勤迈电子

Shenzhen Qinmai Electronics Co. Ltd.
401, Building A, Xinglongfu Maker Park, Poisson Road, Longhua New District, Shenzhen

SPECIFICATION FOR APPROVAL

CUSTOMER NO./ 型号: H2U36F1K1B0300(CW503)

MODEL NO./ 客户料号: AT2615

APPROVAL REV./ 承认书版本: QMKJ-CL-20200702

DATA/ 日 期: 2020-07-02

CUSTOMER AUTHORIZED SIGNATURE/客户承认签核准		

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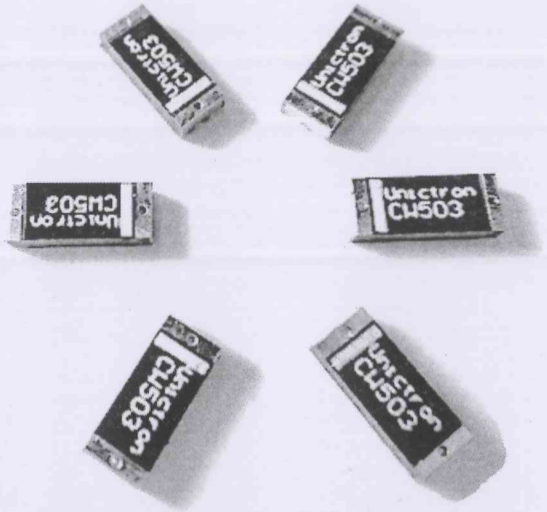
深圳市勤迈电子有限公司 合同专用章

5.0 x 2.2 x 1.0 (mm) WiFi / Bluetooth Chip Antenna (CW503)

Engineering Specification

1. Product Number

H	2	U	3	6	F	1	K	1	B	0	3	0	0



2. Features

*Stable and reliable in performances
*Low profile, compact size
*RoHS compliance
*SMT processes compatible

3. Applications

*ISM 2.4 GHz applications
*ZigBee/BLE applications
*Bluetooth earphone systems
*Hand-held devices when WiFi / Bluetooth functions are needed, e.g., Smart phones
*IEEE802.11 b/g/n
*Wireless PCMCIA cards or USB dongles

