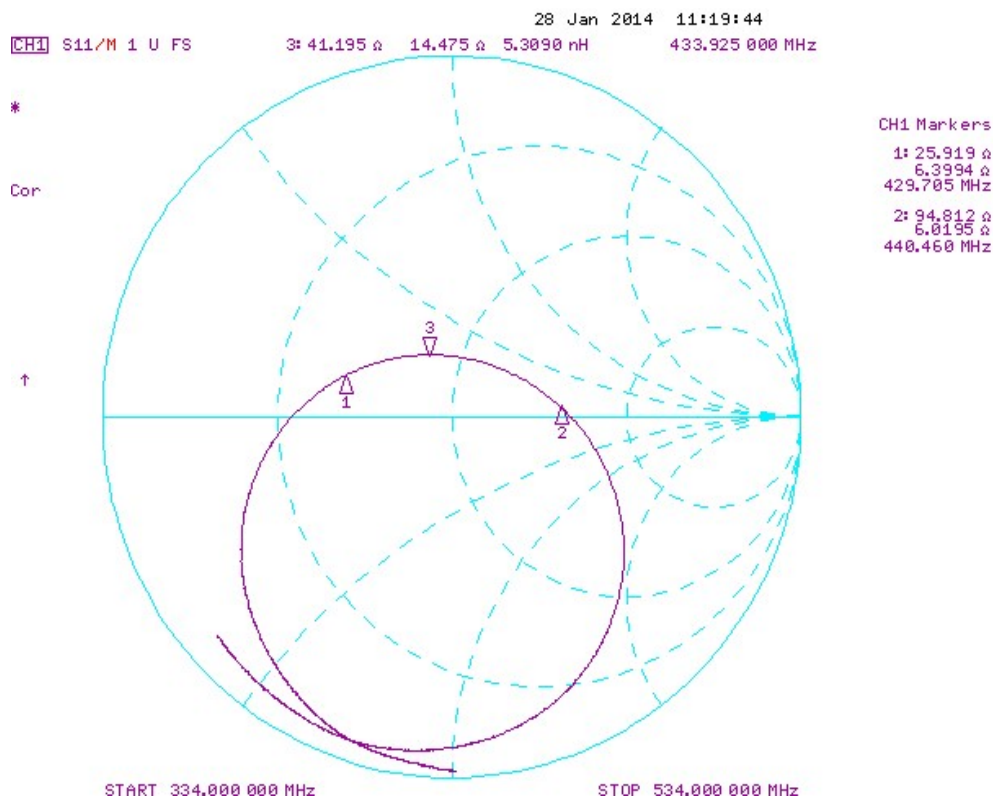
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(a) Return Loss (S11 / VSWR)



(b) Smith Chart Loss (S11 / VSWR)



