

Document	Datasheet
Type	Metal Stamped Antenna
Application	2.4GHz
Part No.	AMAPST001
Revision	0.0

DATASHEET

Application

Bluetooth (2.4GHz)

Features

PIFA structure

Size (14.0*3.0*3.0mm³)

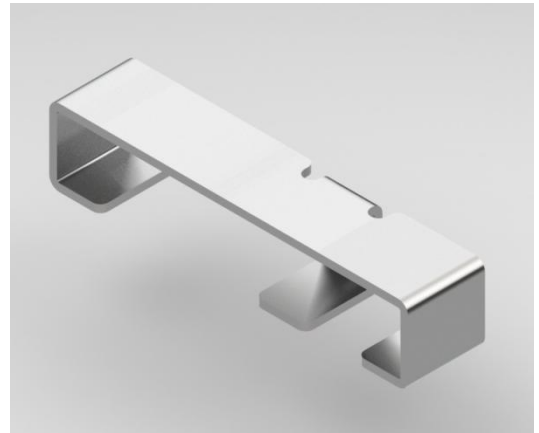
Performance optimizing

with tuning the conductive pattern

SMT available under Pb-free condition

RoHS Compliant

AEC-Q200 qualified



AMOTECH

Notes

The contents of this datasheet are subject to change without notice. Please confirm the specifications and delivery conditions when placing your order.

Revision History

Rev. No	Date	Title	Contents	Page
0.0	2016. 02. 03		New Published	

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1. Specifications

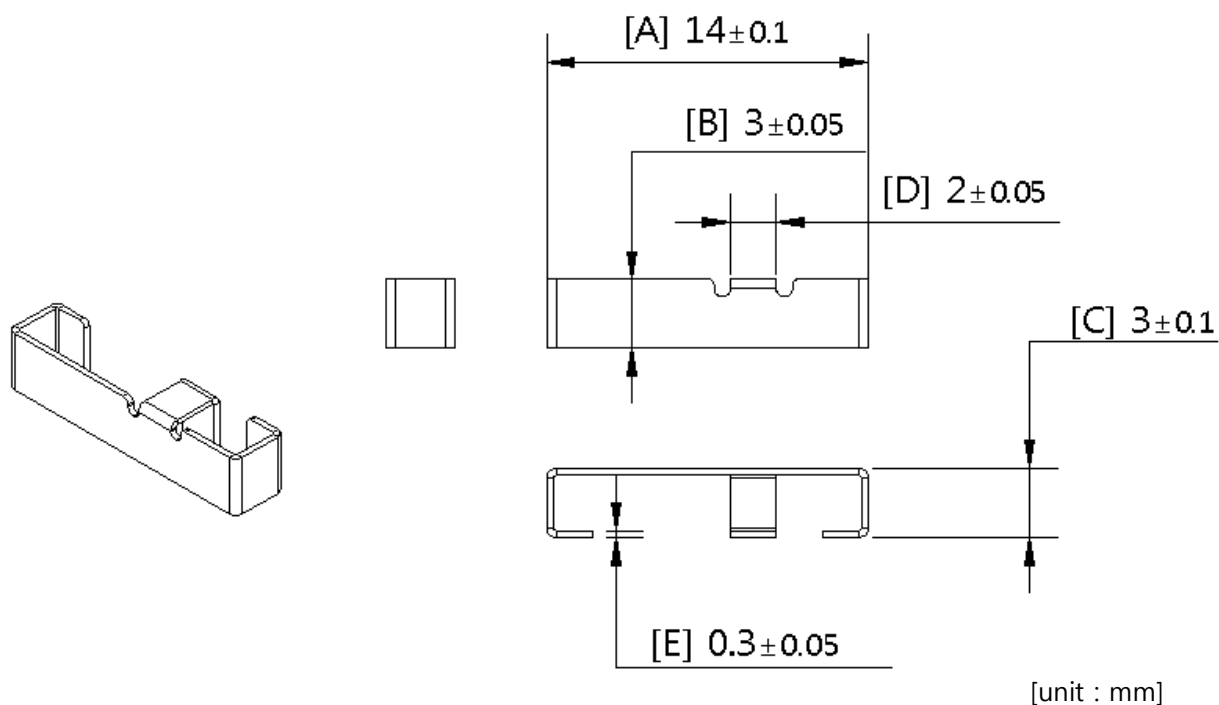
1.1 Electrical Specifications

No	Item	Spec.	Remark
1	Frequency Range [GHz]	2.400 ~2.485	
2	VSWR	Max 3.0:1	
3	Peak Gain[dBi]	Max 3.0	
3	Avg. Gain [dBi]	-1.23	
4	Efficiency [%]	Typ. 75.3	
5	Polarization	Linear	
6	Impedance [Ω]	Nominal 50	

