

Document	Datasheet
Type	Dielectric Chip Antenna
Application	1575.42 MHz
Part No.	AMAN1003030ST01
Revision	0.0

# DATASHEET

## Application

GPS (1575.42 MHz)

## Features

PIFA Structure

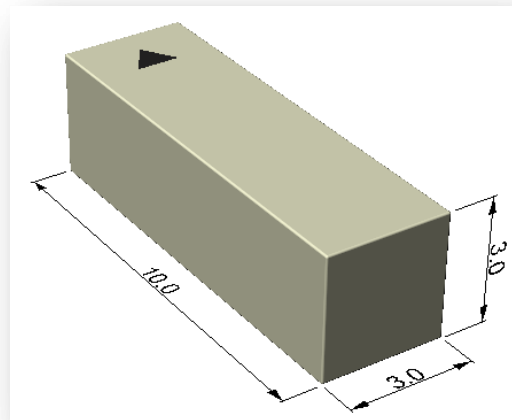
Size (10.0\*3.0\*3.0mm<sup>3</sup>)

Performance Optimizing

with tuning the conductive pattern on the ceramic body

SMT Available under Pb-free Condition

RoHS Compliant



※ It needs tuning process for customer's device.

# 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	'09.04.09		New Published	

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## 1. Specifications

### 1.1 Electrical Specifications

No	Item	Spec.	Remark
1	Frequency Range [MHz]	1575.42	
2	VSWR	Max 3.0:1	
3	Peak Gain [dBi]	typ. 3.3	
4	Total Avg. Gain [dBi]	typ. -1.1	
5	Efficiency [%]	typ. 79.9	
6	Polarization	Linear	
7	Impedance [ $\Omega$ ]	Nominal 50	

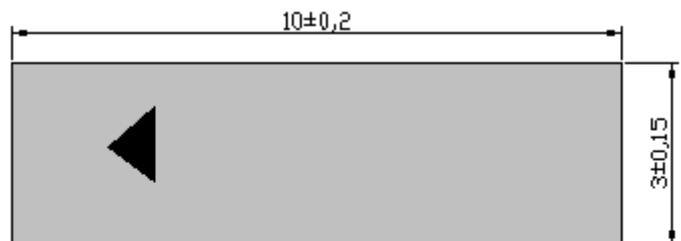
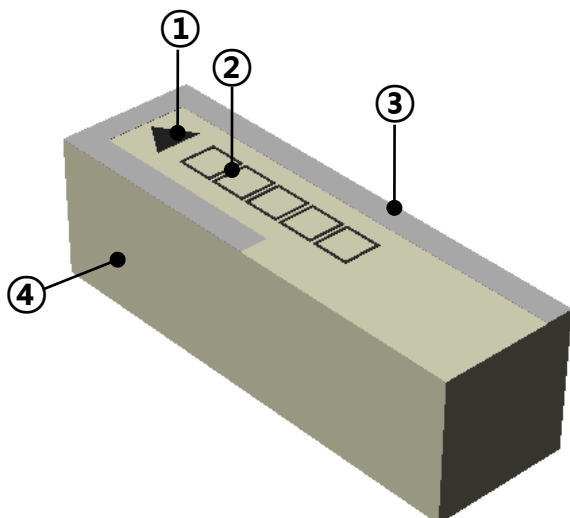
- ✓ The results are measured on the 80x40mm<sup>2</sup> evaluation board(EVB).
- ✓ See Page 6. for more detail gain parameter

### 1.2 Mechanical Specifications

No	Item	Spec.	Remark
1	Dimensions (LxWxH)	10.0x3.0x3.0 mm <sup>3</sup>	
2	Unit Weight	typ. 150 mg	
3	Operating Temperature	-35 ~ +85 °C	

