

AT8010 Series

Multilayer Chip Antenna

Features

- ❖ Monolithic SMD with small, low-profile and light-weight type.
- ❖ Wide bandwidth
- ❖ RoHS compliant



Applications

- ❖ 2.4GHz WLAN, Home RF, Bluetooth, Modules, etc.

Specifications

Part Number	Operating Frequency (MHz)	Peak Gain (dBi typ.)	Average Gain (dBi typ.)	VSWR	Impedance
AT8010-T2R9HAA_	2400~2500	2.5 (XZ-V)	0.5 (XZ-V)	2 max.	50 Ω

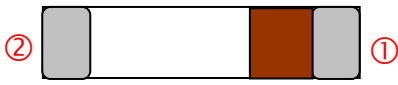
Q'ty/Reel (pcs)	: 1,000 pcs
Operating Temperature Range	: -40 ~ +85 °C
Storage Temperature Range	: +5 ~ +35 °C, Humidity 45~75%RH
Storage Period	: 12 months max.
Power Capacity	: 2W max.

Part Number

AT 8010 - T 2R9 HAA □
 ① ② ③ ④ ⑤ ⑥

① Type	AT : Antenna	② Dimensions (L × W)	8.0 × 1.0 mm
③ Material Code	T	④ Initial center frequency	2R9=2900MHz
⑤ Specification Code	HAA	⑥ Packaging	T: Tape & Reel B: Bulk

