

Document	Datasheet
Type	Dielectric Chip Antenna
Application	Dual WLAN
Part No.	AMAN802012ST02
Revision	Preliminary

Preliminary

DATASHEET

Application

Dual WLAN

Features

Monopole structure

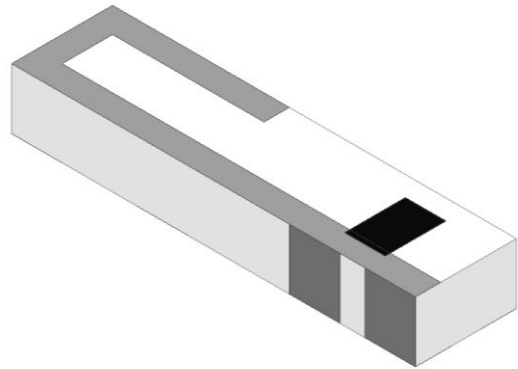
Size (8.0*2.0*1.2mm³)

Performance optimizing

with tuning the conductive pattern on the ceramic body

SMT available under Pb-free condition

RoHS compliant



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

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	2024. 11. 06		Preliminary Published	

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1. Specifications

1.1 Electrical Specifications

No	Item	Spec		Remark
1	Frequency Range [MHz]	2400 ~ 2485 / 5150 ~ 5850		
2	VSWR	Max 3.0 : 1		
3	Avg. Gain [dBi]	2400 MHz	typ. -5.0	Measured Data (on the SET)
		2442 MHz		
		2485 MHz		
		5150 MHz	typ. -4.0	
		5500 MHz		
		5850 MHz		
4	Peak. Gain [dBi]	2400 MHz	typ. -0.5	
		2442 MHz		
		2485 MHz		
		5150 MHz	typ. 1.0	
		5500 MHz		
		5850 MHz		
5	Polarization	Linear		
6	Impedance [Ω]	Nominal 50		

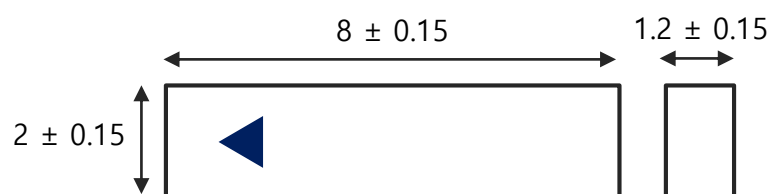
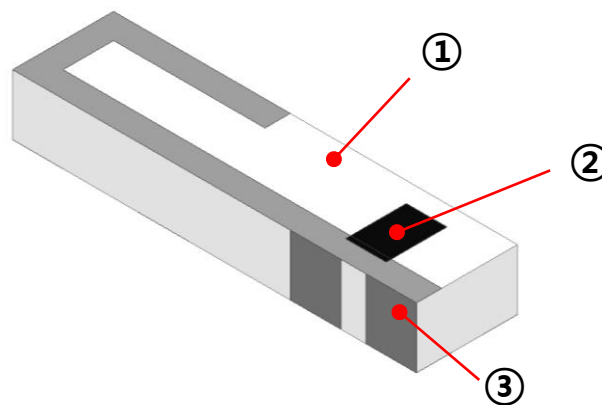
- ✓ The results are measured in the customer's SET
- ✓ See Page 6. for more detail gain parameter

1.2 Mechanical Specifications

No	Item	Spec.	Remark
1	Dimensions (L * W * H)	8.0 * 2.0 * 1.2 mm ³	
2	Unit Weight	Typ. 65 mg	
3	Operating Temperature	-40 ~ +125 °C	

1.3 Appearance & Material

No	Item	Function	Material
①	Antenna body		Ceramic
②	Marking	Feeding Index	Ink
③	Electrode	Radiation Element	Ag