4. Description

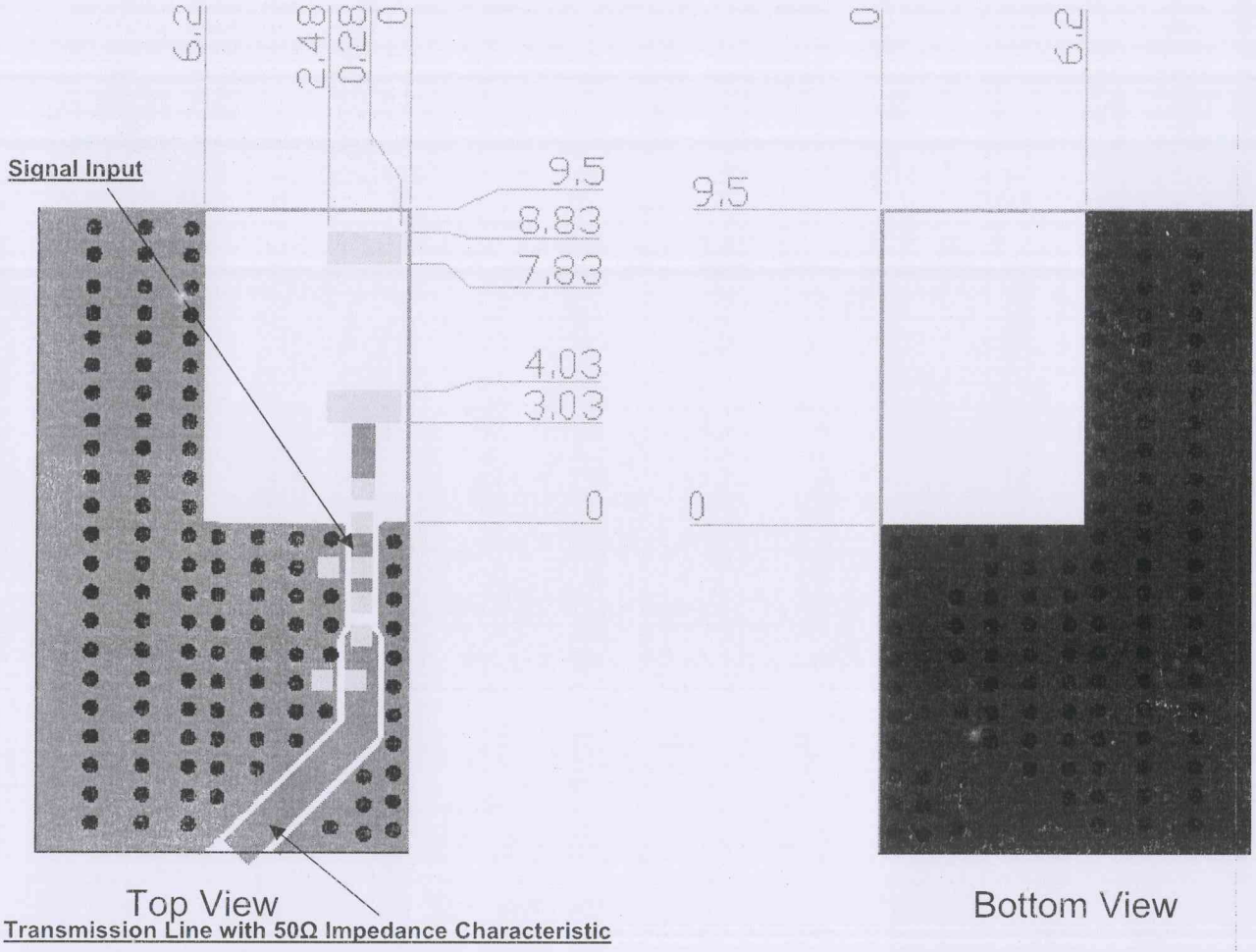
Unictron's CW503 chip antenna is designed for ISM 2.4GHz applications, covering frequencies 2400~2500MHz. Fabricated with proprietary design and processes, CW503 shows excellent performance and is fully compatible with SMT processes which can decrease the assembly cost and improve device's quality and consistency.

5. Layout Guide & Electrical Specifications

5-1. Layout Guide (unit：mm)

Solder Land Pattern:

The solder land pattern (gold marking areas) is shown below. Recommendation on matching circuit will be provided according to customer's installation conditions.



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Prepared by : Xenia	Designed by : Peter	Checked by : Mike	Approved by : Herbert

TITLE	DOCUMENT NO.	REV.
5.0 x 2.2 x 1.0 (mm) WiFi Band Chip Antenna(CW503) Engineering Specification	H2U36F1K1B0300	B

5-2. Electrical Specifications (Evaluation Board Dimensions: 40 x 40 mm^2)