### 1.3 Appearance & Material

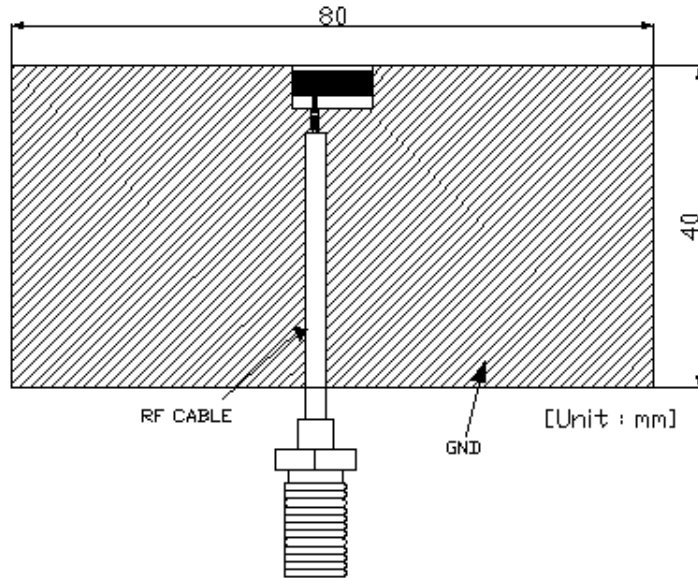
No	Item	Function	Material
1	Marking	Feeding Index	Ink
2	Marking	P/N, Year, Month, Day	Ink
3	Electrode	Radiation Element	Ag
4	Ceramic Body	-	Ceramic



[unit : mm]

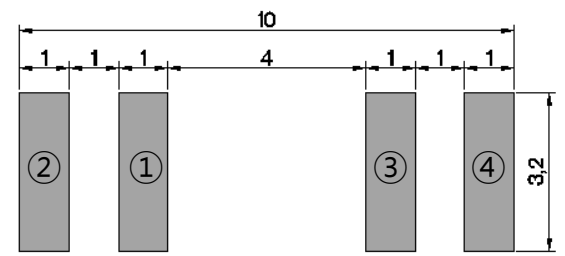
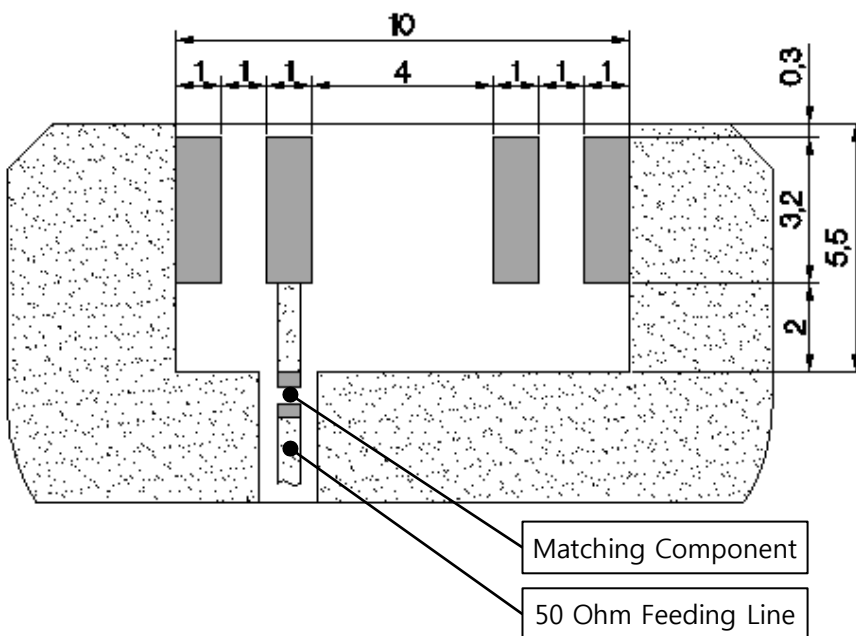
## 2. PCB Design for Test

