



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:**

| | |
|----------------------------|--|
| COMPONENT ENGINEER | |
| ELECTRICAL ENGINEER | |
| MECHANICAL ENGINEER | |
| APPROVED | |
| REJECTED | |

奇力新電子股份有限公司

Chilisin Electronics Corp
No. 29, Alley 301, Tehhsin Rd.,
Hukou,Hsinchu 303, Taiwan
TEL : +886-3- 599-2646
FAX : +886-3- 599-9176
E-mail : sales@chilisin.com
http : //www.chilisin.com

東莞奇力新電子有限公司

Chilisin Electronics (Dongguan) Co., Ltd.
No. 78, Puxing Rd., Yuliangwei Administration
Area, Qingxi Town, Dongguan City,
Guangdong,China
TEL : +86-769-8773-0251~3
FAX : +86-769-8773-0232
E-mail : cect@chilisin.com

奇力新電子(河南)有限公司

Chilisin Electronics (Henan) Co., Ltd.
XiuWu Xian, industry gathering area
JiaoZuo, Henan China
Postal Code:454350
TEL:+86-391-717-0682
FAX:+86-391-717-0666

蘇州奇益新電子有限公司

SUZHOU QI YIXIN Electronics Co., Ltd.
No.143,Song Shan Rd., Suzhou New District,
Suzhou,China
Postal Code:215129
TEL:+86-512-6841-2350
FAX:+86-512-6841-2356

| | | |
|------------------------------------|--------------------------------------|-----------------------------------|
| DRAWN BY 施友程 Robert.Shih | CHECKED BY 施友程 Robert.Shih | APPROVED BY 曲長文 Wen.Chu |
|------------------------------------|--------------------------------------|-----------------------------------|



ISO9001 & ISO14001 & TS16949 CHILISIN ELECTRONICS CORP.

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: $-25^{\circ}\text{C} \sim 125^{\circ}\text{C}$

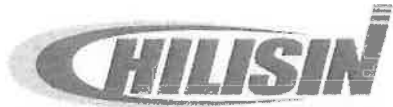
Storage Temperature: $20^{\circ}\text{C} \sim 25^{\circ}\text{C}$ **R.H. 65% (For Reference)**

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 |



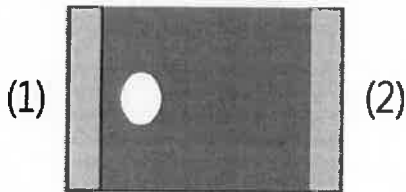
ISO9001 & ISO14001 & TS16949 **CHILISIN ELECTRONICS CORP.**

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 (Ω) | Test Freq. (GHz) | Bandwidth* (MHz) | Peak Gain* (dBi) | VSWR (max) | Polarization (Linear) | Efficiency (%) |
|--------------------|---------------|------------------|------------------|------------------|------------|-----------------------|----------------|
| BTCAKC321609002G4Y | 50 | 2.4 | 100 | 3 | 1.8 | Linear | 50 |

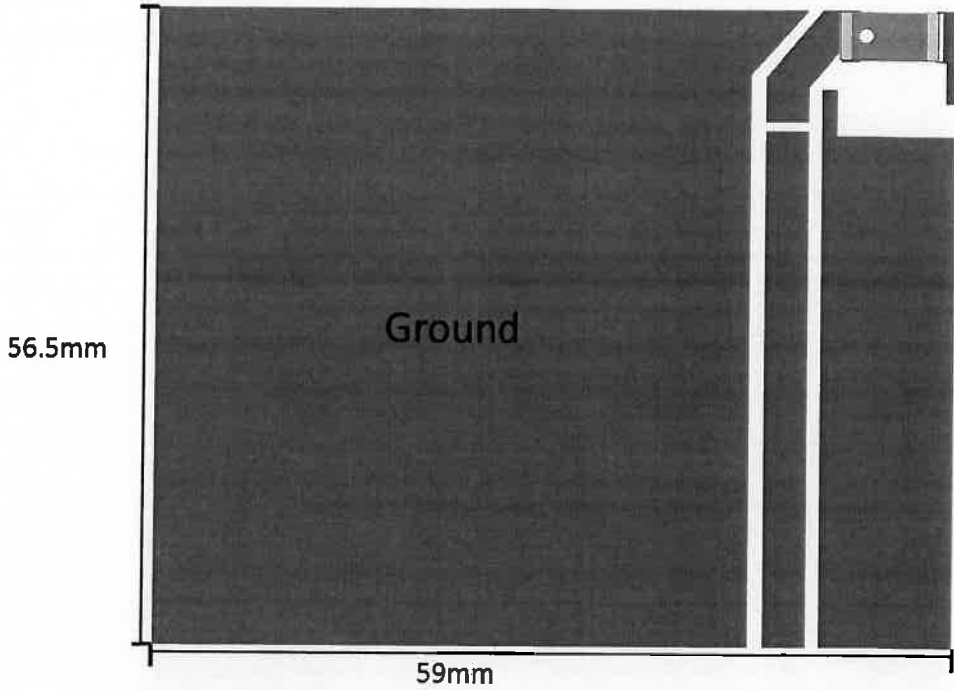
NOTE: *Depend on PCB layout.



