ACX
Advanced Ceramic X

AT3216 Series (Preliminary)

Multilayer Chip Antenna

Features

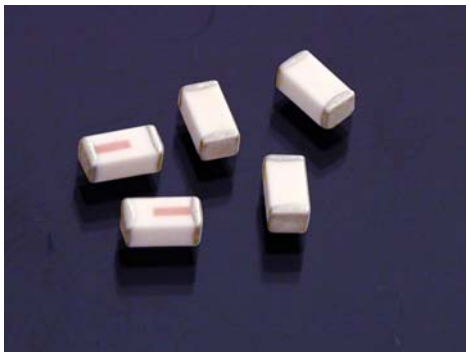
❖ Monolithic SMD with small, low-profile and light-weight type.

❖ Wide bandwidth

Applications

❖Bluetooth/Wireless LAN/Home RF

❖ISM band 2.4GHz applications



Specifications

Part Number	Operating Frequency (MHz)	Peak Gain (YZ-total)	Average Gain (YZ-total)	VSWR	Impedance
AT3216 -E2R4HAA_	2400 ~ 2500	1.0 dBi typ.	-3.0 dBi typ.	4.0 max.	50 Ω

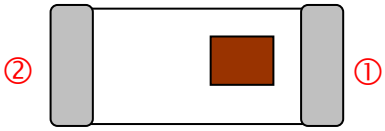
Q'ty/Reel (pcs) : 3,000pcs
Operating Temperature Range : -40 ~ +85 °C
Storage Temperature Range : +5 ~ +35 °C, Humidity 45~75%RH
Storage Period : 12 months max.
Power Capacity : 2W max.

Part Number

AT	3216	-	E	2R4	HAA	□	□
①	②		③	④	⑤	⑥	⑦

① Type	AT : Antenna	② Dimensions (L × W)	3.2× 1.6 mm
③ Material Code	E	④ Initial center frequency	2R4=2400MHz
⑤ Specification Code	HAA	⑥ Packaging	T: Tape & Reel B: Bulk
⑦ Soldering	=lead-containing /LF=lead-free		

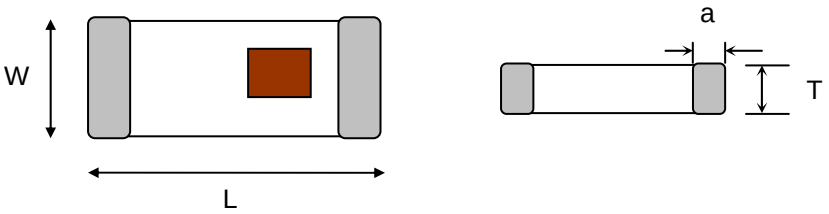
Terminal Configuration



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

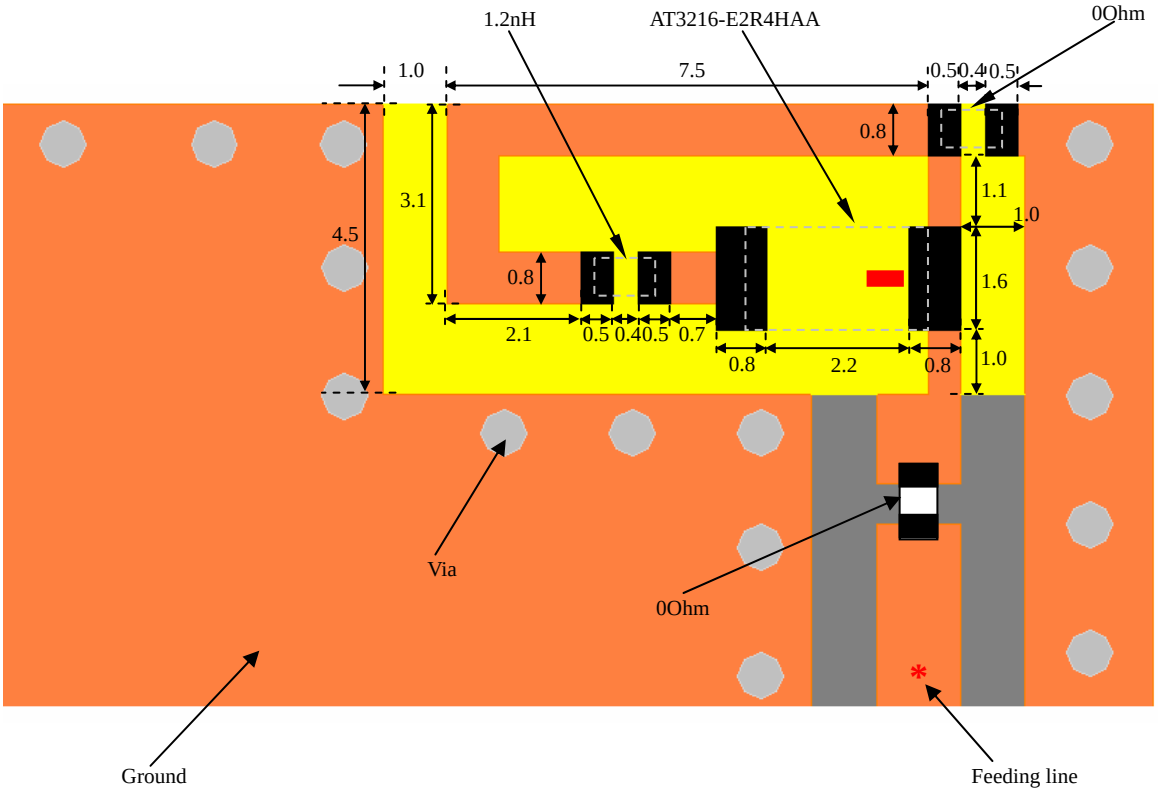
Dimensions and Recommended PC Board Pattern

