# EMI Common Mode Choke

## BWCC Series

### Overview

An EMI common mode choke (CMC) for power lines is a passive component specifically designed to suppress electromagnetic interference (EMI) in power supply circuits
A full series of common mode choke is designed for excellent noise attenuation with compact sizing for use in wide range of applications. Both standard series and custom designs are available.

### Benefits

1. EMI/RFI Suppression
2. Miniature SMD type common mode filter for fully automated assembly
3. Excellent solderability

### Applications

1. USB line for personal computers and peripheral
2. IEEE 1394 line for personal computers, DVC, STB
3. LVDS, panel line for liquid display panels, graph card,etc

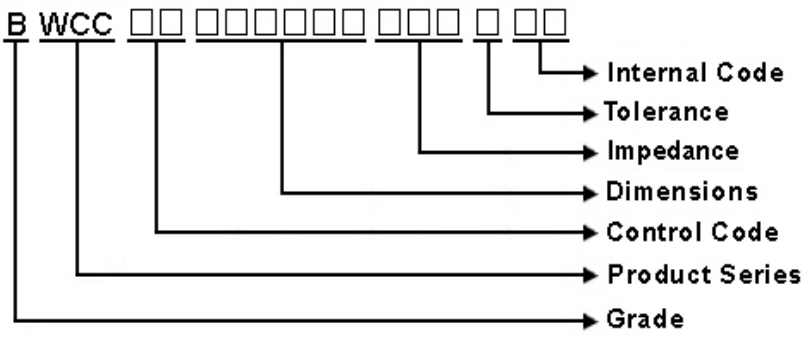
### Product Information

| Series | Size Code (JIS/EIA) | Impedance(Ω) |
|---|---|---|
| BWCC | 2012/0805 | 30 ~ 260 |

# BWCC00201208 Series Specification

## 1 Scope:
This specification applies to BWCC Wire Wound Common Mode Choke Coil

## 2 Part Numbering:




## 3 Rating:

Operating Temperature: - 40℃ ~ 105℃
(Including self - temperature rise)

Storage Temperature: - 40℃ ~ 105℃
(The storage temperature range is for after the assembly)

## 4 Marking:

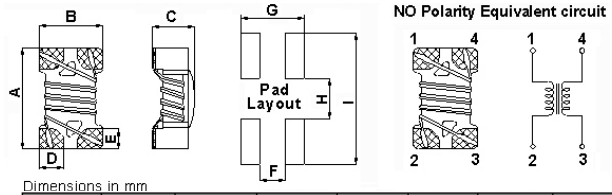
**No Marking**

## 5 Standard Testing Condition

| | Unless otherwise specified | In case of doubt |
|---|---|---|
| Temperature | Ordinary Temperature(15 to 35℃) | 20 to 30℃ |
| Humidity | Ordinary Humidity(25 to 85% RH) | 50 to 80 %RH |

# BWCC00201208 Series Specification

## 6 Configuration and Dimensions and Unit Weight:




Dimensions in mm

| TYPE | A | B | C | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|---|
| 201212 | 2.0±0.2 | 1.2±0.2 | 0.8±0.2 | 0.50 | 0.40 | 0.5 | 1.27 | 1.1 | 2.6 |

Net Weight (grms)

| SIZE CODE | Net Weight (grms) |
|---|---|
| 201212 | 0.008 (typ.) |

## 7 Electrical Characteristics:

| Part No. | Z (Ω) | RDC (Ω)Max. | IDC (mA) | Rated Voltage (Vdc) | Withstanding Voltage (Vdc) | Insulation Resistance (MΩ)(min) | Tolerance (±%) | Test Freq. (MHz) |
|---|---|---|---|---|---|---|---|---|
| BWCC00201208300□02 | 30 | 0.2 | 1300 | 50 | 125 | 10 | 20 | 100 |
| BWCC00201208420□02 | 42 | 0.2 | 1300 | 50 | 125 | 10 | 20 | 100 |
| BWCC00201208670□02 | 67 | 0.25 | 1200 | 50 | 125 | 10 | 20 | 100 |
| BWCC00201208900□02 | 90 | 0.27 | 1000 | 50 | 125 | 10 | 20 | 100 |
| BWCC00201208121□02 | 120 | 0.3 | 900 | 50 | 125 | 10 | 20 | 100 |
| BWCC00201208181□02 | 180 | 0.4 | 700 | 50 | 125 | 10 | 20 | 100 |
| BWCC00201208261□02 | 260 | 0.6 | 700 | 50 | 125 | 10 | 20 | 100 |

**NOTE: □-tolerance M=±20%**

1.Operating temperature range －４０℃～１０５℃(Including self - temperature rise)

