

#### HCA2012B2450D08S

#### Description

The HCA2012B2450D08S chip antenna is designed for WIFI /Bluetooth applications. This chip antenna has excellent stability consistently provide high signal reception efficiency.

#### Features

- Dimensions 2.0 x 1.2 x 0.6 (mm)
- Stable and reliable in performances
- Low temperature coefficient of frequency
- Low profile, compact size
- RoHS compliance
- SMT processes compatible

### Dimensions /Recommended Pattern



	NO.	Terminal Name							
nm	[1]	Input							
	[2]	GND							

Applications

• Bluetooth earphone systems

are needed, e.g., Smart phone

Product Identification

• Hand-held devices when WIFI/Bluetooth functions

• ZigBee, Wireless PCMCIA cards or USB dongle

ТҮРЕ	L	w	т	а		
HCA0201B2450D08S	2.0±0.2	1.2±0.2	0.6±0.1	0.6±0.1		

**Dimensions** in mm



#### HCA2012B2450D08S

### Electrical Characteristics

Working Frequency Range	2400 ~ 2485 MHz
Peak Gain	2.7 dBi
Impedance	50 Ohm
V.S.W.R	≤2.0
Polarization	Linear
Azimuth Beam width	Omni-directional
Band Width	65MHz typ

## Matching Circuit and Evaluation Board

With the following recommended values of matching and tuning components, the center frequencies will be about 2450 MHZ at our standard 50x20 mm2 evaluation board. However, these are reference values, may need to be changed when the circuit boards or part vendors are different.



### Dimensions and Recommended PC Board pattern





HCA2012B2450D08S

## **Return Loss & Radiation**



Frequency (MHz)	Return Loss (dB)
2400	-9.9198
2442	-19.099
2485	-9.9376

## 3D Radiation







### HCA2012B2450D08S









HCA2012B2450D08S

## Reliability Test and Requirement

ltem	Test Methods	Specifications				
Solder Ability	Solder: Sn/3.0Ag/0.5Cu	No visible mechanical damage.				
	Temperature:240°C±2°C	More than 95% of termination				
	Flux:25% Resin and 75% ethanol in weight	should be covered with new solder.				
	Duration: 3±0.5s					
Leaching	Solder: Sn/3.0Ag/0.5Cu	No visible mechanical damage.				
Resistance	Temperature:260°C±3°C	More than 95% of termination				
	Flux: 25% Resin and 75% ethanol in weight	should be covered with new solder.				
	Duration: 5±0.5s	Inductance change: Within ±20%.				
	The chip shall be stabilized at normal condition for 1~2 hours before measuring					
Terminal Strength	The device should not be broken after tensile force of 1.0kg is slowly applied to	The terminal and body should be no				
	pull a lead pin of the fixed device in the lead axis direction for $10\pm1$ seconds.	damage.				
		Chip F				
		Mounting Pad Glass Epoxy Board				
Bending Strength	Weld the product to the center part of the PCB with the thickness 1.6±0.2mm as	No visible mechanical damage.				
	the illustration shows, and keep exerting force arrow ward on it at speed of					
	0.5mm/sec, and hold for $5\pm1S$ at the position of 2mm bending distance.	3sec. Max.				
	20 	350°C Soldering Iron Power: max. 30W				
	R230	Diameter of Soldering				
	45/1772) + 45/1772	Тс тс				
Drop	Drop 10 times on a concrete floor from a height of 1m.					
Vibration	Frequency: 10 to 55 Hz	No visible mechanical damage.				
	Amplitude: 1.5mm	Inductance change: Within ±20%				
	Direction and time: X, Y and Z directions for 2 hours each.					
Humidity	Test condition:1) temperature, 60°C±2°C, 2) humidity ,90%-95%RH;3) test time,					
	96±2h.					
	Measurement method: the component should be stabilized at normal condition					
	for (24±2) hours before test.					
High temperature	Test condition:1) temperature, 85°C±2°C, 2) test time, 96±2h.					
Exposure	Measurement method: the component should be stabilized at normal condition					
	for (24±2) hours before test.					
Low Temperature	Test condition:1) temperature, -40°C $\pm$ 2°C, 2) test time, 96 $\pm$ 2h.					
Storage	Measurement method: the component should be stabilized at normal condition					
	for (24±2) hours before test.					
Thermal shock	Test condition:1)-40°C±2°Cfor 30±3min; 2) 85°C±2°Cfor 30±3min; 3) 50 cycles.					
	Measurement method: the component should be stabilized at normal condition					
	for (24±2) hours before test.					



HCA2012B2450D08S

## Slodering Conditions



## Packaging Specifications



	Tape Dimensions (mm)									Reel Dimensions (mm)					Quantity	
TYPE	A0	B0	Т	Е	W	Ρ	P0	P2	F	K0		А	В	С	D	Pcs/Reel
HCA2012B2450D08S	1.65	2.4	0.75	1.75	8	4	4	2	3.5	0.73		178	60	9.0	14.4	4000