Unit : mm



Mark	L	W	T	a
Dimensions	3.2±0.2	1.6±0.2	1.2+ 0.1/-0.2	0.5±0.3

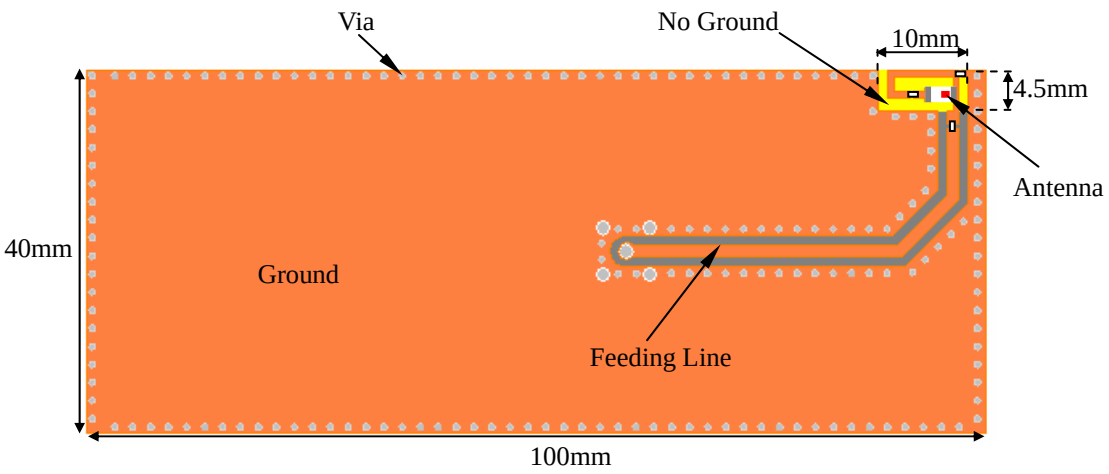
❖With Matching Circuits - Unit in mm



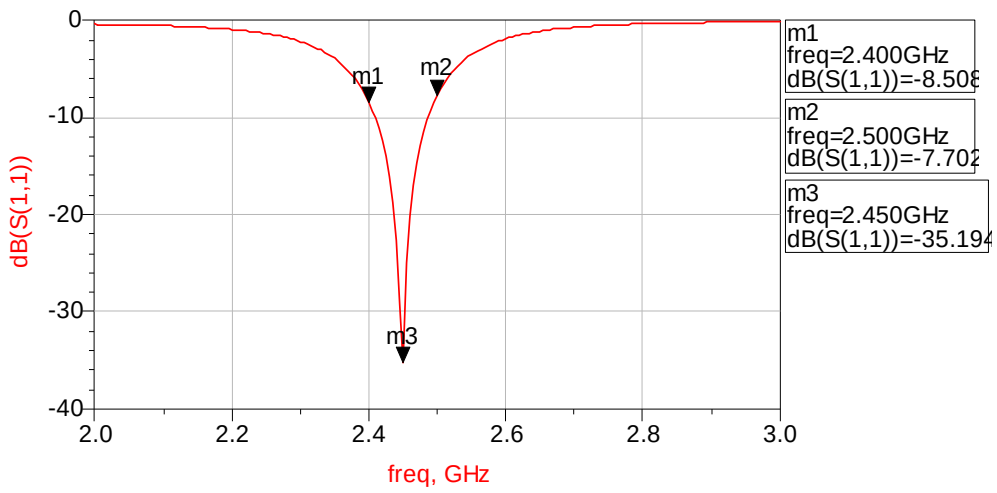
*Line width should be designed to match 50Ω characteristic impedance, depending on PCB material and thickness.