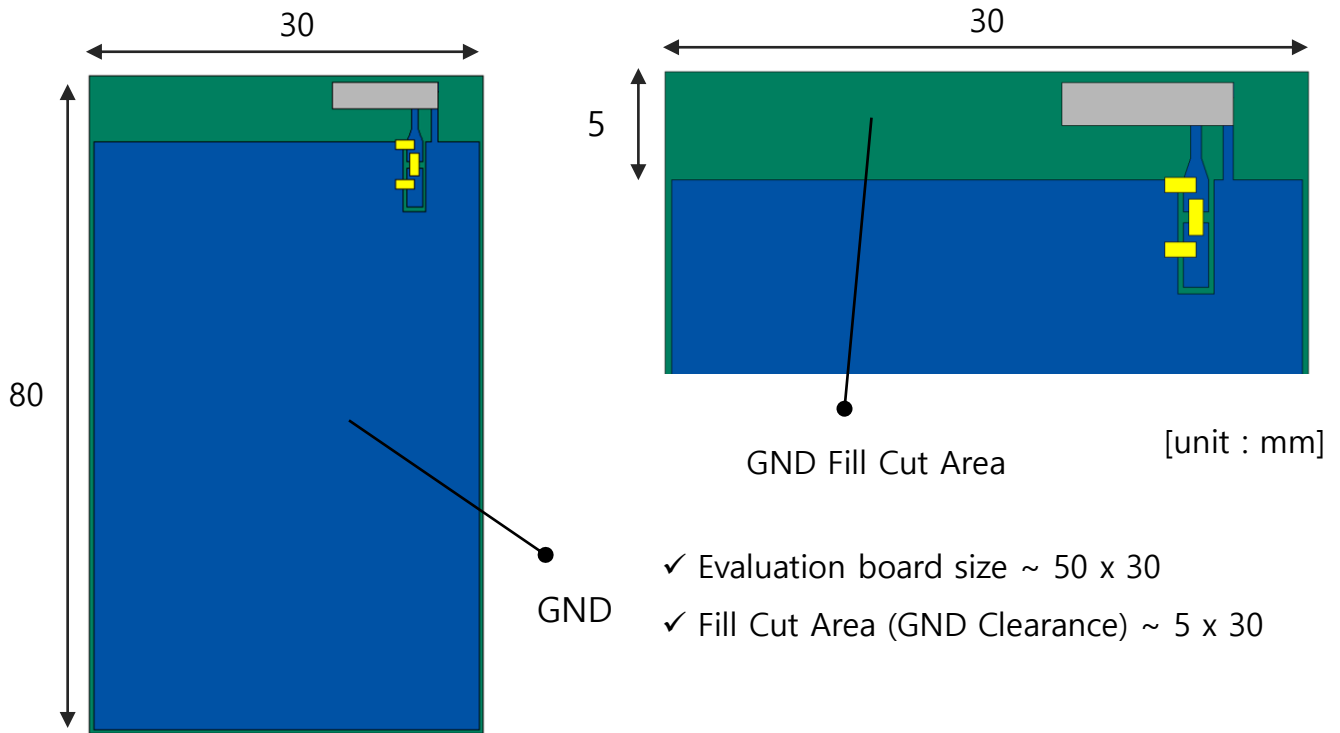


Antenna Top & Side

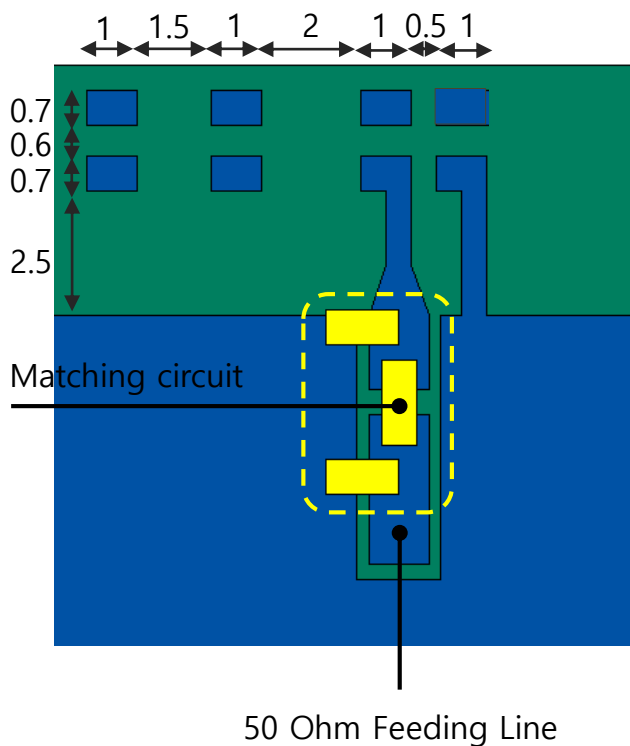
[unit : mm]