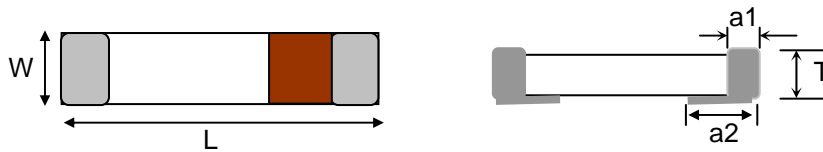
Terminal Configuration



No.	Terminal Name	No.	Terminal Name
①	Feeding Point	②	NC

Dimensions and Recommended PC Board Pattern

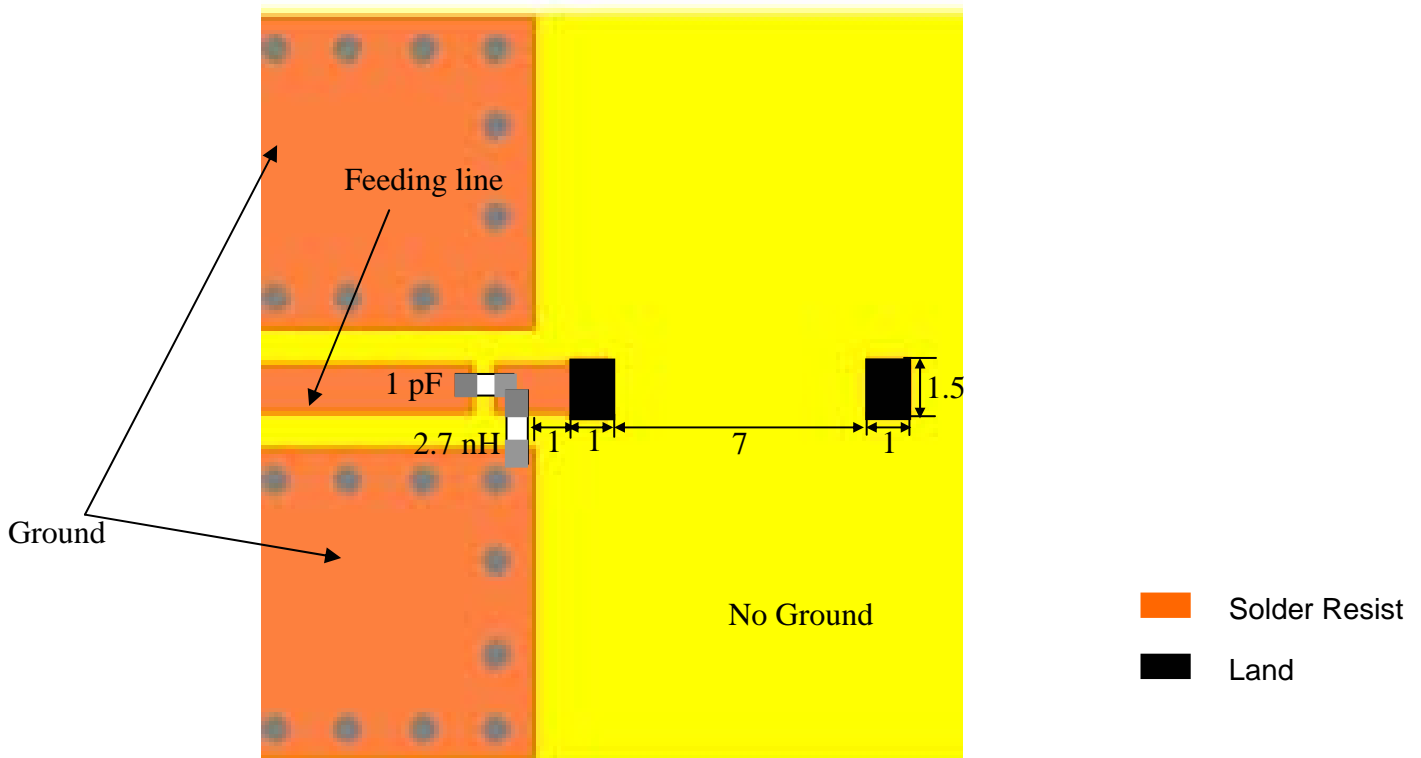
Unit : mm



Mark	L	W	T	a1	a2
Dimensions	8.0±0.2	1.0±0.2	1.0±0.2	0.5±0.2	1.0±0.2

The Recommended PC Board layout

❖ With Matching Circuits (Unit in mm)

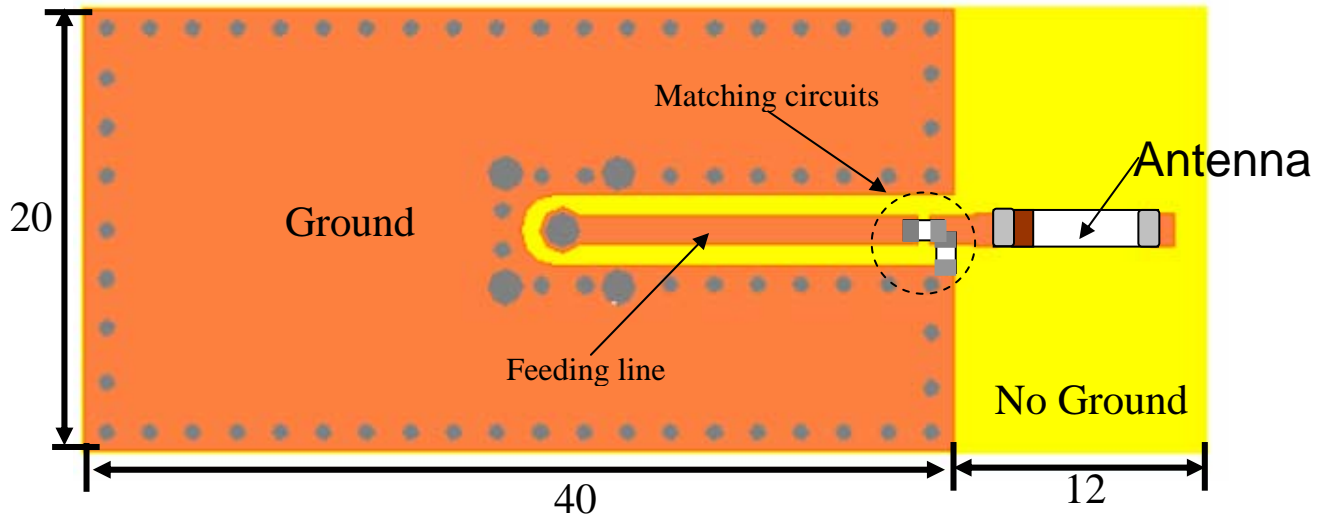


(Matching circuit and component values will be different, depending on PCB layout)