Typical Electrical Characteristics (T=25°C)

❖Test Board

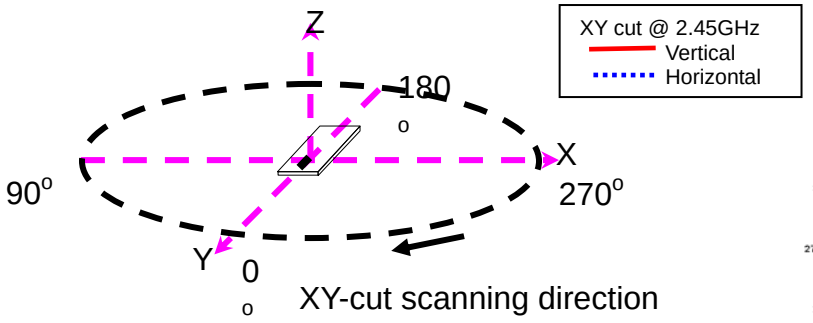


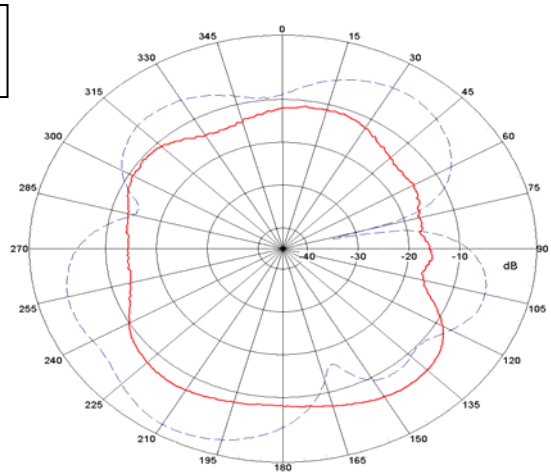
❖Return Loss-with matching circuits



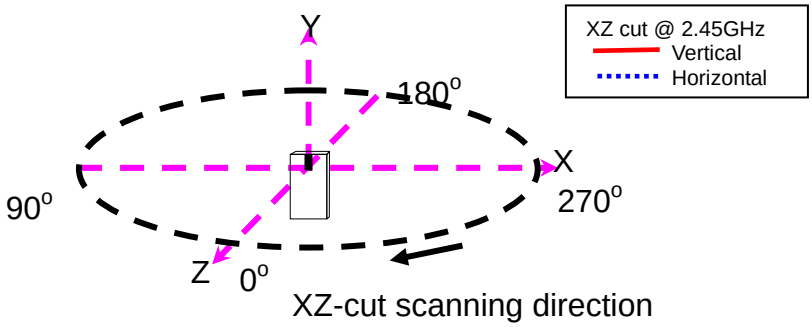
❖Radiation Patterns

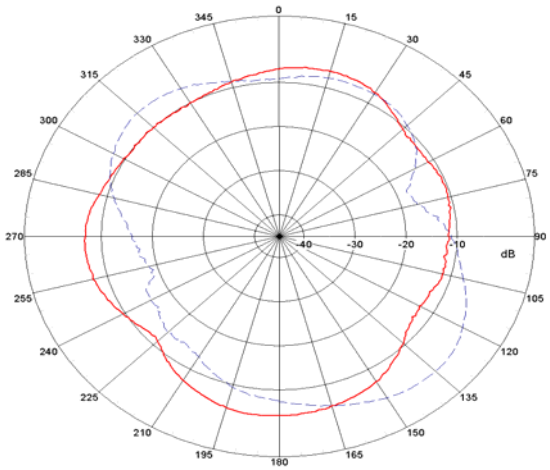
XY-V/XY-H



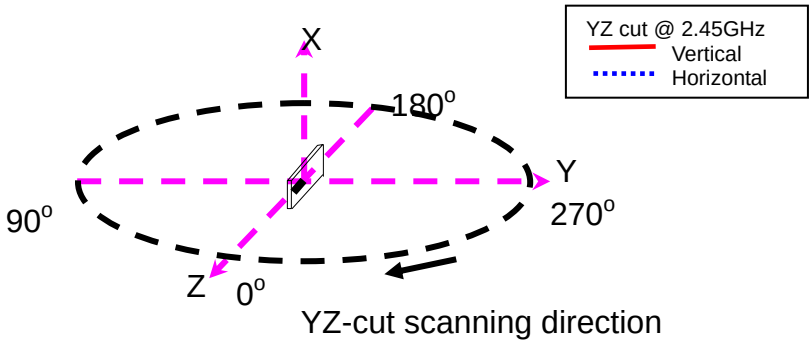


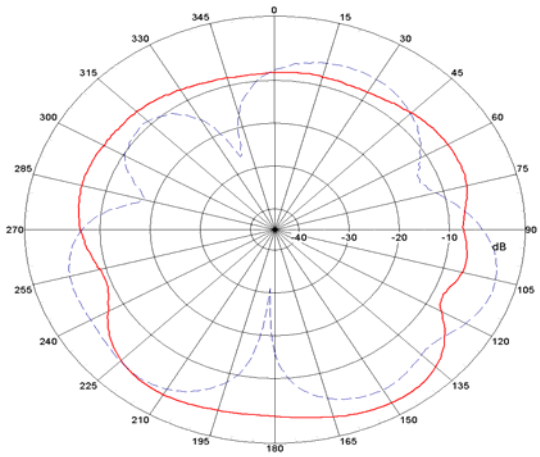
