



ISO9001 & ISO14001 & TS16949 CHILISIN ELECTRONICS CORP.

**Lead-Free & RoHs Compliance!!**

**SPECIFICATION FOR APPROVAL**

**CUSTOMER :** \_\_\_\_\_

**CUSTOMER P/N :** \_\_\_\_\_

**OUR DWG No :** \_\_\_\_\_

**QUANTITY :** \_\_\_\_\_ **Pcs.**    **DATE :**    **2021/6/11**

**ITEM :**                    **BTCAKC321609002G4Y**

SPECIFICATION ACCEPTED BY:	
<b>COMPONENT ENGINEER</b>	
<b>ELECTRICAL ENGINEER</b>	
<b>MECHANICAL ENGINEER</b>	
<b>APPROVED</b>	
<b>REJECTED</b>	

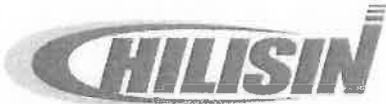
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# Chip Series Specification

**1 Scope: This specification applies to Chip series antenna**

**2 Part Numbering: Product Identification**

B TCA □□ 3216 □□□□ □□□ Y  
 (1) (2) (3) (4) (5) (6) (7)

- (1)Grade**
- (2)Product Series**
- (3)Control Code**
- (4)Dimensions**
- (5)Internal Code**
- (6)Frequency**
- (7)Version Code**

**3 Rating:**

**Operating Temperature:** -25 °C ~ 125 °C

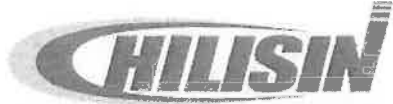
**Storage Temperature:** 20 °C ~ 25 °C **R.H. 65% (For Reference)**

**4 Marking:**



**5 Standard Testing Condition:**

	Unless otherwise specified	In case of doubt
Humidity	Ordinary Humidity(25 to 85% RH)	60 to 70 % RH
Temperature	Ordinary Temperature(15 to 35°C)	20±2°C



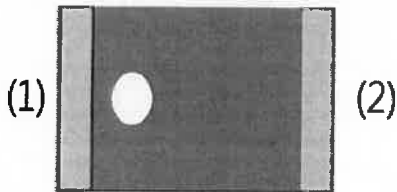
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## Chip Series Specification

### 6 Configuration and Dimensions:

Figure	Dimensions(mm)	
	L	3.2±0.15
	W	1.6±0.15
	T	1.2±0.15
	C	0.4±0.2

### TERMINAL CONFIGURATION



- (1) Feed Termination
- (2) Solder Termination

### 7 Electrical Characteristics:

Part No.	Impedance ( $\Omega$ )	Test Freq. (GHz)	Bandwidth* (MHz)	Peak Gain* (dBi)	VSWR (max)	Polarization (Linear)	Efficiency (%)
BTCAKC321609002G4Y	50	2.4	100	2~3	1.8	Linear	50