2. PCB Design for Test

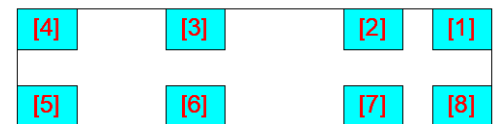
2.1 Evaluation Board Dimension



2.2 PCB Design Guide



Antenna top

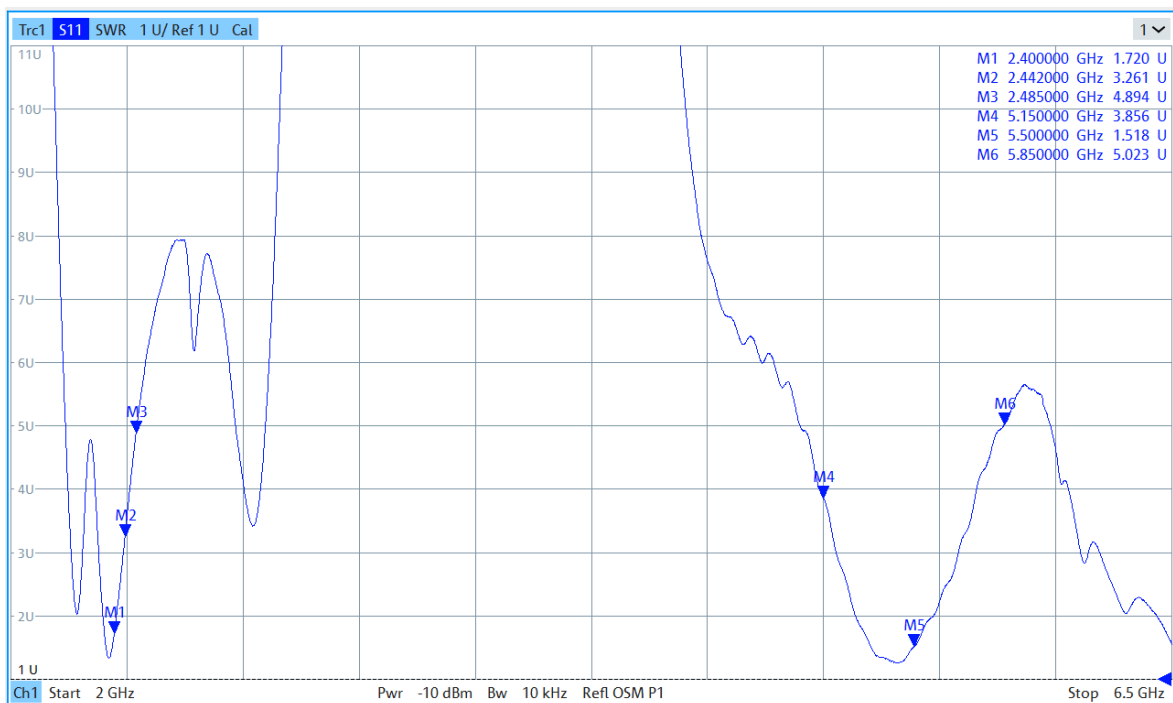


Antenna bottom

No.	Pin assignment
[1]	Connected open stub
[2]	N/C
[3]	N/C
[4]	N/C
[5]	N/C
[6]	N/C
[7]	Feeding
[8]	GND