1.2 Mechanical Specifications

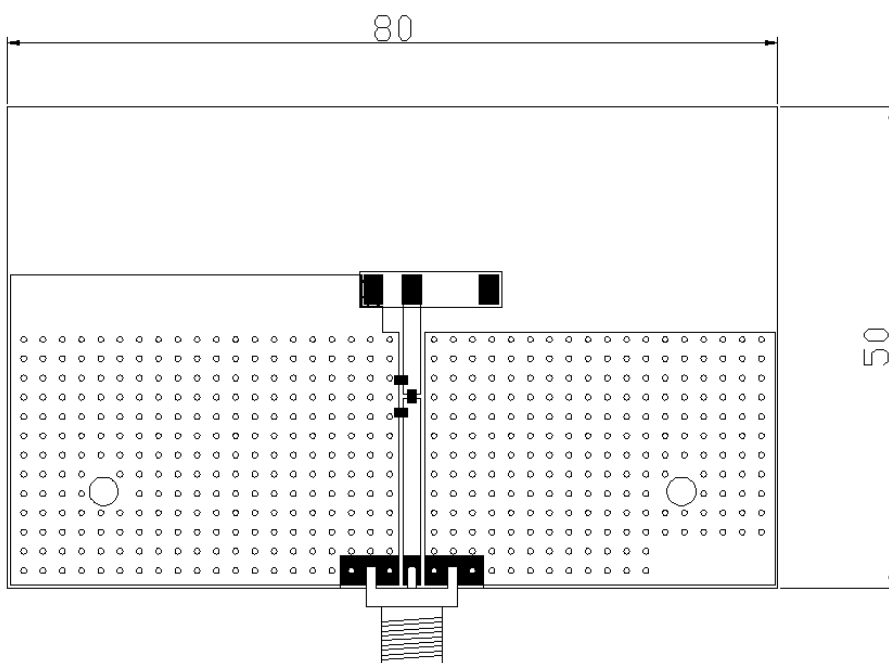
No	Item	Spec.	Remark
1	Dimensions (LxWxH)	14.0x3.0x3.0 mm ³	
2	Unit Weight	Typ. 0.2g	
3	Operating Temperature	-40 ~ +125	