### 2.1 Evaluation Board Dimension



- ✓ Evaluation board size ~ 80x40
- ✓ Fill Cut Area (GND Clearance) ~ 10x5.5

### 2.2 PCB Design Guide



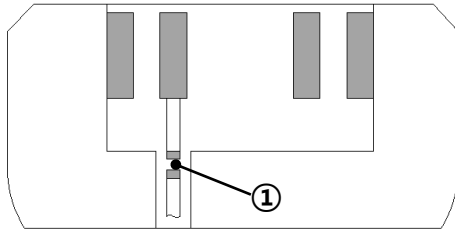
[PCB Solder Land]

No	Pin Assignment
①	Feeding
②	GND
③	Dummy
④	GND

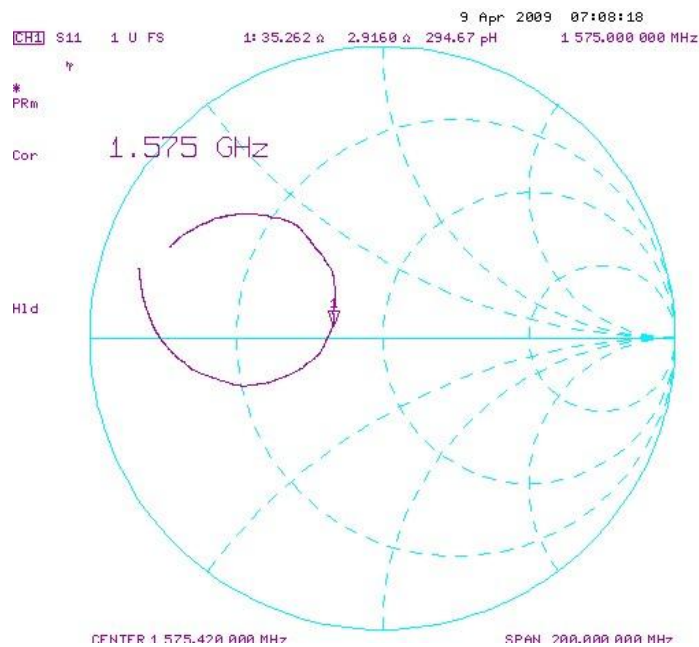
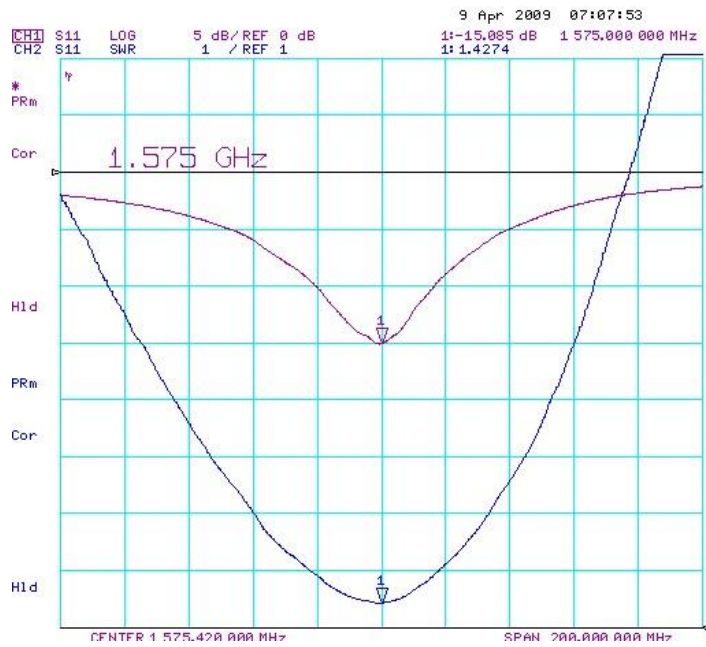
[unit : mm]