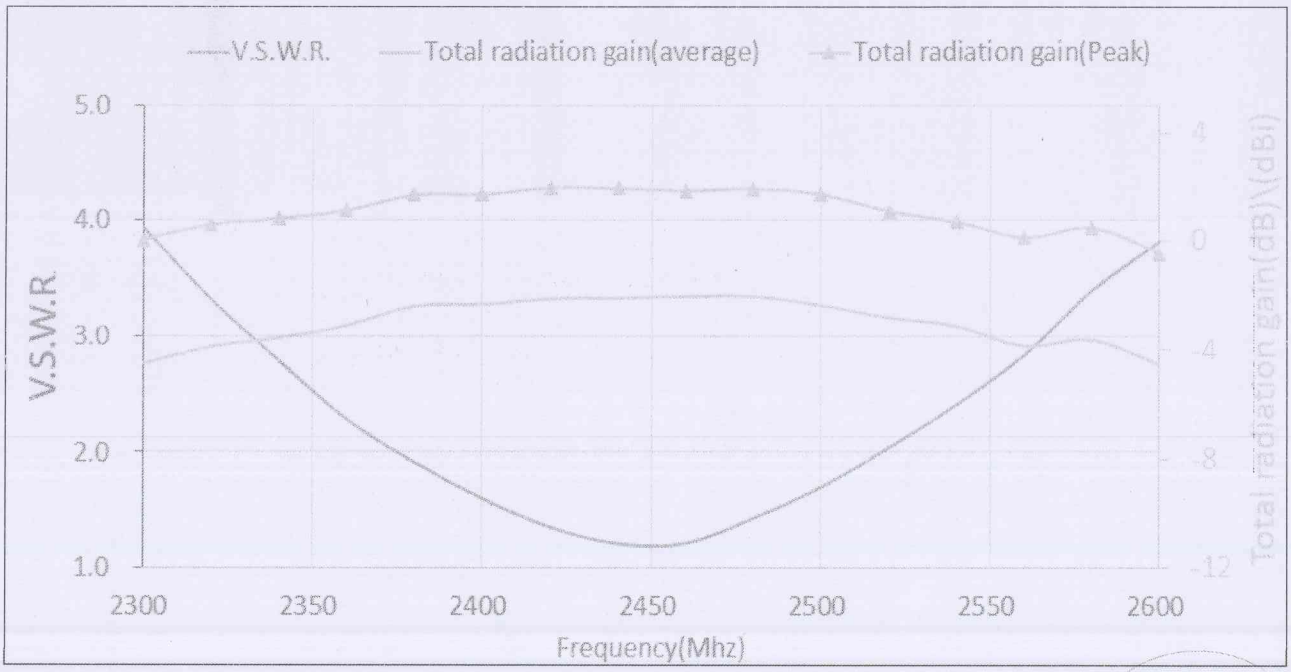
5-2-1. Electrical Table (2400~2500 MHz Band)

Characteristics		Specifications	Unit
Outline Dimensions		5.0 x 2.2 x 1.0	mm
Ground Plane Dimensions		40 x 40	mm
Working Frequency		2400~ 2500	MHz
VSWR (@ center frequency)*		1.2Max	
Characteristic Impedance		50	Ω
Polarization		Linear Polarization	
Peak Gain	(@2442 MHz)	1.9(typical**)	dBi
Efficiency		62.3(typical**)	%

*Center frequency means the frequency with the lowest value in return loss of the chip antenna on the evaluation board.

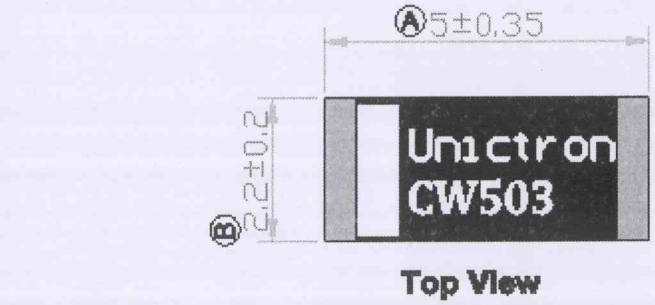
**A typical value is for reference only, not guaranteed.