1.3 Appearance (Dimension)

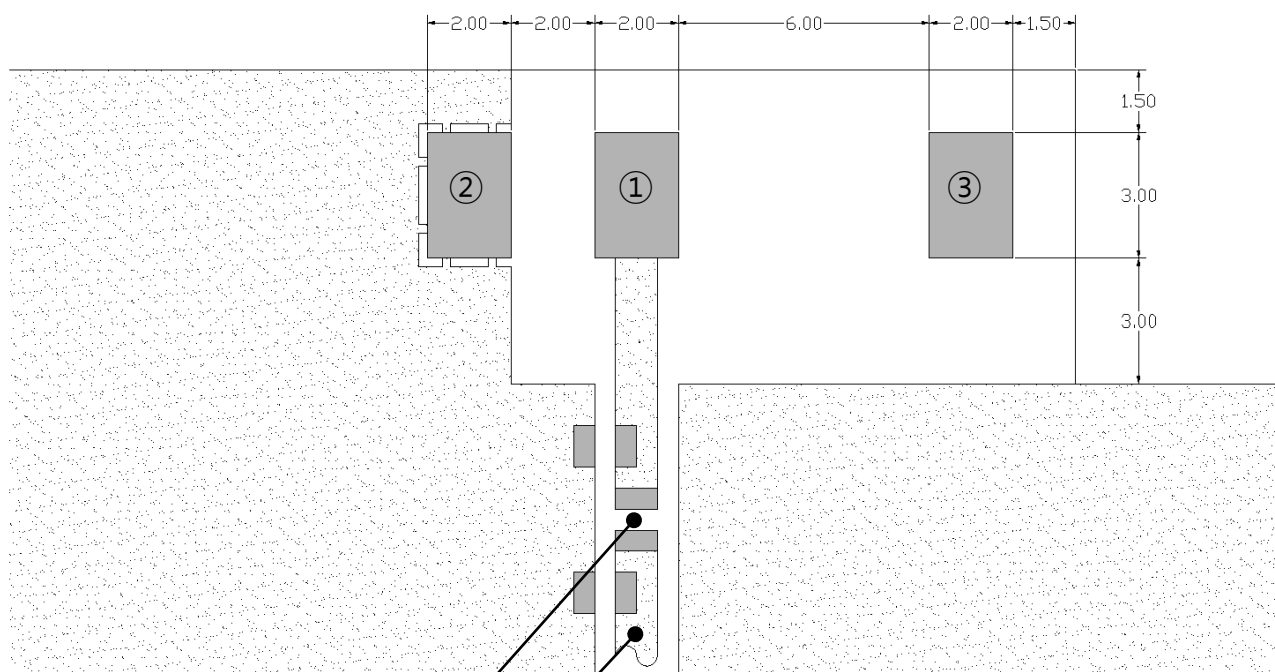


2. PCB Design for Test

2.1 Evaluation Board Dimension



2.2 PCB Design Guide



Matching Component

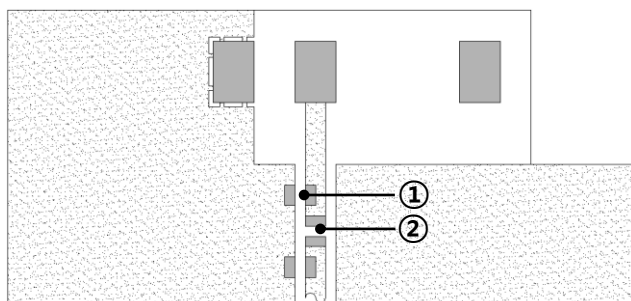
50 Ohm Feeding Line

No	Pin Assignment
①	Feeding
②	GND
③	Dummy

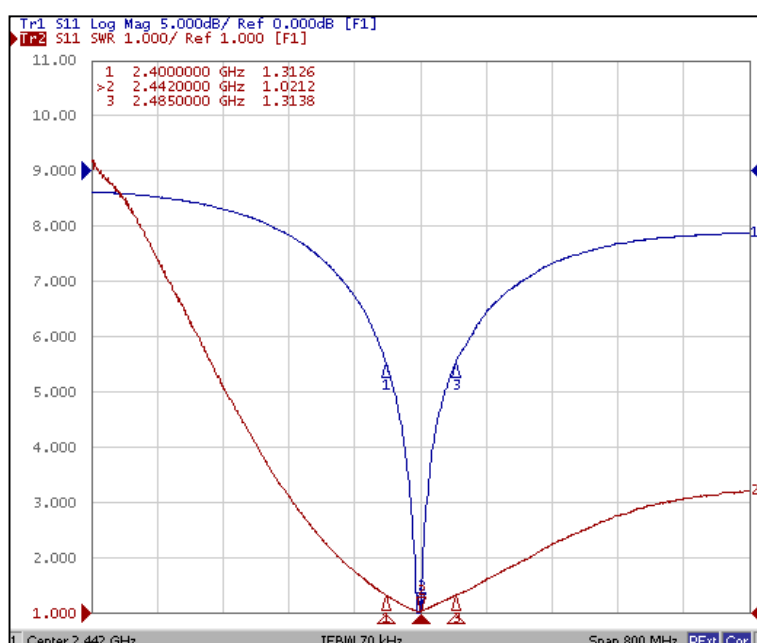
[unit : mm]

3. Measurement Result

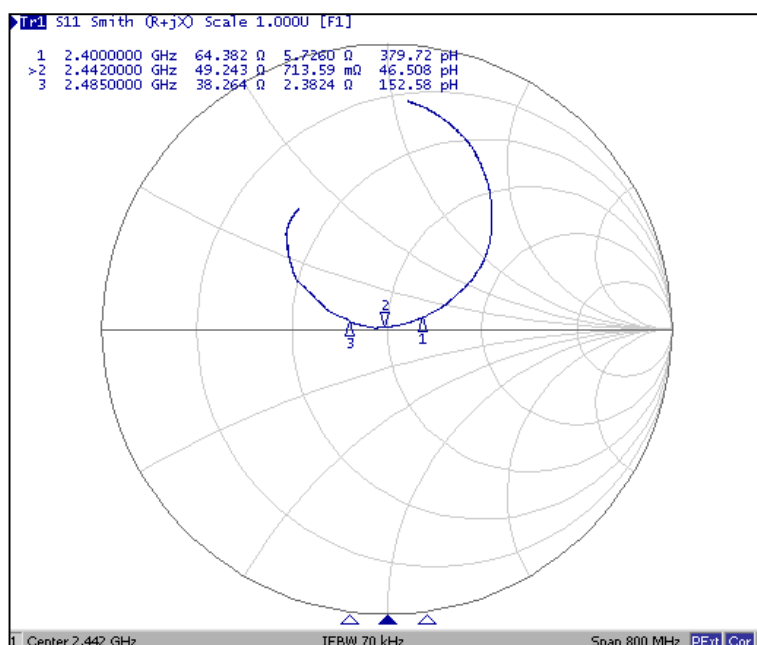
3.1 Typical Measurement Result (VSWR/RL, Smithchart)