XZ-V/XZ-H





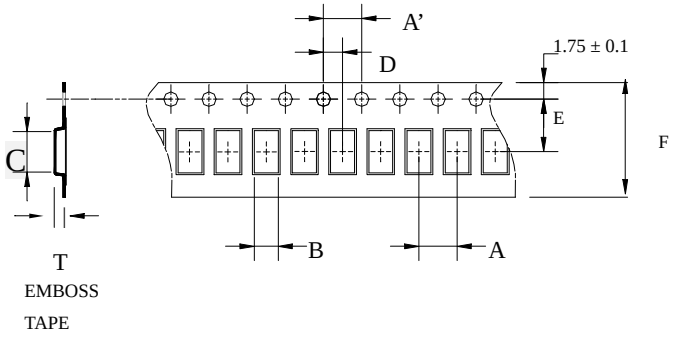
YZ-V/YZ-H





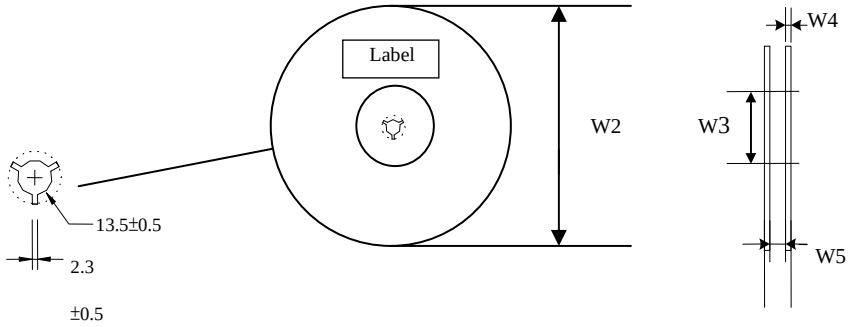
Taping Specifications

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



Type	A	A'	B	C	D	E	F	T	Quantity/per reel	Tape material
AT3216	4.0± 0.1	4.0± 0.05	1.88± 0.1	3.5± 0.1	2.0± 0.05	3.5± 0.05	8.00± 0.1	1.27± 0.1	3,000pcs	Plastic (Embossed)