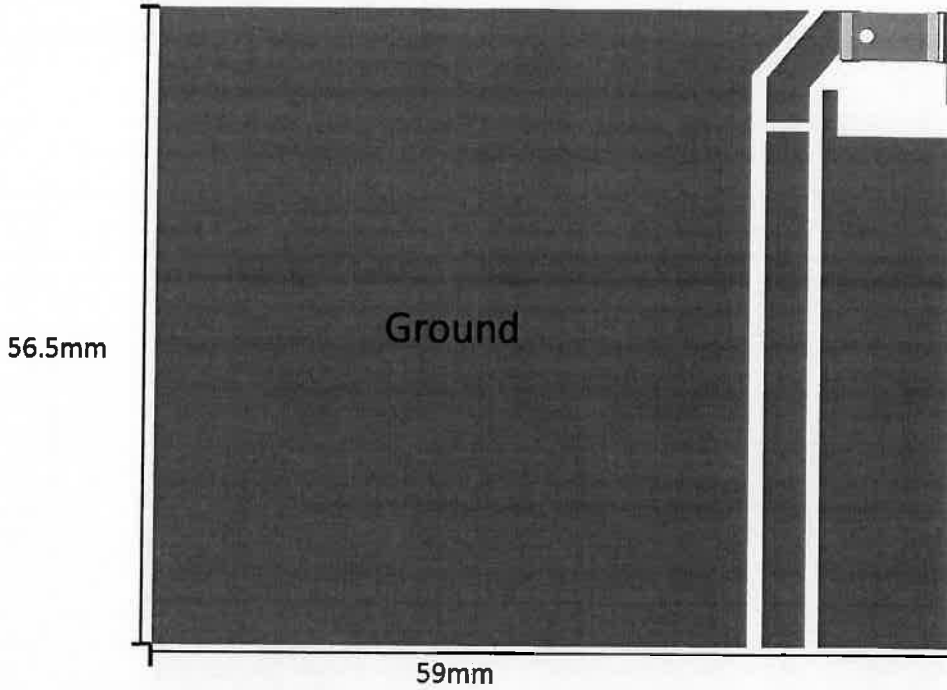
NOTE: \*Depend on PCB layout.



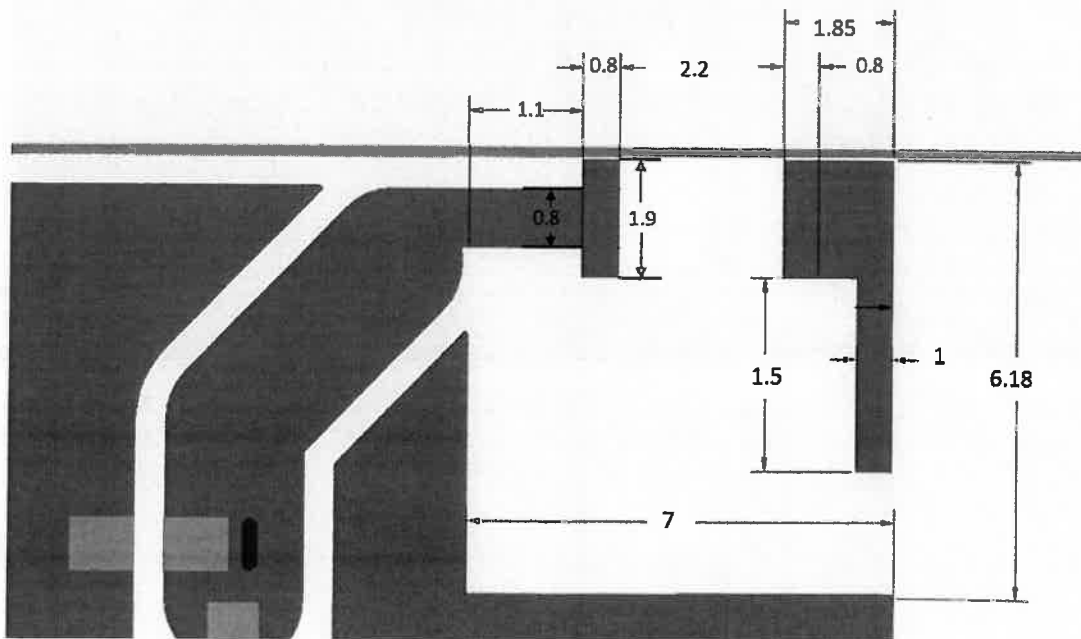
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## Chip Series Specification