No	Matching Value
①	2.2nH
②	2.2nH



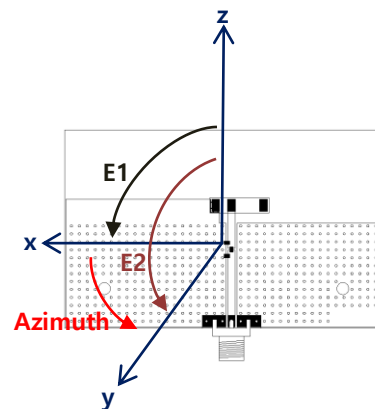
VSWR



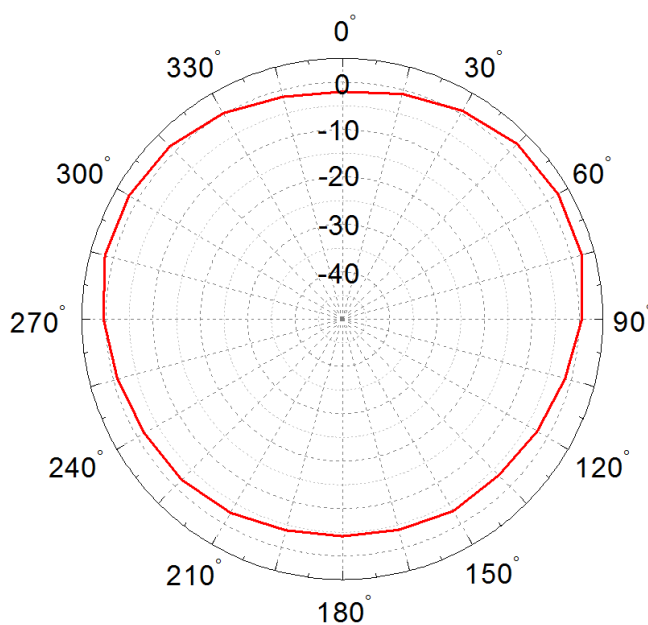
Smith Chart

3.2 Typical Measurement Result (Gain, Radiation Pattern)

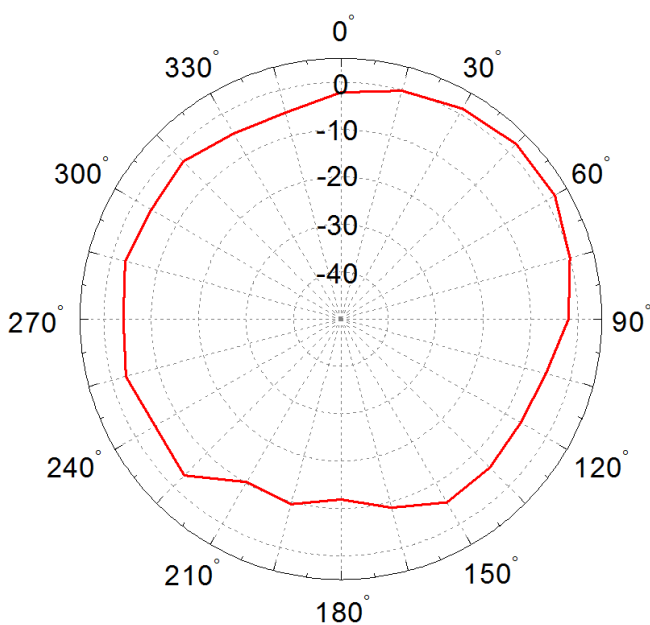
Freq. [MHz]	Efficiency (%)	Avg. Gain (dBi)	Peak Gain (dBi)
2400	61.7	-2.1	2.0
2442	75.3	-1.2	3.0
2485	85.4	-0.7	3.5