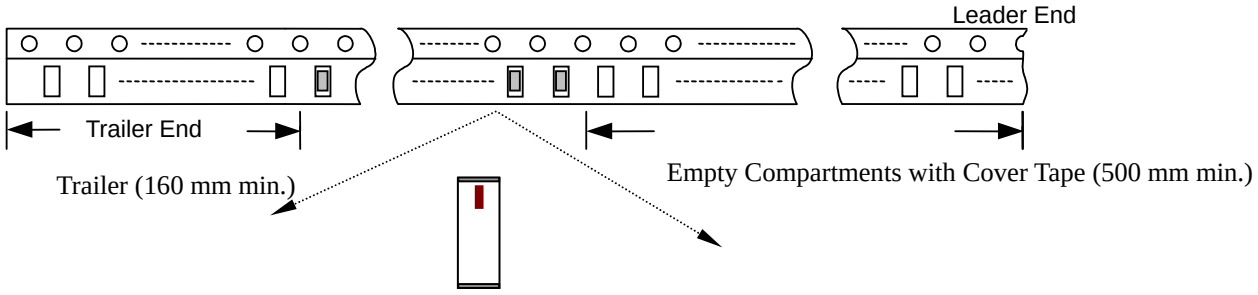
❖Reel Dimensions (Unit: mm)



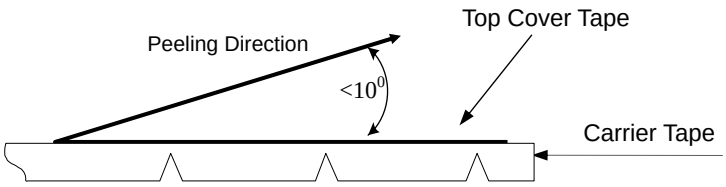
Label: Customer's Name,
ACX P/N, Q'ty, Date,
ACX Corp.

Type	W2	W3	W4	W5
AT3216	178±1	60±1	1.4±0.2	17±0.5

❖Leader and Trailer Tape



❖**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 .

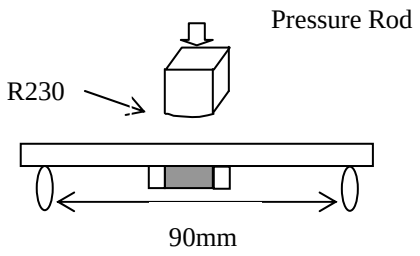
❖**Storage Conditions**

(1) Temperature: 15 ~35℃, 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.

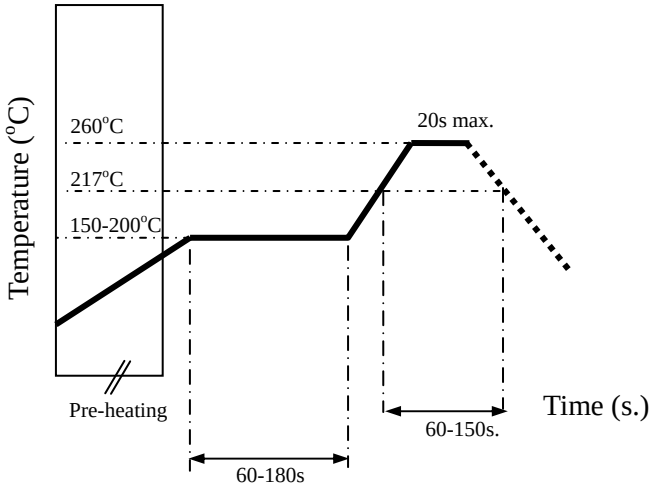
Mechanical & Environmental Characteristics

Item	Requirements	Procedure
Solderability	1. No apparent damage 2. More than 95% of the terminal electrode shall be covered with new solder	1. Preheat: 120± 5 °C 2. Solder: 245± 5°C for 5± 1 sec
Soldering strength (Termination Adhesion)	1. 1kg minimum	1. Solder specimen onto test jig. 2. 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)	1. No apparent damage	1. Solder specimen onto test jig (FR4, 0.8mm) using the recommend soldering profile. 2. Apply a bending force of 2mm deflection 
Heat/Humidity Resistance	1. No apparent damage 2. Fulfill the electrical specification after test	1. Temperature: 85± 2°C 2. Humidity: 90% ~ 95% RH 3. Duration: 1000±48hrs 4. Recovery: 1-2hrs
Thermal shock (Temperature Cycle)	1. No apparent damage 2. Fulfill the electrical specification after test	1. One cycle/step 1：125 ± 5°C for 30 min step 2：- 40 ± 5°C for 30 min 2. No of cycles：100 3. Recovery:1-2 hrs
Low Temperature Resistance	1. No apparent damage 2. Fulfill the electrical specification after test	1. Temperature: -40°± 5 °C 2. Duration: 500 ±24hrs 3. Recovery: 1-2hrs

Soldering Conditions

❖**Typical Soldering Profile for Lead-free Process**

Reflow Soldering :



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