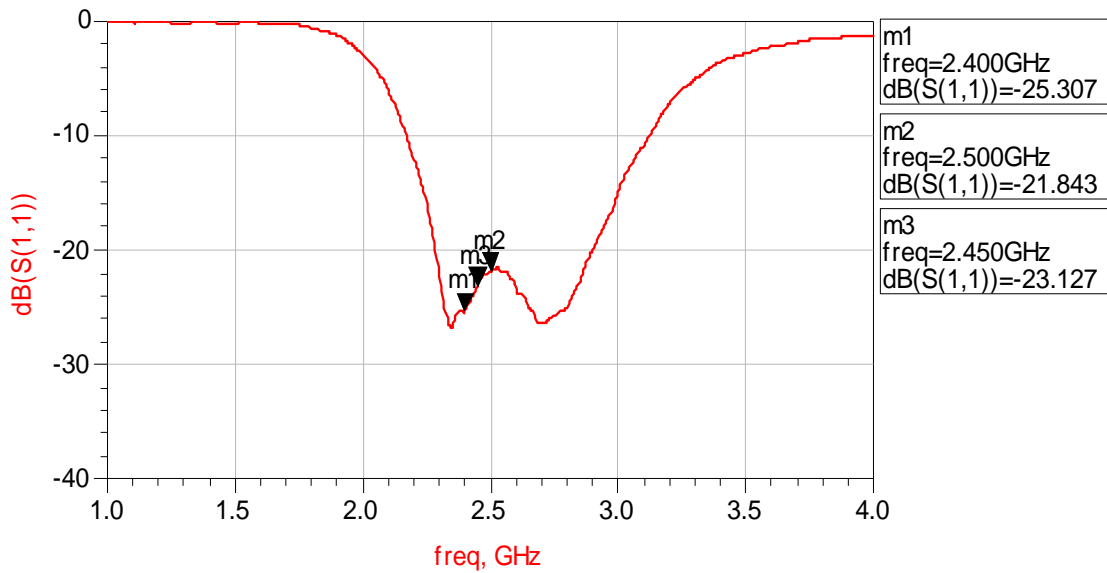
*Line width should be designed to match 50Ω characteristic impedance, depending on PCB material and thickness.

Typical Electrical Characteristics (T=25°C)

❖ Test Board (Unit in mm)

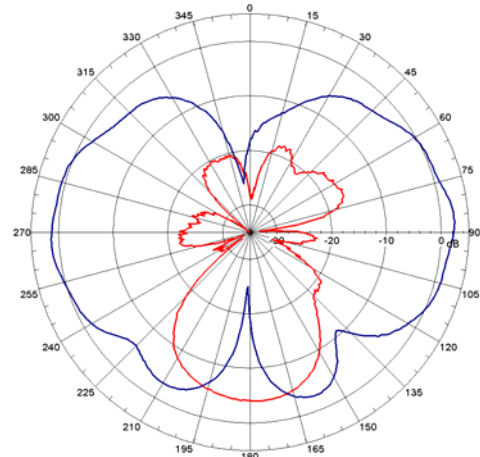
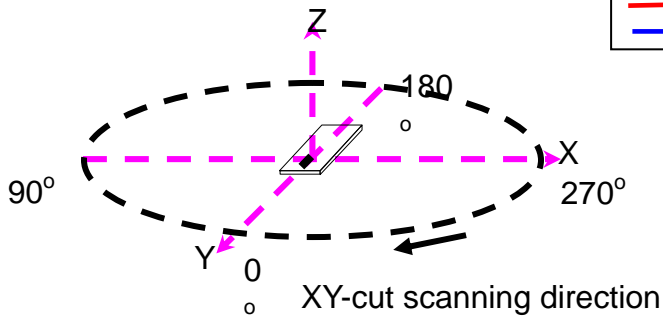