### 8 Dimensions and Recommended PC Board Pattern:



NOTE : Dimensions in mm

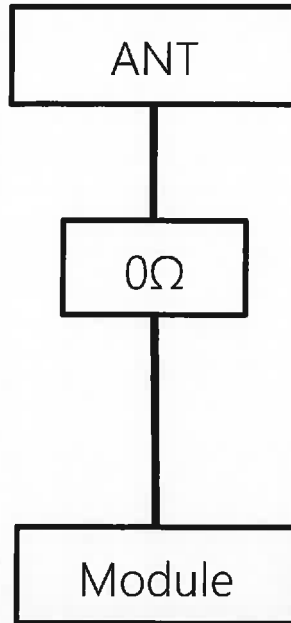




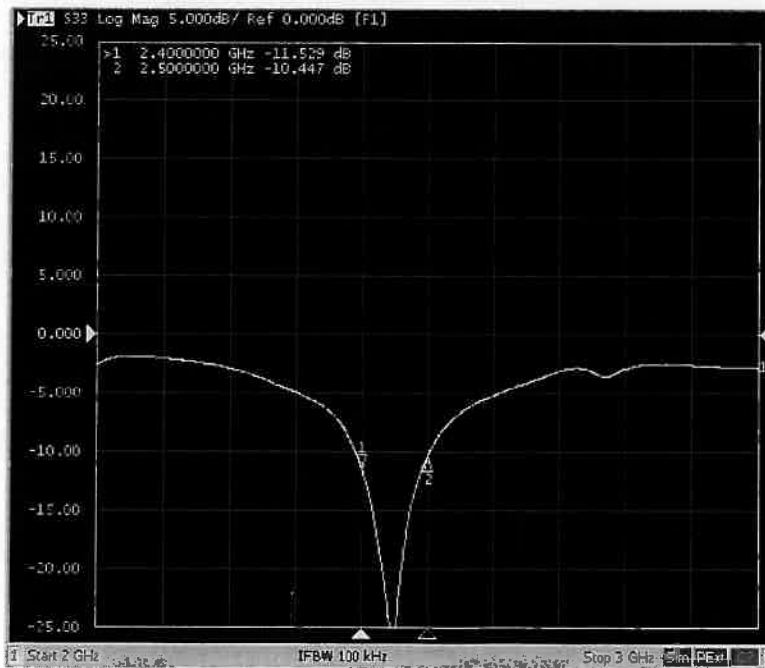
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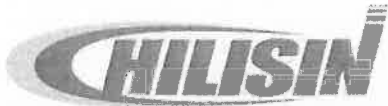
## Chip Series Specification

### 9 Matching Circuit:



Return Loss

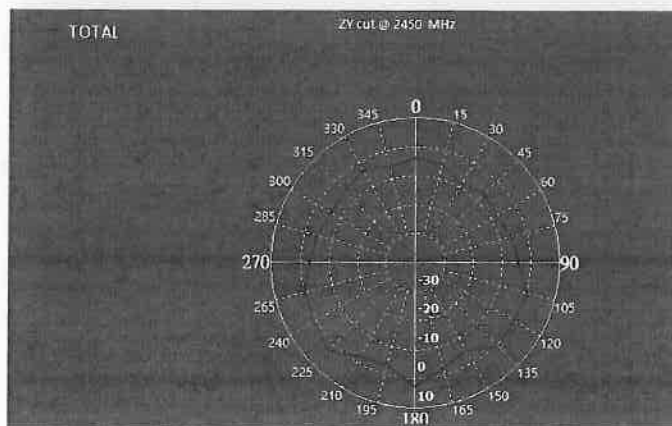
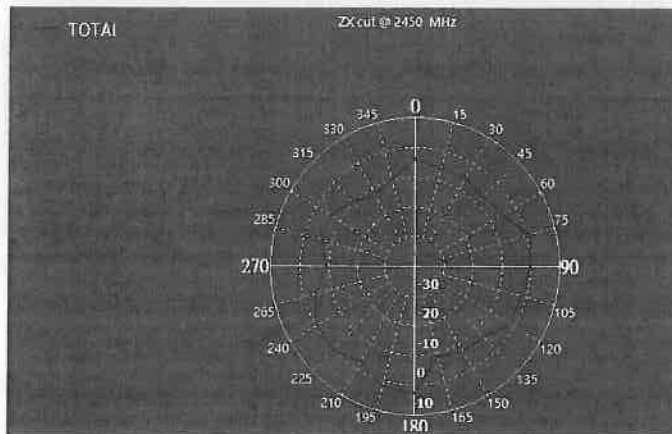
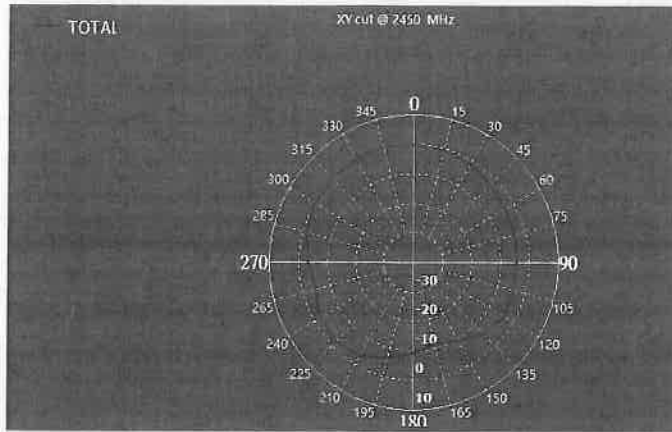