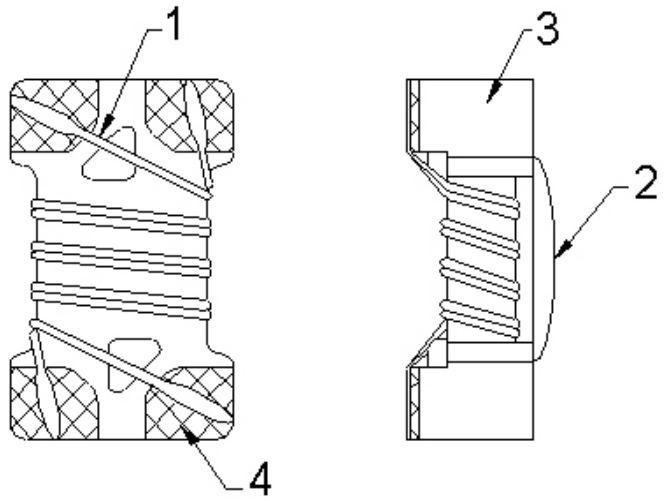
2.RDC: SINGLE WIRE TEST VALUE

3.IDC for Inductance drop 10% from its value without current.

# BWCC00201208 Series Specification

## 8 BWCC00201208 Series

### 8.1 Construction:




### 8.2 Material List:

| NO | PART | MATERIAL |
|---|---|---|
| 1 | WIRE | Grade 180 |
| 2 | EPOXY | UV GLUE |
| 3 | CORE | FERRITE CORE |
| 4 | TERMINAL | Ag/Cu/Ni/Sn |

# BWCC00201208 Series Specification

## 9 Common Mode Choke / RELIABILITY TEST

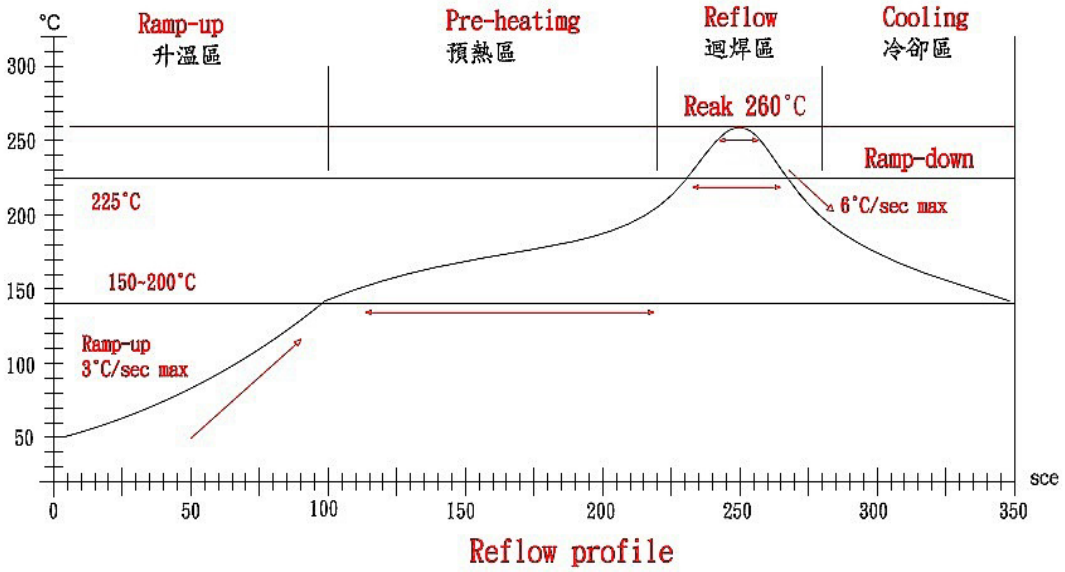
### 1-1.Environmental Performance

| No | Item | Specification | Test Method |
|---|---|---|---|
| 1-1-1 | Temperature Cycle | Appearance: No Damage<br>Impedance: within±20% of initial value | One cycle:<br>Step / Temperature (℃) / Time (min)<br>1 / -40±3 / 30<br>2 / 25±2 / 3<br>3 / 105±3 / 30<br>4 / 25±2 / 3<br>Total: 5 cycles<br>Measured After Exposure in The Room Condition For 1hrs |
| 1-1-2 | High Temperature Resistance | | Temperature: 105±3℃<br>Time: 1000Hrs<br>Measured After Exposure In The Room Condition For 1Hrs |
| 1-1-3 | Low Temperature Resistance | | Temperature: -40±3℃<br>Time: 1000Hrs<br>Measured After Exposure In The Room Condition For 1Hrs |
| 1-1-4 | Humidity Load Life | There should be no evidence of short or open circle | Temperature: 40±2℃<br>Relative Humidity: 90~95%<br>Load: Allowed DC Current<br>Time: 96Hrs |

### 1-2.Mechanical Performance

| No | Item | Specification | Test Method |
|---|---|---|---|
| 1-2-1 | Resistance To Soldering Heat | Appearance: No Damage | 1. The device should be reflow soldered on PCB (peak 260℃±5℃ for 10 seconds)<br>2. Solder Composition: Sn/Ag3.0/Cu0.5<br>3. Test time: 6 minutes |
| 1-2-2 | Solder ability | The electrodes shall be at least 95% covered with new solder coating | 1. Pre-Heating: 150℃,1min.<br>2. Solder Composition: Sn/Ag3.0/Cu0.5<br>3. Solder Temperature: 245±5℃.<br>4. Immersion Time: 4±1 sec. |
| 1-2-3 | Commponent Adhesion (Push Test) | 1 Lbs. For 1210 Size<br>2 Lbs. For other | The device should be reflow soldered (245±5℃ For 10 seconds) to a tinned copper substrate. A force guauge should be applied to the side of the component.<br>The device must withstand a minimum force of 2 pounds without a failure of the termination attached to component |