3. Measurement Result

3.1 Typical Measurement Result [VSWR]

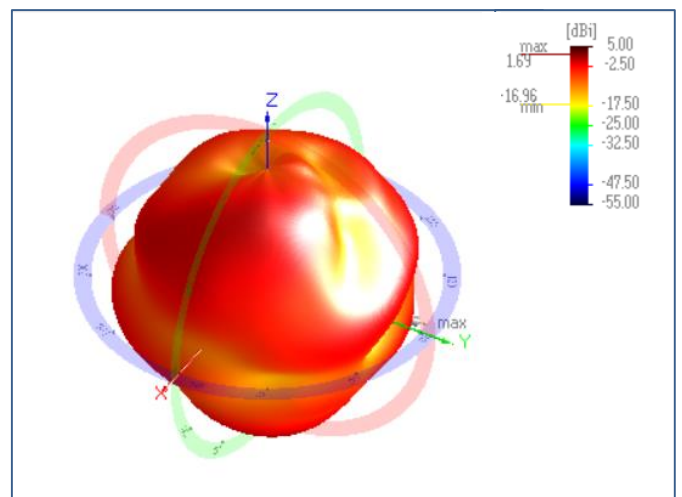
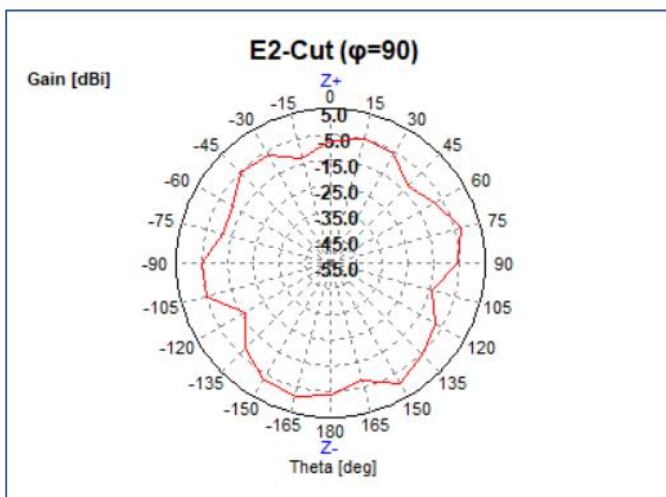
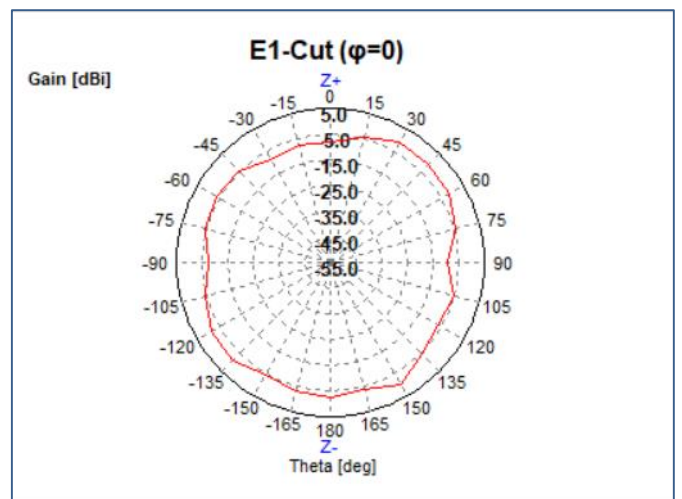
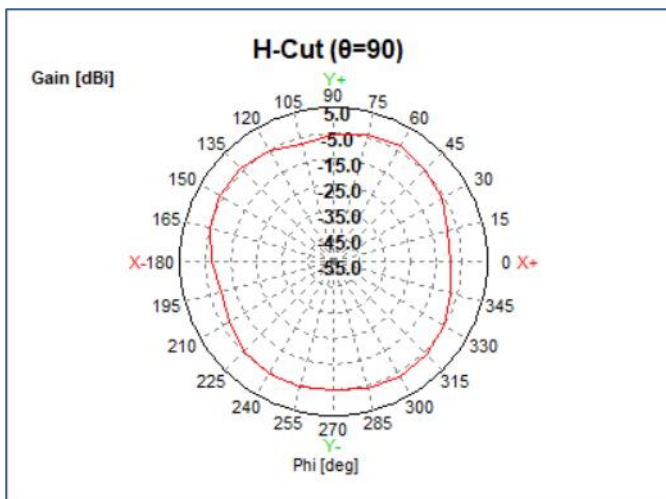