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## Chip Series Specification

### 9.2 Radiation Pattern(@2450MHz)







## Chip Series Specification

### 10 Reliability Of Ferrite Multilayer Chip Bead

#### 1-1. Mechanical Performance

No	Item	Specification	Test Method
1-1-1	Board Flex	The forces applied on the right conditions must not damage the terminal electrode and the ferrite	Test device shall be soldered on the substrate Substrate Dimension: 100x40x1.6mm Deflection: 2.0mm Keeping Time: 60 sec 
1-1-2	Resistance to Soldering Heat	Meet the electrical Specification after test	Refer to MIL-STD-202 Method 210 Pre-heating: 150-200°C, 60-100 sec Above 217°C, 60-150 secs Peak Temperature: 260±5°C, 20-40 sec Cycles : 2 times
1-1-3	Solder ability	The electrodes shall be at least 95% covered with new solder coating	Refer to J-STD-002 Pre-heating: 150°C, 1min Solder Composition: Sn/Ag3.0/Cu0.5(Pb-Free) Solder Temperature: 245±5°C (Pb-Free) Immersion Time: 4±1sec
1-1-4	Terminal Strength Test	The chip must not damage the terminal electrode and the ferrite	Test device shall be soldered on the substrate Force 2N for 60±1 seconds for 0603 series Force 5N for 60±1 seconds for 1005 series Force 10N for 60±1 seconds for 1608 series Force 1.8Kg for 60±1 seconds for the other series. 
1-1-5	Vibration Test	Meet the electrical Specification after test	Refer to MIL-STD-202 Method 204 Vbration waveform: Sine waveform Vibration frequency: 10Hz~2000Hz Vibration acceleration: 5g 10Hz~20KHz and back to 10Hz should be down in 20 minutes Duration of test: 12 cycles each of 3 orientations, 20 minutes for each cycle, 12 hr total Vibration axes: X, Y & Z
1-1-6	Resistance to Solvent	There must be no change in appearance or obliteration of marking	Refer to MIL-STD-202 Method 215 Inductors must withstand 6 mimutes of alcohol or water.



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## Chip Series Specification

### 10 Reliability Of Ferrite Multilayer Chip Bead

#### 1-2. Environmental Performance

No	Item	Specification	Test Method
1-2-1	Temperature Cycle	Meet the electrical Specification after test	Refer to JESD Method JA-104 Total cycles: 1000 cycles 30 minutes exposure to -40℃ 30 minutes exposure to 125℃ 1 min. maximum transition between temperatures  Measured after exposure in the room condition for 24hrs
1-2-2	Biased Humidity Resistance		Refer to MIL-STD-202 Method 103 Temperature: 85±2℃ Relative Humidity:85% / Time: 1000hrs  Measured after exposure in the room condition for 24hrs
1-2-3	High Temperature Exposure (Storage)		Refer to MIL-STD-202 Method 108 Temperature: 125±3℃ / Relative Humidity: 0% Time: 1000hrs  Measured after exposure in the room condition for 24hrs
1-2-4	Low Temperature Exposure (Storage)		Refer to MIL-STD-202 Method 108 Temperature: -40±3℃ / Relative Humidity : 0% Applied Current: Rated Current/ Time: 1000hrs  Measured after exposure in the room condition for 24 hrs