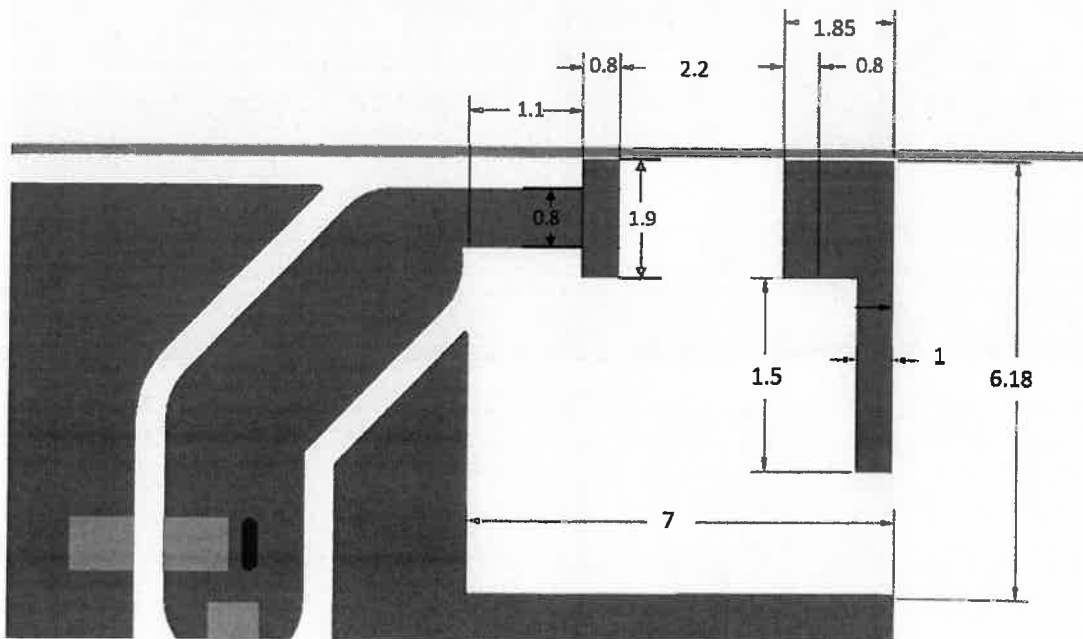
ISO9001 & ISO14001 & TS16949 CHILISIN ELECTRONICS CORP.