### 3. Measurement Result

#### 3.1 Typical Measurement Result (VSWR/RL, Smithchart)



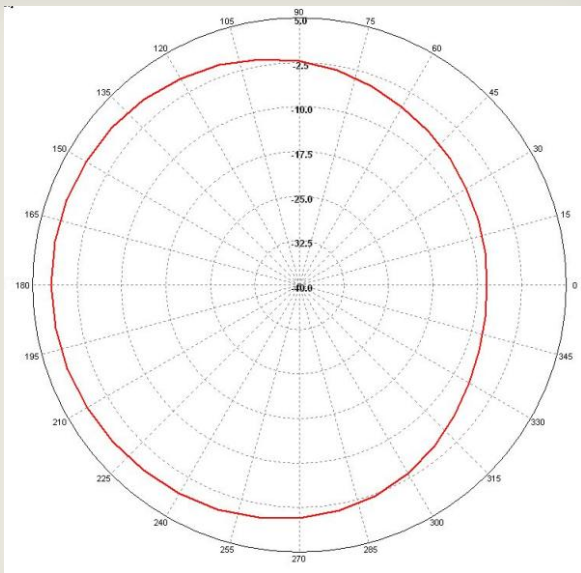
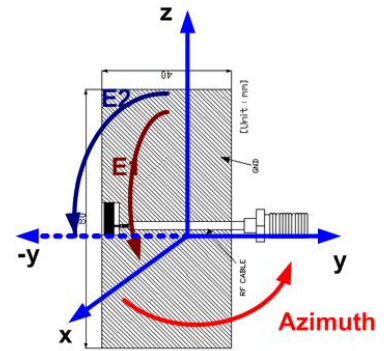
No	Matching Value
①	100 pF



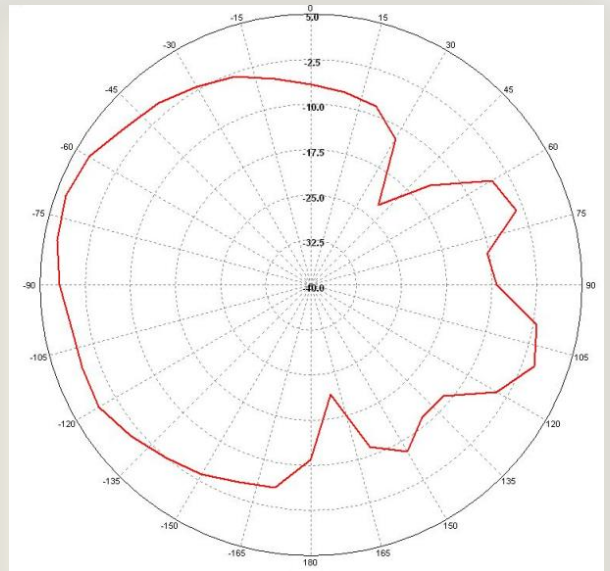
✓ The results are measured on the 80x40mm<sup>2</sup> evaluation board(EVB).

### 3.2 Typical Measurement Result (Gain, Radiation Pattern)

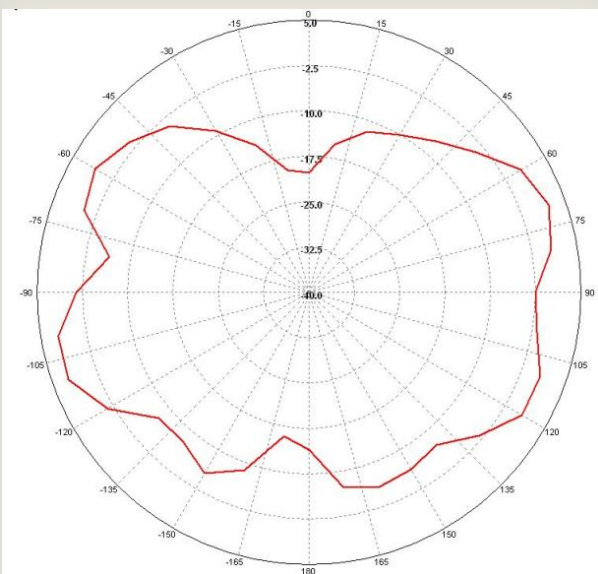
	Peak Gain (dBi)	Avg. Gain (dBi)	Total Avg. Gain (dBi)	Efficiency (%)
Azimuth	1.83	-1.16	-1.0	80
Elevation 1	3.32	-2.35		
Elevation 2	3.36	-1.57		