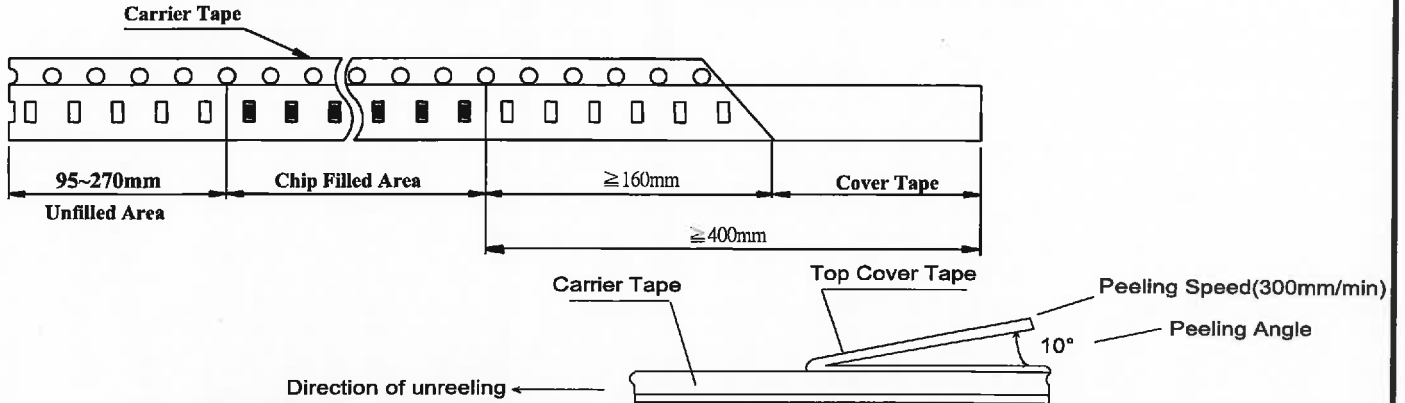
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# Chip Series Specification

## 11 Packaging:

### 11.1 Packaging - Cover tape

The force for tearing off cover tape is 10 to 60 grams in the arrow direction.

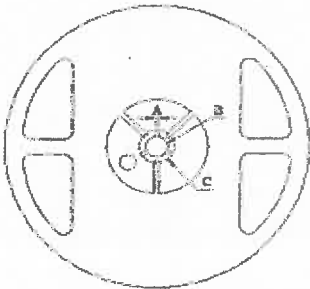


### 11.2 Packaging Quantity

TYPE	BULK	PCS/REEL
BTCA3216	X	3000

### 11.3 Reel Dimensions in mm

Unit:mm



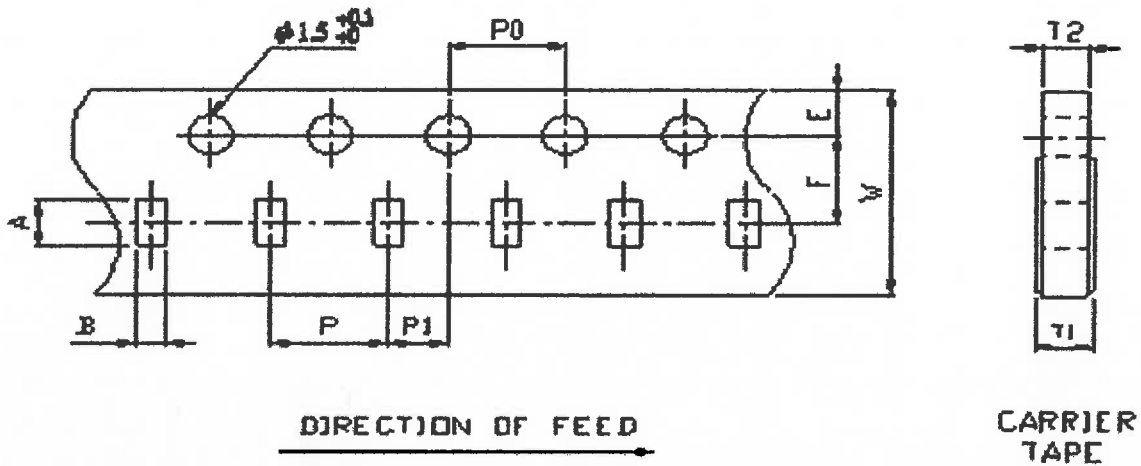
Reel Type / Tape	Wa	M	A	B	C	D
7" reel for 8 mm tape	9.0 <sup>±0.5</sup>	178 <sup>±2.0</sup>	2.0 <sup>±0.5</sup>	13.5 <sup>±0.5</sup>	21.0 <sup>±0.5</sup>	60.0 <sup>±1.0</sup>