Chip Series Specification

8 Dimensions and Recommended PC Board Pattern:



NOTE : Dimensions in mm

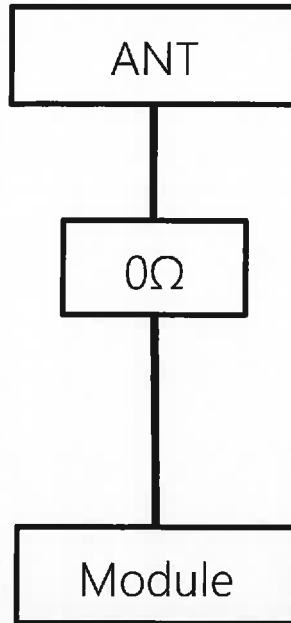




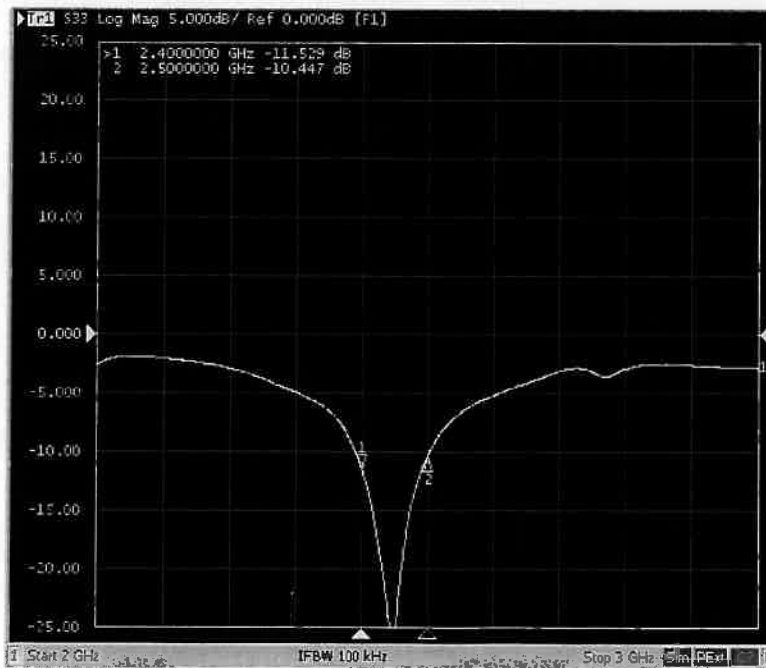
ISO9001 & ISO14001 & TS16949 CHILISIN ELECTRONICS CORP.

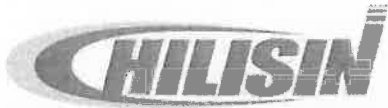
Chip Series Specification

9 Matching Circuit:



Return Loss

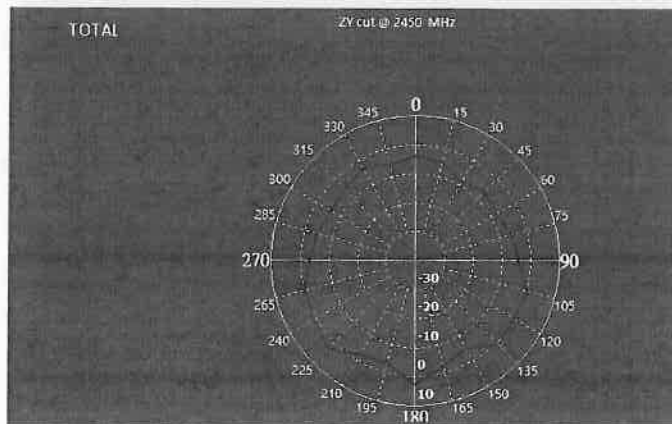
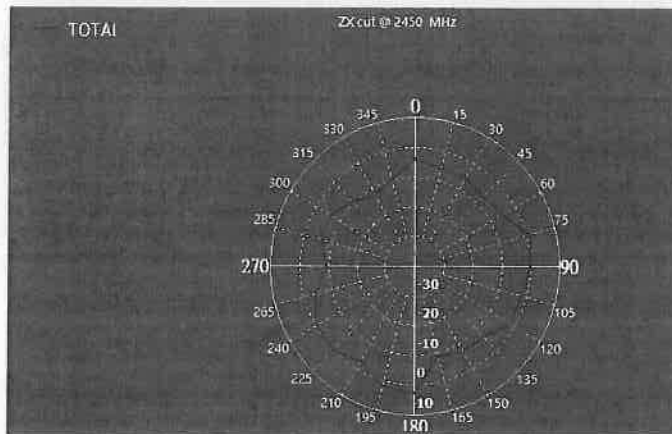
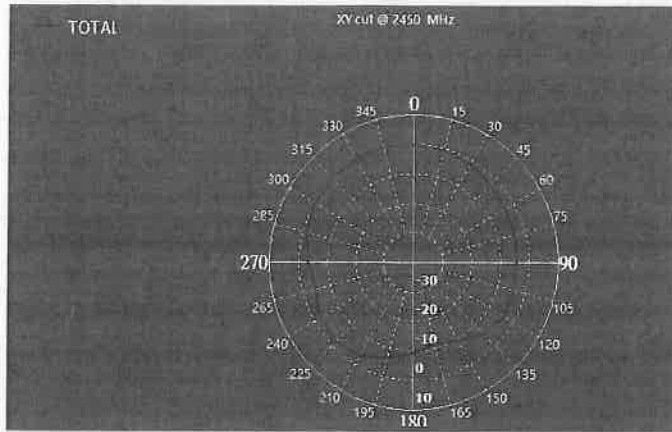