5-2-2. Frequency vs. V.S.W.R. and Total Radiation Gain

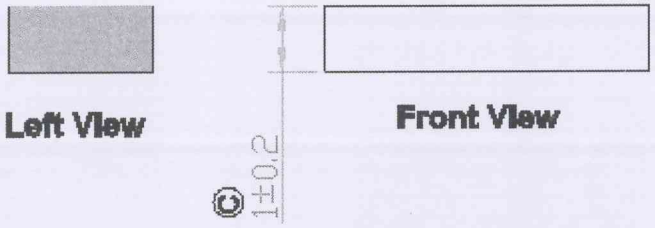


6. Outline Dimensions of Antenna & Evaluation Board (unit: mm)

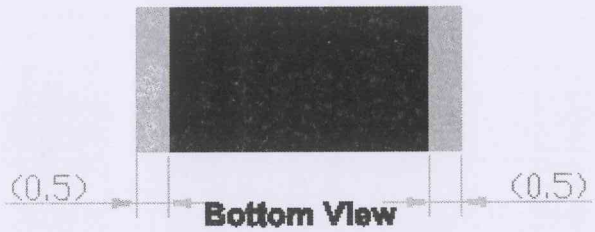
6-1. Antenna Dimensions



Top View



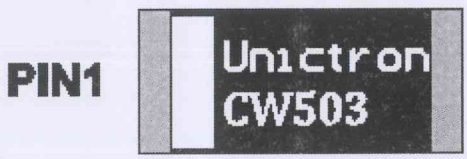
Left View　　Front View　　Right View



Bottom View

NOTE:
1.All materials are RoHS compliant.
2."Ⓐ~Ⓒ" Critical Dimensions.
3."( )" Reference Dimensions.

PIN Definition



Top View

Bottom View

PIN	1	2
Soldering PAD	Signal	N/C

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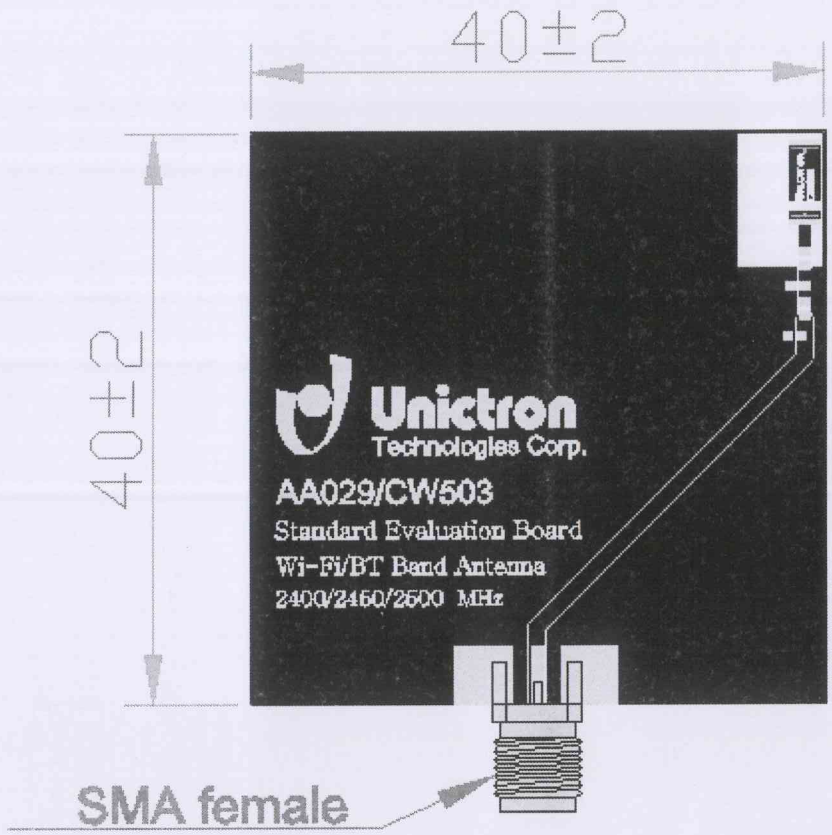
6-2. Evaluation Board with Antenna