Measured VSWR of AMAN802012ST02

✓ The results are measured in the customer's SET

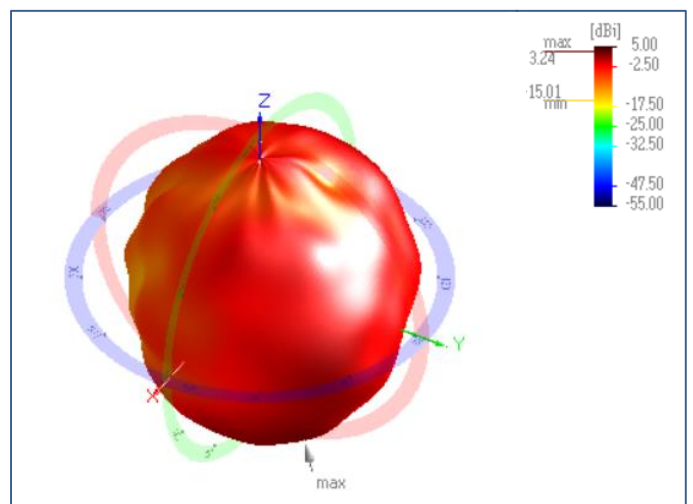
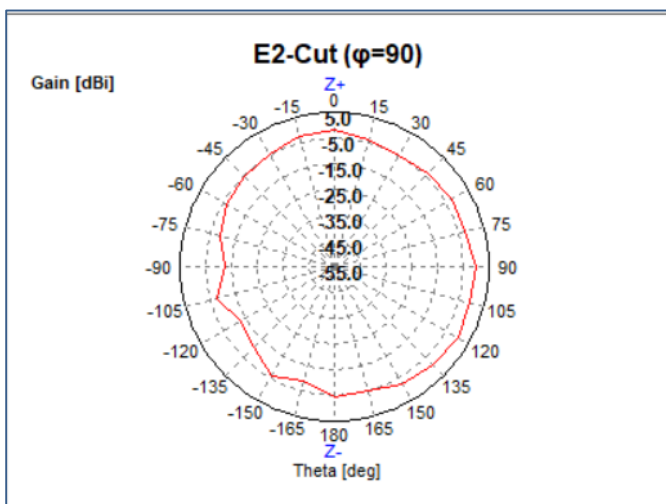
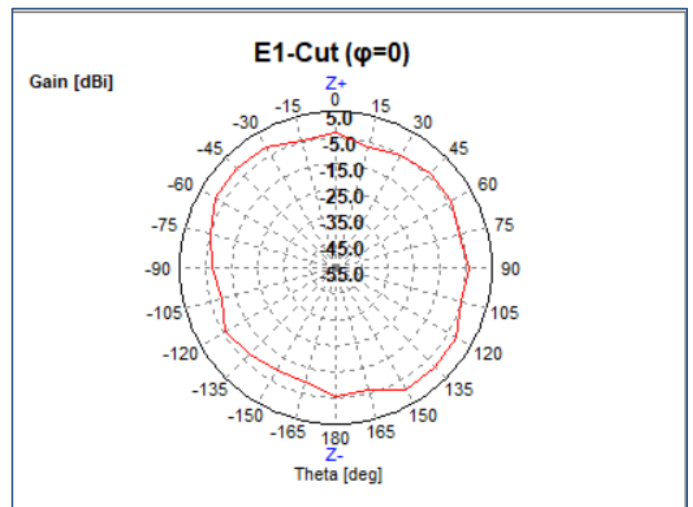
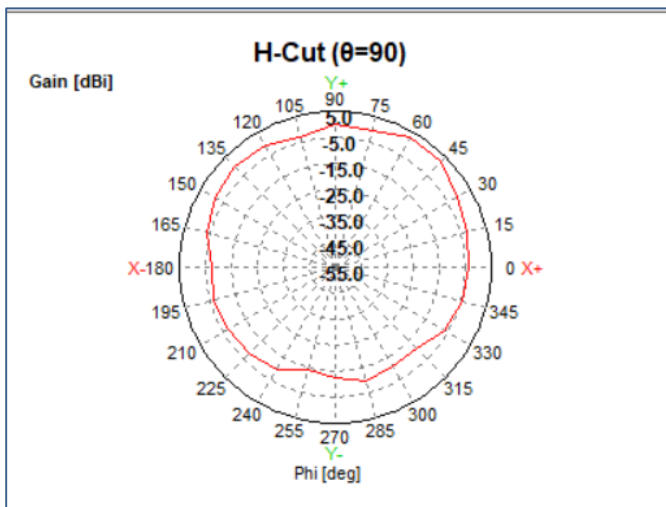
3.2 Typical Measurement Result (Gain, Radiation Pattern)