ISO9001 & ISO14001 & TS16949 CHILISIN ELECTRONICS CORP.

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. |



ISO9001 & ISO14001 & TS16949 CHILISIN ELECTRONICS CORP.

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 |



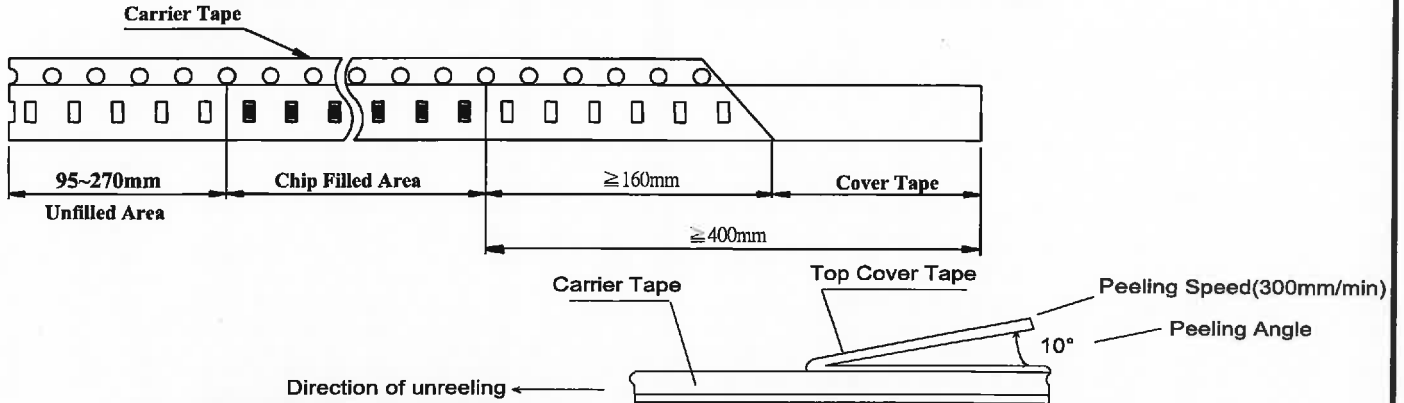
ISO9001 & ISO14001 & TS16949 CHILISIN ELECTRONICS CORP.

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.