unit : mm

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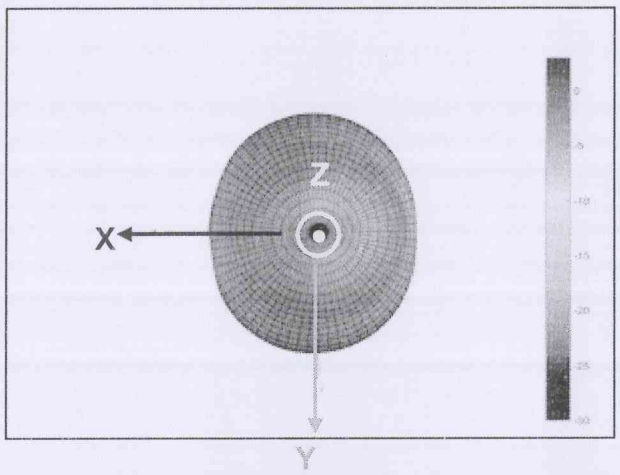
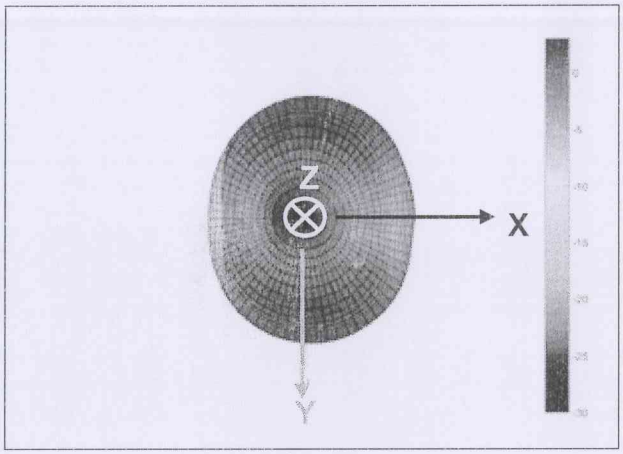
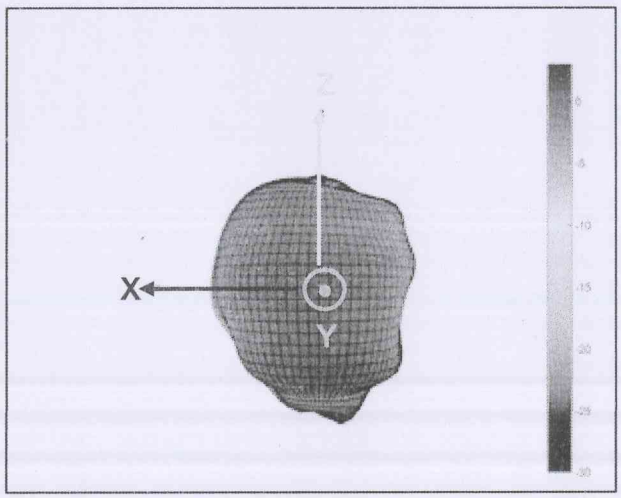
7. 3D Radiation Gain Pattern (with 40 x 40 mm^2 Evaluation Board)

3D Radiation Gain Pattern @ 2450 MHz (unit: dBi)