Frequency [MHz]	Efficiency [%]	Avg. Gain [dBi]	Peak Gain [dBi]
2400	40.77	-3.90	1.84
2442	27.49	-5.61	-0.56
2485	22.82	-6.42	-1.30



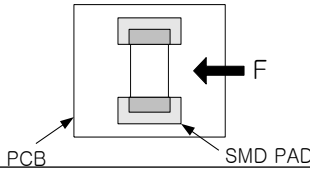
2D / 3D radiation pattern @2442MHz

Frequency [MHz]	Efficiency [%]	Avg. Gain [dBi]	Peak Gain [dBi]
5150	44.00	-3.57	1.43
5500	46.76	-3.30	1.66
5850	27.89	-5.54	-0.10



2D / 3D radiation pattern @5500MHz

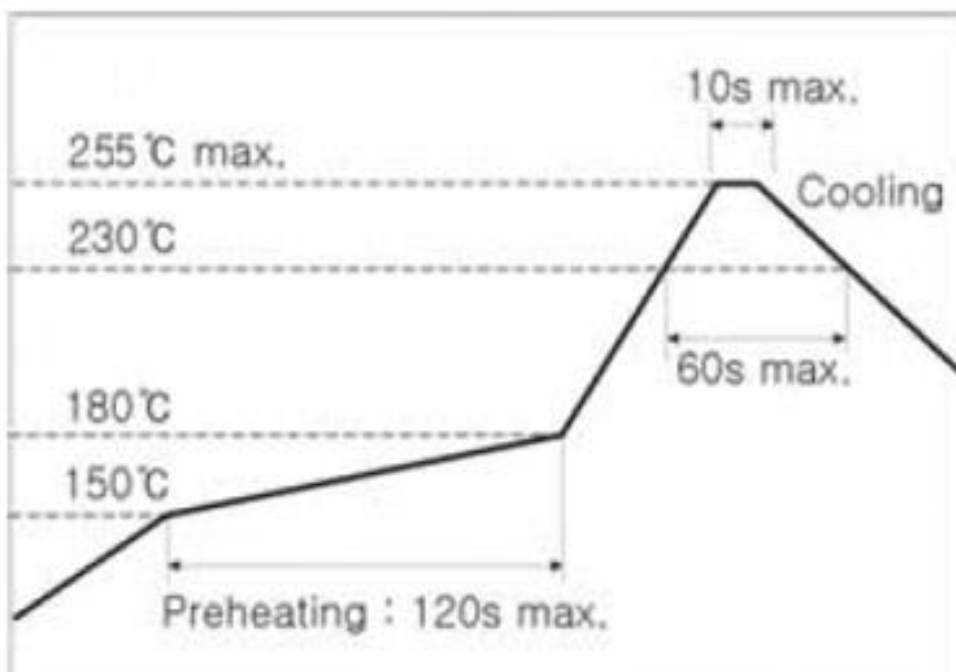
4. Reliability

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 due to side pushing force F 2. Strength (F) ≤ 5 kgf
2	Thermal Shock (Cycle)	1. Step 1 : -40 ± 3°C, 30 min Step 2 : +85 ± 3°C, 30 min 2. Number of cycle : 1000	1. No visual damage 2. Within electric spec (VSWR)
3	High Temperature Resistance	1. Temperature : +125 ± 5°C 2. Time : 96 ± 24 hrs	1. No visual damage 2. Within electric spec (VSWR)
4	Low Temperature Resistance	1. Temperature : -40 ± 5°C 2. Time : 96 ± 24 hrs	1. No visual damage 2. Within electric spec (VSWR)