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## Chip Series Specification

### 11.4 Tape Dimensions in mm



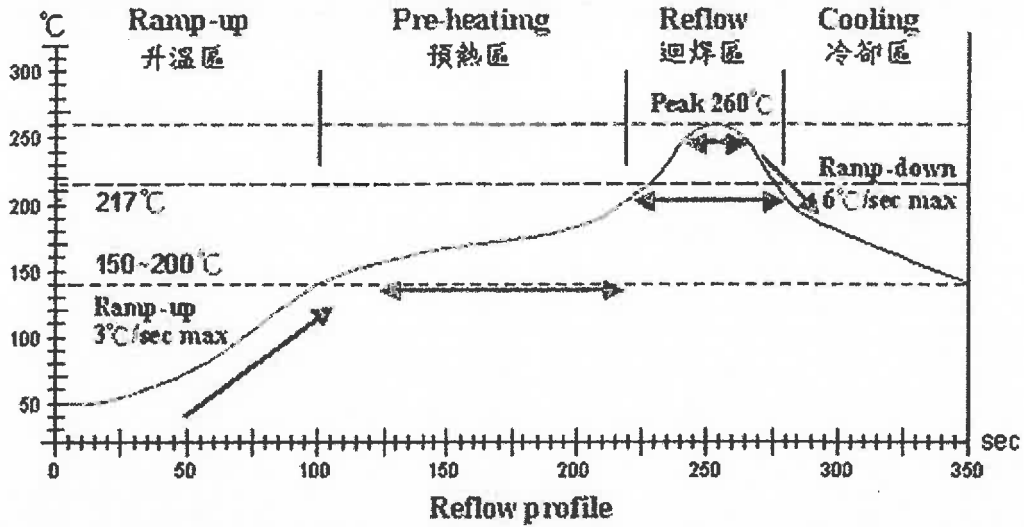
Packaging	Dimensions (mm)										
	A.	B.	W.	E.	F.	T1.	T2.	P.	P0.	10xP0.	P1.
Carrier Tape.	3.50±0.20	1.90±0.20	8.00±0.20	1.75±0.10	3.50±0.05	0.75±0.2/-0	0.75±0.10	4.00±0.10	4.00±0.05	40.00±0.20	2.00±0.05

**Note:** The moisture sensitivity level (MSL) of products is classified as level 1.



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## Chip Series Specification



Lead-Free(LF) 標準溫度分析範圍

Refer to J-STD-020C

管制項目 Item.	升温區 Ramp-up	預熱區 Pre-heating	迴焊區 Reflow	Peak Temp	冷卻區 Cooling
溫度範圍 Temp. scope	R.T. ~ 150°C	150°C ~ 200°C	217°C	260±5°C	Peak Temp. ~ 150°C
標準時間 Time spec.	—	60 ~ 180 sec	60 ~ 150 sec	20 ~ 40 sec	—
實際時間 Time result	—	75 ~ 100 sec	90 ~ 120 sec	20 ~ 35 sec	—

NOTE :

1. Re-flow possible times : within 2 times
2. Nitrogen adopted is recommended while in re-flow