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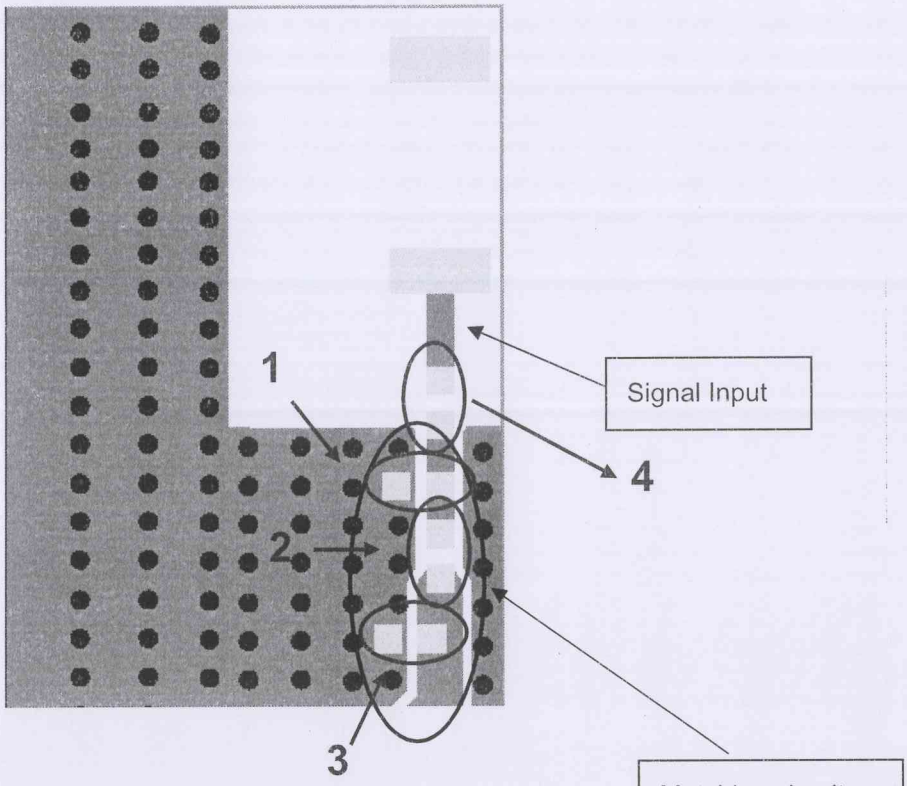
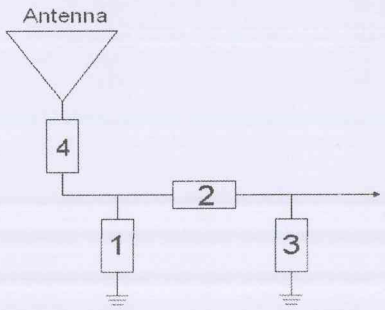
8. Frequency tuning and Matching circuit

8-1. Chip antenna tuning scenario：



8-2. Matching circuit：

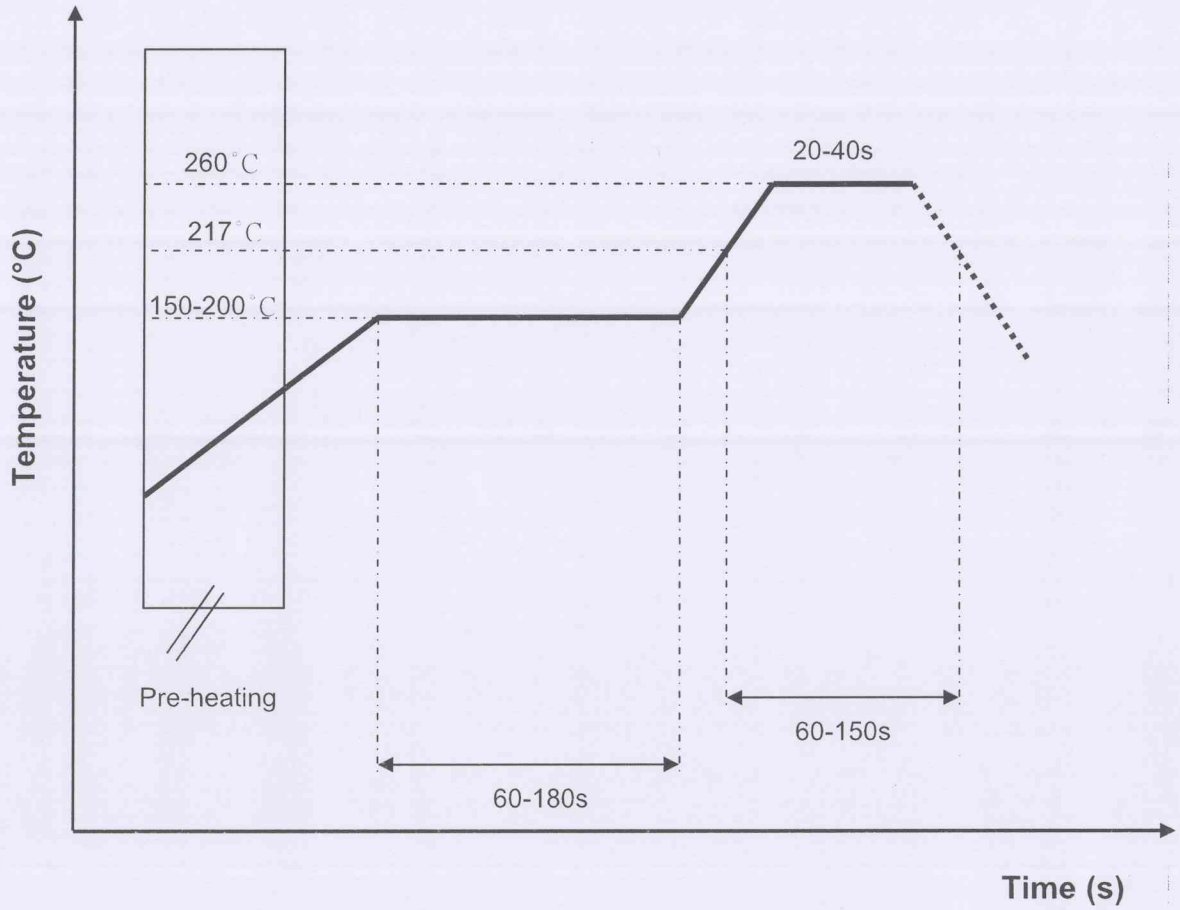
With the following recommended values of matching and tuning components, the center frequencies will be about 2450 MHz at our standard 40x40 mm^2 evaluation board. However, these are reference values, may need to be changed when the circuit boards or part vendors are different.