**Tolerances (Unless otherwise specified)**

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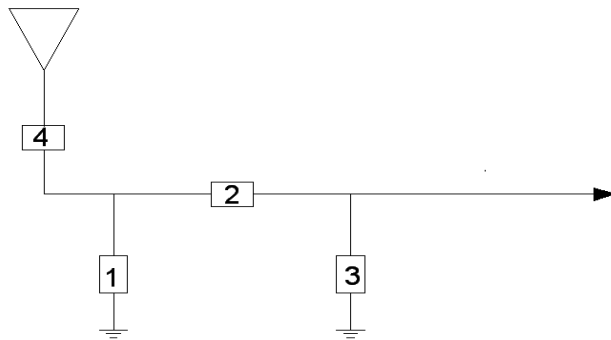
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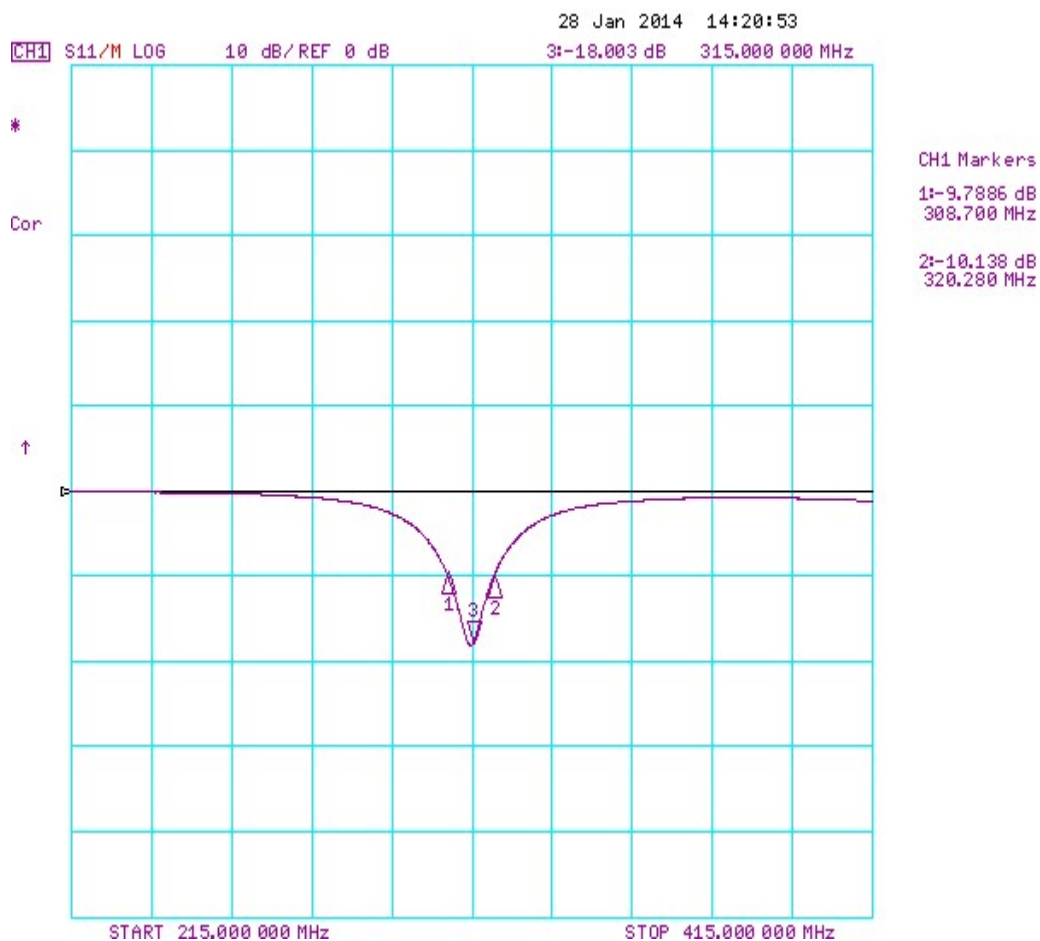
## 8.2 Matching circuit for 315MHz

### Antenna



System Matching Circuit Component		
Location	Description	Vendor
1	47nH	DARFON(0402)-
2	2.7pF	YAGEO (0402)
3	1pF	YAGEO (0402)
4	100nH	DARFON(0402)

### (a) Return Loss (S11 / VSWR)



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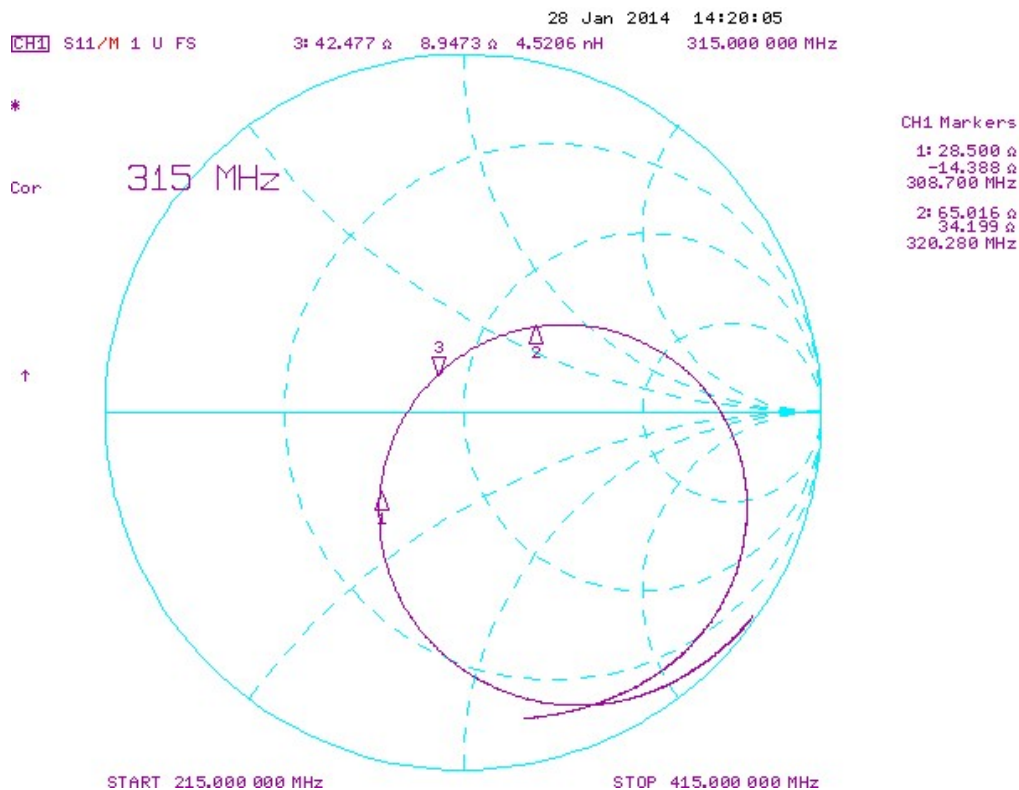
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(b) Smith Chart Loss (S11 / VSWR)