❖ Return Loss / With Matching Circuits

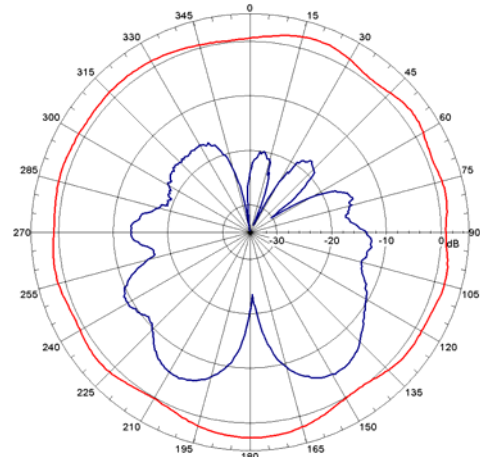
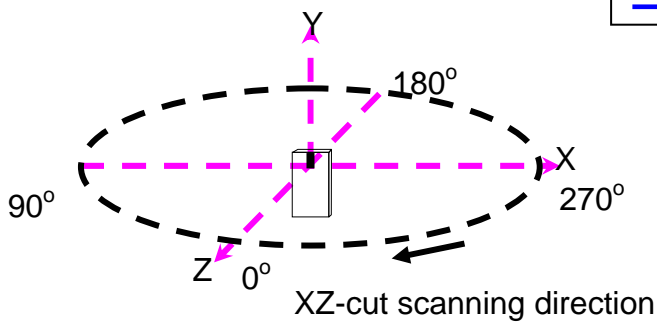


❖ Radiation Patterns

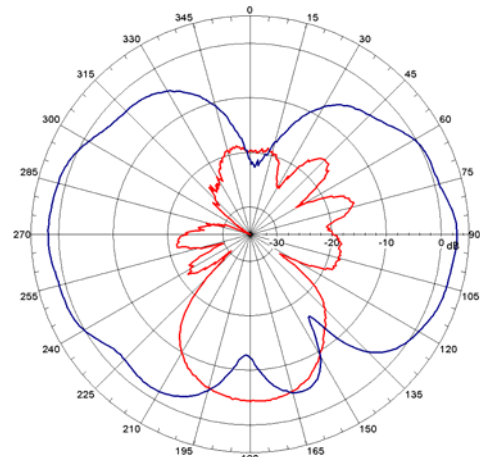
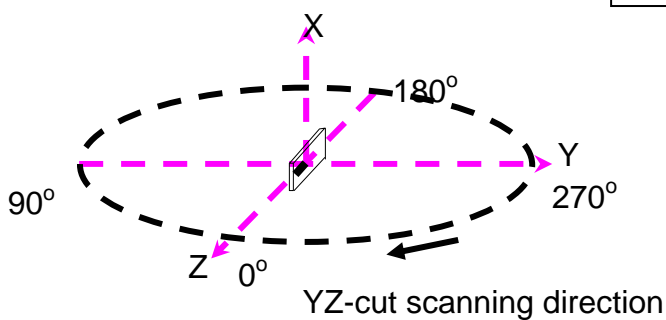
XY-V/XY-H