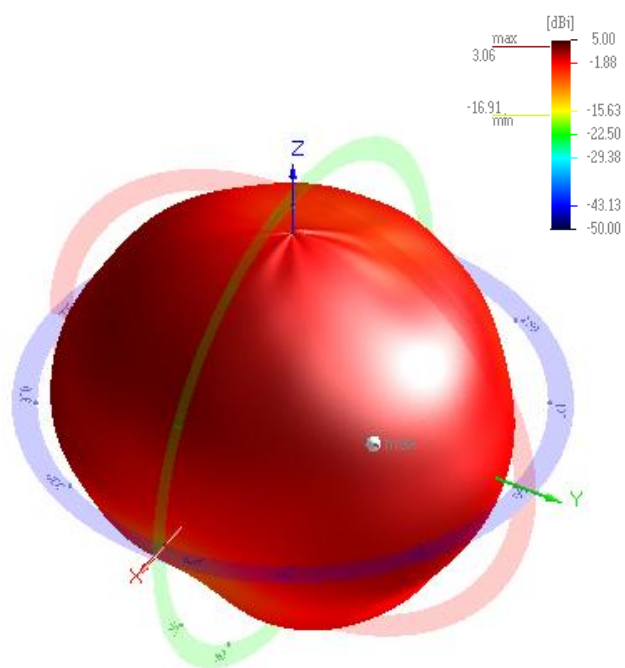
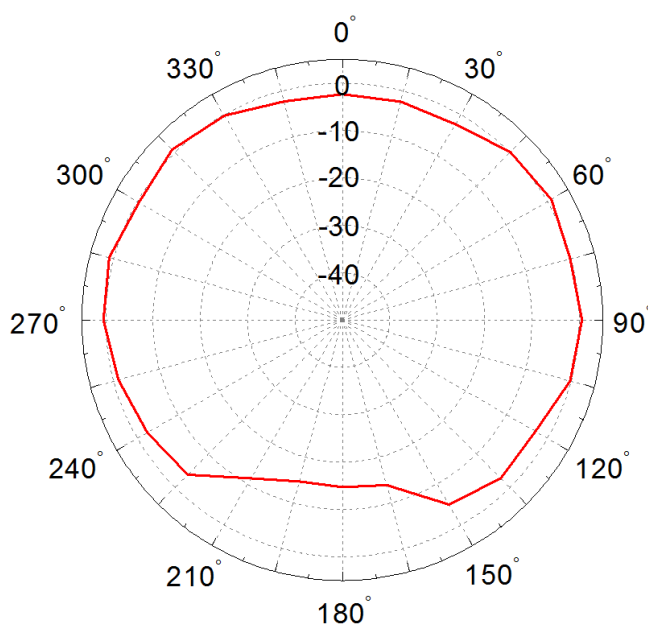
H-Cut ($\theta=90^\circ$)



E1-Cut ($\varphi=0^\circ$)

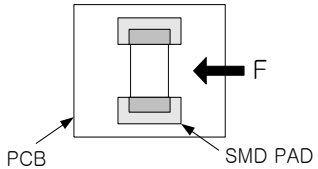


E2-Cut ($\varphi=90^\circ$)