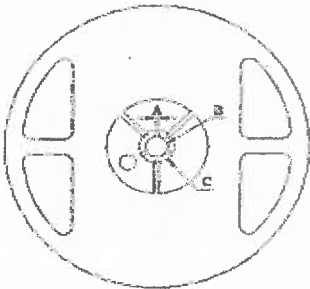


11.2 Packaging Quantity

| TYPE | BULK | PCS/REEL |
|----------|------|----------|
| BTCA3216 | X | 3000 |

11.3 Reel Dimensions in mm

Unit:mm



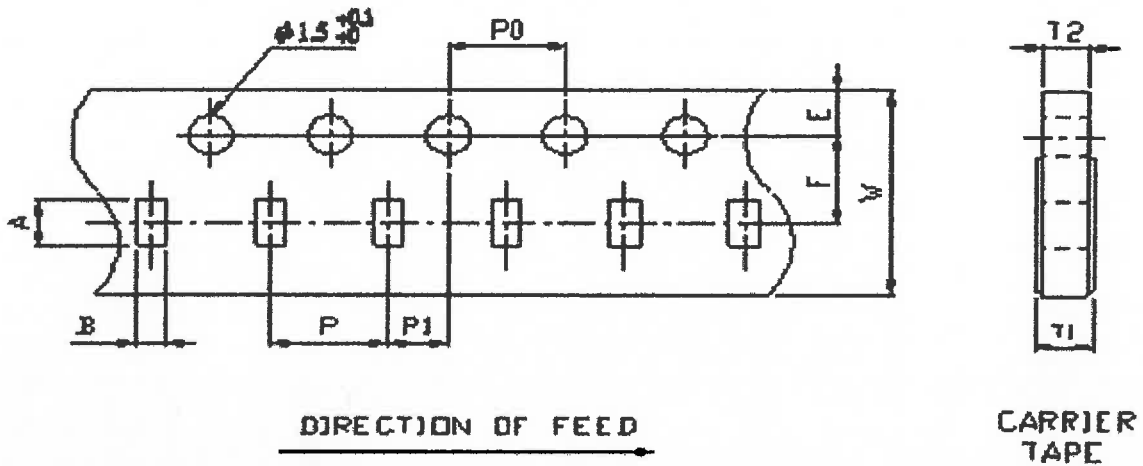
| Reel Type / Tape | Wa | M | A | B | C | D |
|-----------------------|---------------------|---------------------|---------------------|----------------------|----------------------|----------------------|
| 7" reel for 8 mm tape | 9.0 ^{±0.5} | 178 ^{±2.0} | 2.0 ^{±0.5} | 13.5 ^{±0.5} | 21.0 ^{±0.5} | 60.0 ^{±1.0} |



ISO9001 & ISO14001 & TS16949 CHILISIN ELECTRONICS CORP.

Chip Series Specification

11.4 Tape Dimensions in mm



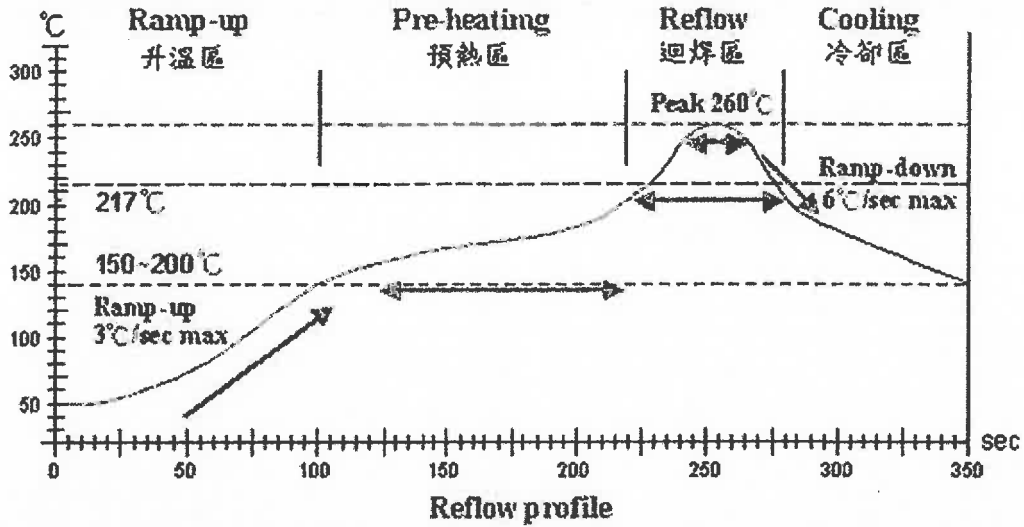
| Packaging | Dimensions (mm) | | | | | | | | | | |
|---------------|-----------------|-----------|-----------|-----------|-----------|-------------|-----------|-----------|-----------|------------|-----------|
| | A. | B. | W. | E. | F. | T1. | T2. | P. | P0. | 10xP0. | P1. |
| Carrier Tape. | 3.50±0.20 | 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.



ISO9001 & ISO14001 & TS16949 CHILISIN ELECTRONICS CORP.

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 | 冷却區 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