XZ-V/XZ-H

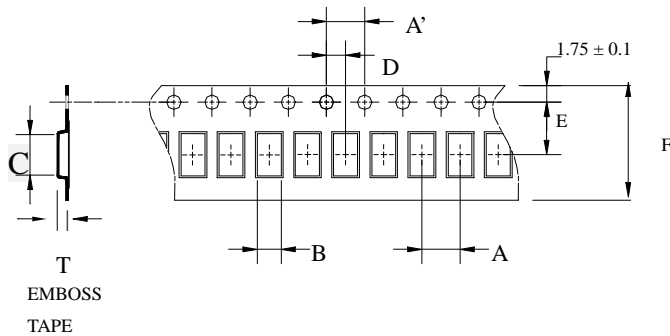


YZ-V/YZ-H



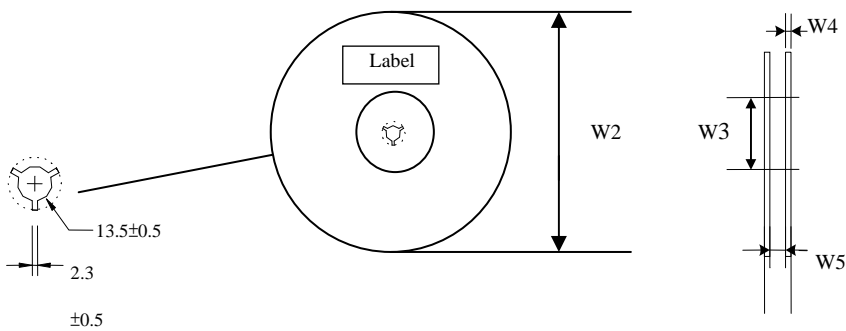
Taping Specifications

❖ Tape & Reel Dimensions (Unit: mm) vs. Quantity (pcs)



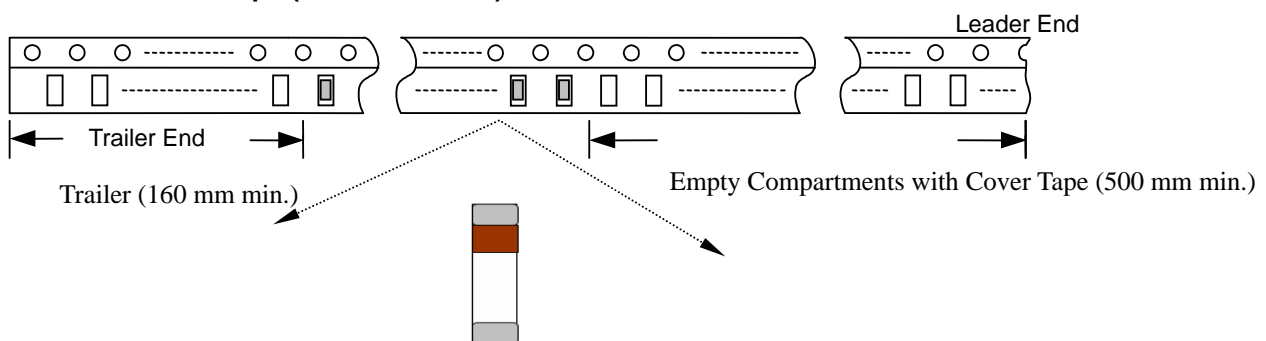
Type	A	A'	B	C	D	E	F	T	Quantity/per reel	Tape material
AT8010	4.0±	4.0±	1.3±	8.35±	2.0±	7.5±	16.0±	1.15±	1,000pcs	Plastic (Embossed)
	0.1	0.1	0.1	0.1	0.05	0.1	0.1	0.1		

❖ Reel Dimensions (Unit: mm)

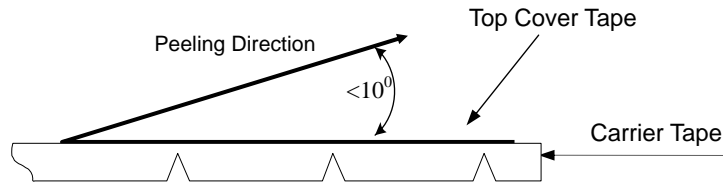


Type	W2	W3	W4	W5
AT8010	178±1	60±1	1.4±0.2	17±0.5

❖ Leader and Trailer Tape (Plastic material)



❖ **Peel-off Force**



Peel-off force should be in the range of 0.1 – 0.6 N at a peel-off speed of 300 ± 10 mm/min .