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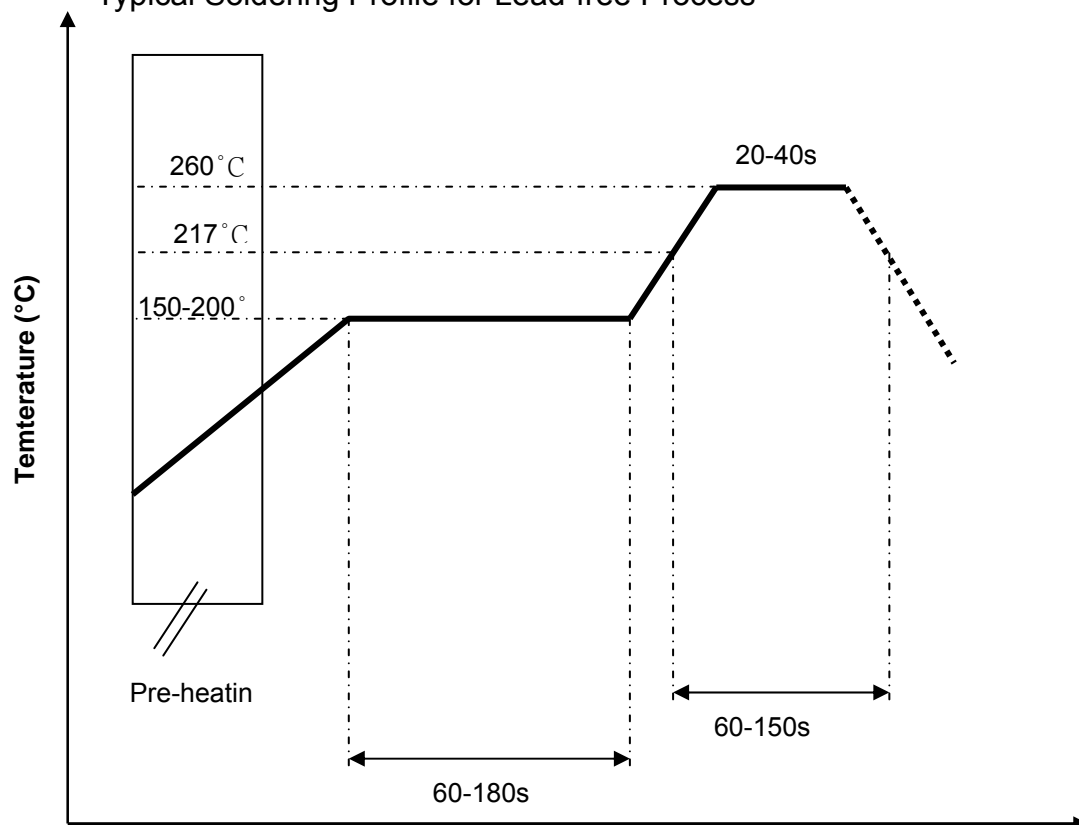
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## 9. Soldering Conditions:

Typical Soldering Profile for Lead-free Process



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