System Matching Circuit Component			
Location	Description	Vendor	Tolerance
1	N/A*	-	-
2	3.3nH, (0402)	DARFON	±0.1nH
3	1.5pF, (0402)	MURATA	±0.1pF
4	0Ω, (0402)	-	-

9. Soldering Conditions

Typical Soldering Profile for Lead-free Process

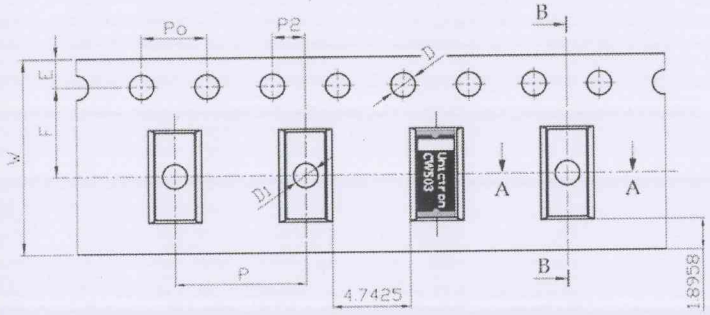


10. Packing

(1) Quantity/Reel: 5000 pcs/Reel

(2) Plastic tape: Black conductive polystyrene

a. Tape Drawing



b. Tape Dimensions (unit: mm)

Feature	Specifications	Tolerances
W	12.00	±0.30
P	8.00	±0.10
E	1.75	±0.10
F	5.50	±0.10
P2	2.00	±0.10
D	1.50	+0.10 -0.00
Po	4.00	±0.10
D1	1.50	±0.10
10Po	40.00	±0.20

11. Operating & Storage Conditions

11-1. Operating

(1) Maximum Input Power: 2 W

(2) Operating Temperature: -40℃ to 85℃

(3) Relative Humidity: 10% to 70%

11-2. Storage (sealed)

(1) Storage Temperature: -5℃ to 40℃

(2) Relative Humidity: 20% to 70%

(3) Shelf Life: 1 year

11-3. Storage (unsealed)

Meet the criteria of J-STD-033 MSL2a

11-4. Storage (After mounted on customer's PCB with SMT process)

(1) Storage Temperature: -40℃ to 85℃

(2) Relative Humidity: 10% to 70%

12. Notice

(1) Installation Guide:

Please refer to Unictron's application note "General guidelines for the installation of Unictron's chip antennas" for further information.

(2) All specifications are subject to change without notice.