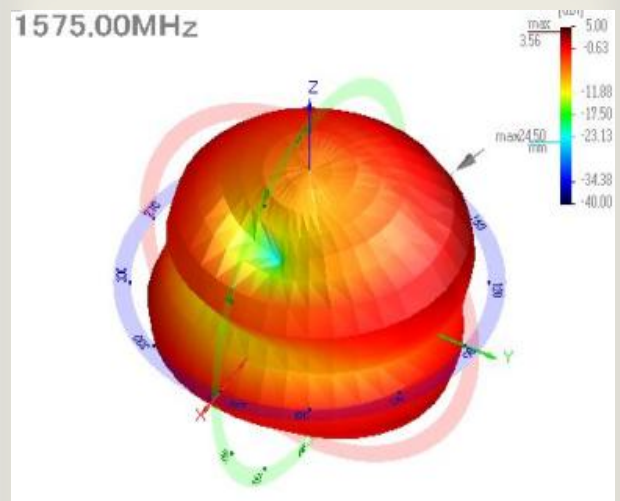
[Azimuth plane @1.575GHz ]



[Elevation1 plane @1.575GHz ]

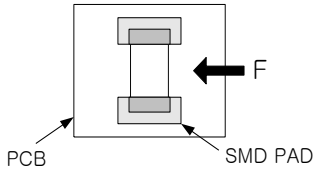


[Elevation2 plane @1.575GHz ]

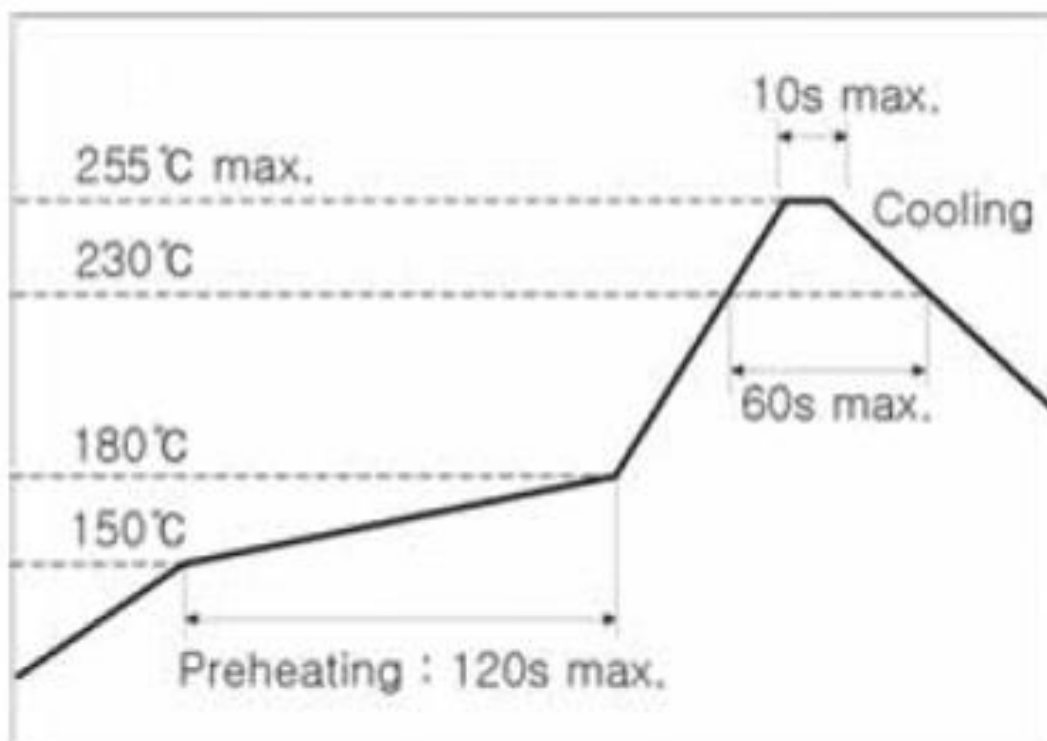


[3D Radiation Pattern]