3D radiation pattern @2442MHZ

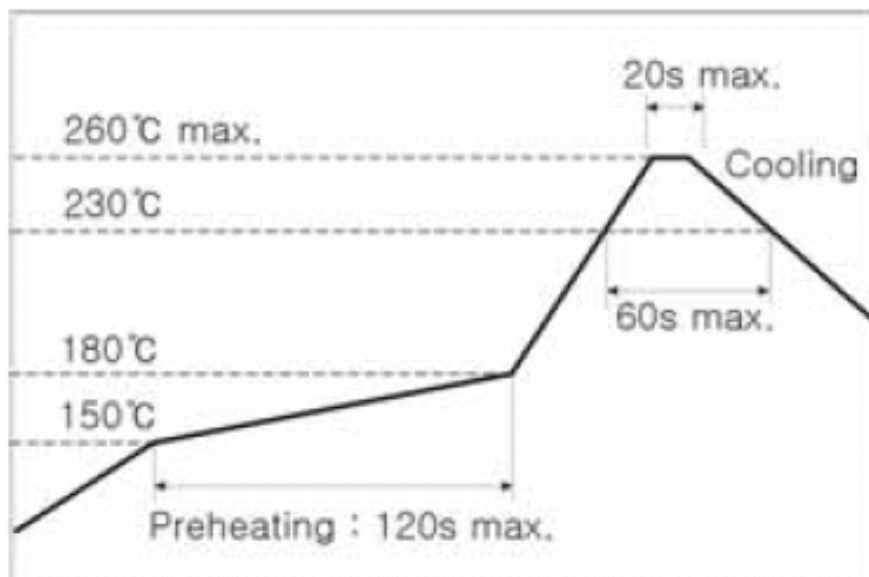
4. Reliability

No	Item	Test Condition	Test Requirements
1	Adhesive Strength of Termination	1. Applied force on SMT chip till detached point from PCB. 	1. No mechanical damage by applied force 2. Strength (F) > 5 kgf
2	Thermal Shock (Cycle)	1. Step 1 : $-55 \pm 3^{\circ}\text{C}$, 30 min Step 2 : $+85 \pm 3^{\circ}\text{C}$, 30 min 2. Number of cycle : 1000	1. No visual damage 2. Within electric spec (VSWR)
3	High Temperature Resistance	1. Temperature : $+125 \pm 5^{\circ}\text{C}$ 2. Time : 1000 ± 24 hrs	1. No visual damage 2. Within electric spec (VSWR)
4	Low Temperature Resistance	1. Temperature : $-55 \pm 5^{\circ}\text{C}$ 2. Time : 1000 ± 24 hrs	1. No visual damage 2. Within electric spec (VSWR)
5	Humidity	1. Humidity : 85 % RH Temperature : $+85 \pm 3^{\circ}\text{C}$ 2. Time : 1000 ± 24 hrs	1. No visual damage 2. Within electric spec (VSWR)

5. Cautions (Recommendations)

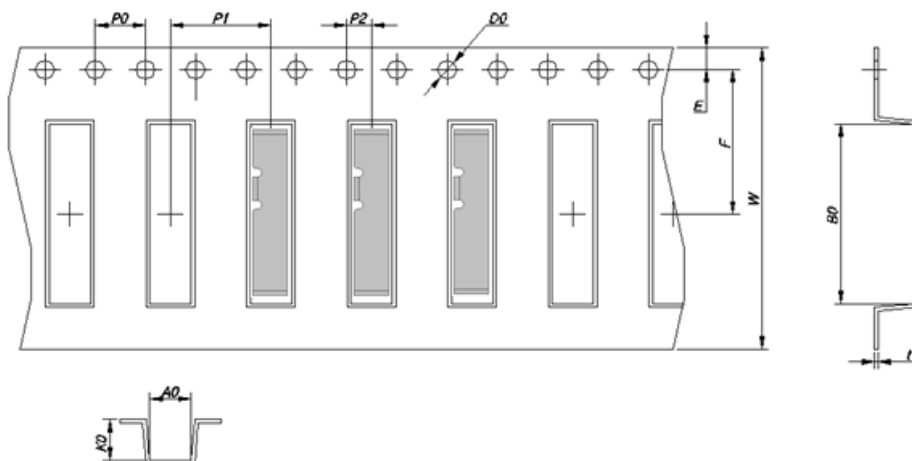
- ✓ Storage environment of parts must be at ambient temperatures of 5 to 40°C and maximum 60%RH humidity
- ✓ The parts should be used within 6 months from the time of delivery. If stored for over 6 months, check for solder ability before use.

6. Soldering Reflow Profile



7. Packaging

7.1 Carrier Tape Dimension



Item	Spec.	Item	Spec.	Item	Spec.
A0	3.30 ±0.10	P0	4.00 ±0.10	E	1.75 ±0.10
B0	14.30 ±0.10	P1	8.00 ±0.10	F	11.50 ±0.10
K0	3.25 ±0.10	P2	2.00 ±0.10	W	24.00 ±0.30
D0	1.50 -0.00/+0.10	10*P0	10*P0 ±0.20	t	0.30 ±0.10

7.2 Packaging Quantity

Item	Quantity	Dimension
Reel	2,000ea	Φ13" * 24mm
Inner Box	4,000ea (2 reel)	350 * 340 * 55 (mm ³)
Outer Box	12,000ea (3 Inner Box)	390 * 390 * 280 (mm ³)

7.3 Packaging Label

AMOTECH Co., Ltd.

5BL-1Lot, 617, Namchon-Dong, Namdong-Gu, Incheon, Korea

Dielectric Chip Antenna

P/N : AMAPST001

Lot No :

Quantity : - pcs Date : 2016 / 02 / 02