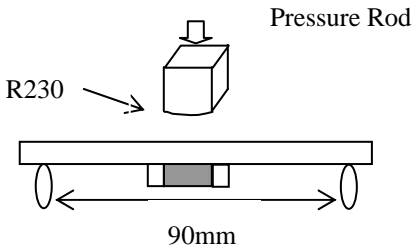
❖ **Storage Conditions**

- (1) Temperature: 15 ~35°C , relative humidity (RH): 45~75%.
- (2) Non-corrosive environment.

Notes

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

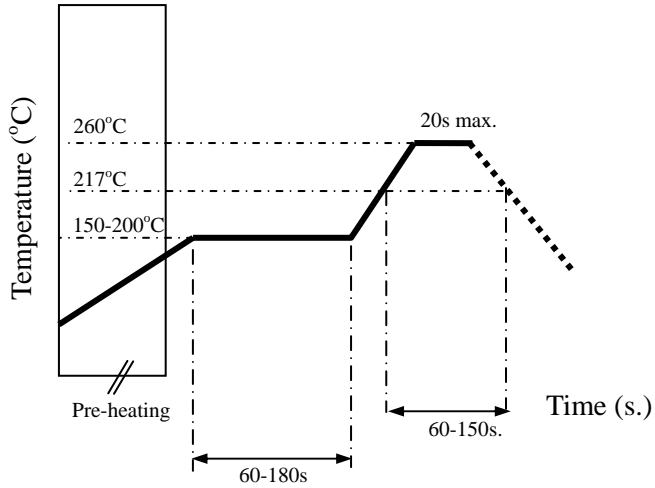
Mechanical & Environmental Characteristics

Item	Requirements	Procedure
Solderability	<ol style="list-style-type: none"> No apparent damage More than 95% of the terminal electrode shall be covered with new solder 	<ol style="list-style-type: none"> Preheat: $120 \pm 5^\circ\text{C}$ Solder: $245 \pm 5^\circ\text{C}$ for 5 ± 1 sec
Soldering strength (Termination Adhesion)	<ol style="list-style-type: none"> 1kg minimum 	<ol style="list-style-type: none"> Solder specimen onto test jig. Apply push force at 0.5mm/s until electrode pads are peeled off or ceramic are broken. Pushing force is applied to longitude direction
Deflection (Substrate Bending)	<ol style="list-style-type: none"> No apparent damage 	<ol style="list-style-type: none"> Solder specimen onto test jig (FR4, 0.8mm) using the recommend soldering profile. Apply a bending force of 1mm deflection. 
Heat/Humidity Resistance	<ol style="list-style-type: none"> No apparent damage Fulfill the electrical specification after test 	<ol style="list-style-type: none"> Temperature: $85 \pm 2^\circ\text{C}$ Humidity: 90% ~ 95% RH Duration: 1000 ± 48hrs Recovery: 1-2hrs
Thermal shock (Temperature Cycle)	<ol style="list-style-type: none"> No apparent damage Fulfill the electrical specification after test 	<ol style="list-style-type: none"> One cycle/step 1 : $125 \pm 5^\circ\text{C}$ for 30 min step 2 : $-40 \pm 5^\circ\text{C}$ for 30 min No of cycles : 100 Recovery: 1-2 hrs
Low Temperature Resistance	<ol style="list-style-type: none"> No apparent damage Fulfill the electrical specification after test 	<ol style="list-style-type: none"> Temperature: $-40 \pm 5^\circ\text{C}$ Duration: 500 ± 24hrs Recovery: 1-2hrs

Soldering Conditions

❖ Typical Soldering Profile for Lead-free Process

Reflow Soldering :



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