#### 4. Reliability

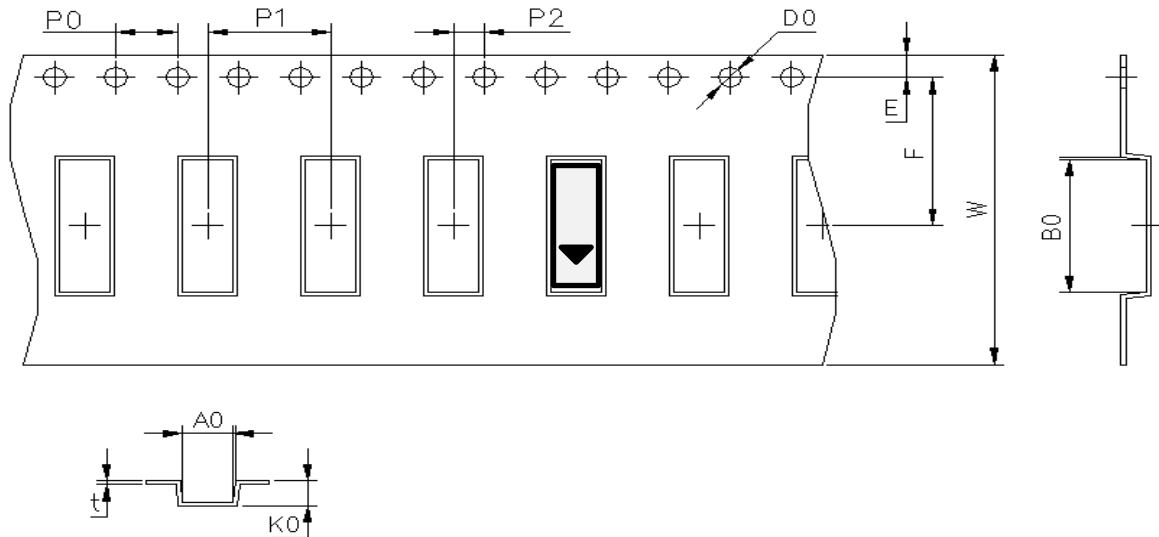
No	Item	Test Condition	Test Requirements
1	Adhesive Strength of Termination	1. Applied force on SMT chip till detached point from PCB. 	1. No mechanical damage by forces applied on the right. 2. Strength (F) > 7 kgf
2	Thermal Shock (Cycle)	1. Step 1 : $-40 \pm 3^\circ\text{C}$ , 30 min Step 2 : $+125 \pm 3^\circ\text{C}$ , 30 min 2. Number of cycle : 30	1. No visual damage 2. Within electric spec (VSWR)
3	High Temperature Resistance	1. Temperature : $+125 \pm 5^\circ\text{C}$ 2. Time : $1000 \pm 24$ hrs	1. No visual damage 2. Within electric spec (VSWR)
4	Low Temperature Resistance	1. Temperature : $-40 \pm 5^\circ\text{C}$ 2. Time : $1000 \pm 24$ 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 : $1000 \pm 24$ hrs	1. No visual damage 2. Within electric spec (VSWR)

#### 5. Soldering Reflow Profile



## 6. Packaging

### 6.1 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	10.30 ±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	1.55 ±0.05	-	-	t	0.30 ±0.05

### 6.2 Packaging Quantity

Item	Quantity	Dimension
Reel	2,000 ea	Φ13" * 24mm
Inner	4,000 ea (2 Reel)	350 * 350 * 90 (mm3)
Outer Box	12,000 ea (3 Inner Box)	390 * 390 * 280 (mm3)

### 6.3 Packaging Label

**AMOTECH Co., Ltd.**

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

**Dielectric Chip Antenna**

P/N : AMAN1003030ST01

Lot No :

Quantity : 2,000 pcs    Date : 2009/04/09