5	Humidity	1. Humidity : 85 % RH Temperature : +85 ± 3°C 2. Time : 120 ± 24 hrs	1. No visual damage 2. Within electric spec (VSWR)

5. Cautions (Recommendations)

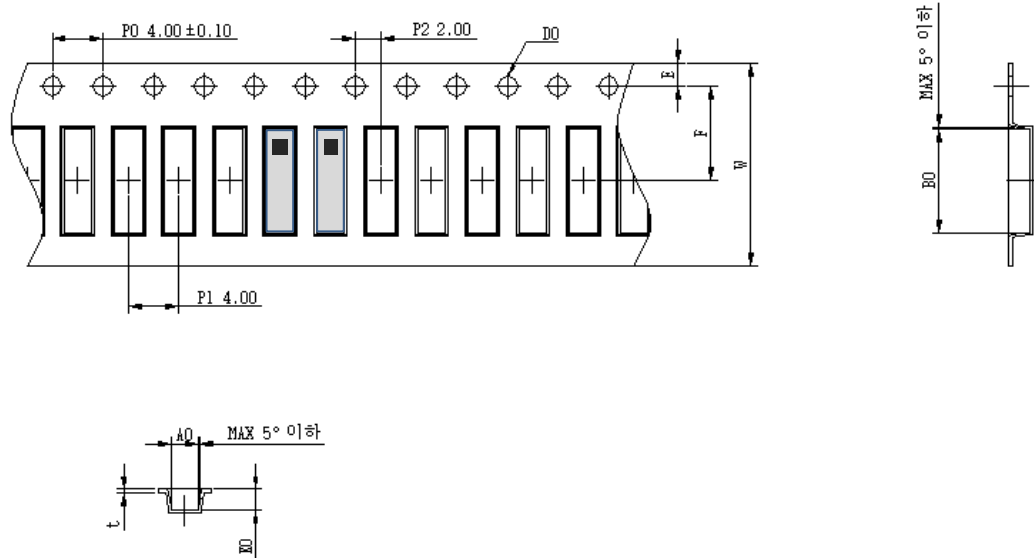
- ✓ Storage environment of parts must be at ambient temperatures of 5 to 40°C and maximum 60%RH humidity
- ✓ The parts should be used within 6 months from the time of delivery. If stored for over 6 months, check for solder ability before use.

6. Soldering Reflow Profile



7. Packaging

7.1 Carrier Tape Dimension



Item	Spec.	Item	Spec.	Item	Spec.
A0	2.20 ± 0.10	P0	4.00 ± 0.10	E	1.75 ± 0.10
B0	8.20 ± 0.10	P1	4.00 ± 0.10	F	7.50 ± 0.10
K0	1.65 ± 0.10	P2	2.00 ± 0.10	W	16.00 ± 0.30
D0	1.55 ± 0.05	-	-	t	0.30 ± 0.05

7.2 Packaging Quantity

Item	Quantity	Dimension
Reel	4,000 ea	Φ13" * 24mm
Inner	4,000 ea (1 Reel)	350 * 350 * 90 (mm3)
Outer Box	12,000 ea (3 Inner Box)	390 * 390 * 280 (mm3)

7.3 Packaging Label

AMOTECH Co., Ltd.

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

Dielectric Chip Antenna

P/N : AMAN802012ST02

Lot No :

Quantity : 2,000 pcs Date : YYYY/MM/DD