# BWCC00201208 Series Specification




Reflow profile

Lead-Free(LF)標準溫度分析範圍 Refer to J-STD-020C

| 管制項目 Item. | 升溫區 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℃ | 150℃ ~ 200℃ | Above 217℃ | 260±5℃ | Peak Temp.~150℃ |
| 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:

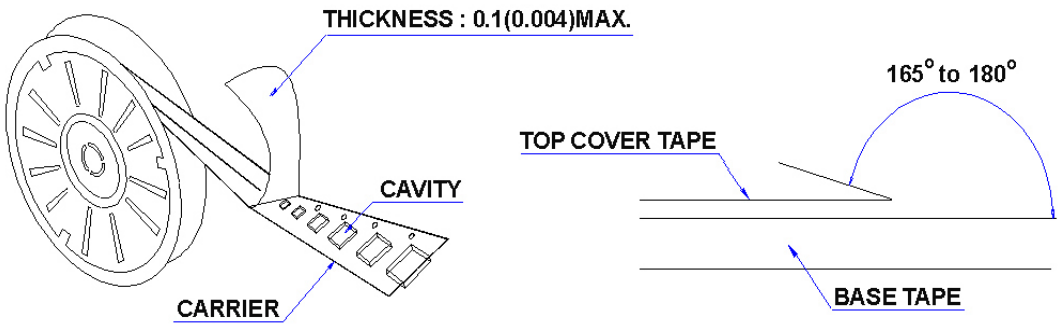
1. Re-flow possible times : within 3 times
2. Nitrogen adopted is recommendes while in re-flow
3. Products can only be soldered with reflow

# BWCC00201208 Series Specification

## 10 Packaging:

### 10.1 Packaging -Cover Tape

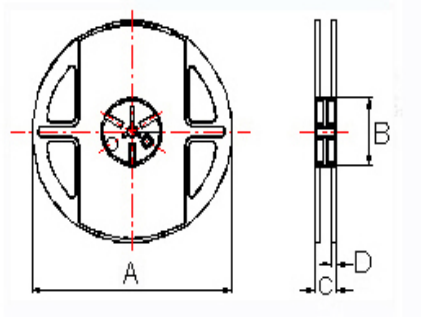
The force for tearing off cover tape is 10 to 100 grams in the arrow direction.




### 10.2 Packaging Quantity

| TYPE | PCS/REEL |
|---|---|
| 201208 | 2000 |

### 10.3 Reel Dimensions



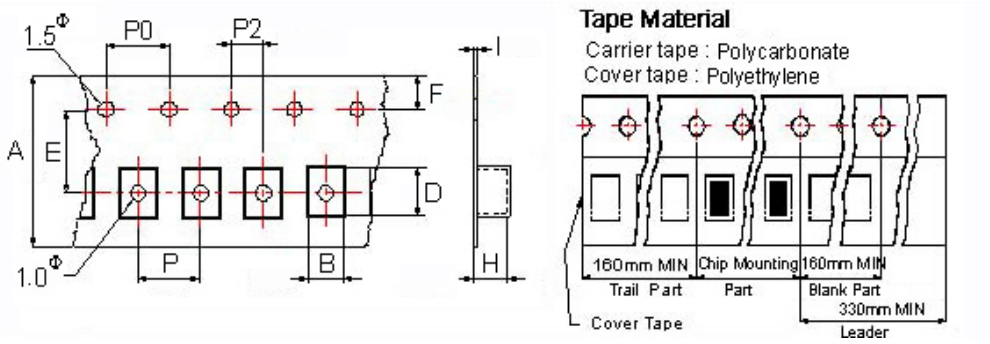

Dimensions in mm

| TYPE | A | B | C | D |
|---|---|---|---|---|
| 201208 | 178±1 | 60±0.5 | 12±0.5 | 1.5±0.5 |

# BWCC00201208 Series Specification

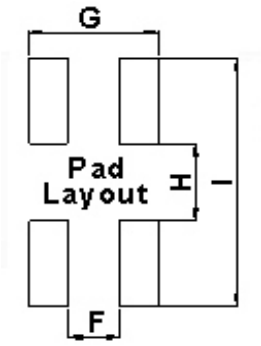
## 10 Packaging:

### 10.4 Tape Dimensions in mm




| TYPE | A | B | D | E | F | H | I | P | P0 | P2 |
|---|---|---|---|---|---|---|---|---|---|---|
| 201208 | 8 | 1.4 | 2.3 | 3.5 | 1.75 | 1.1 | 0.2 | 4 | 4 | 2 |

## 11 Recommended Land Pattern:




Dimensions in mm

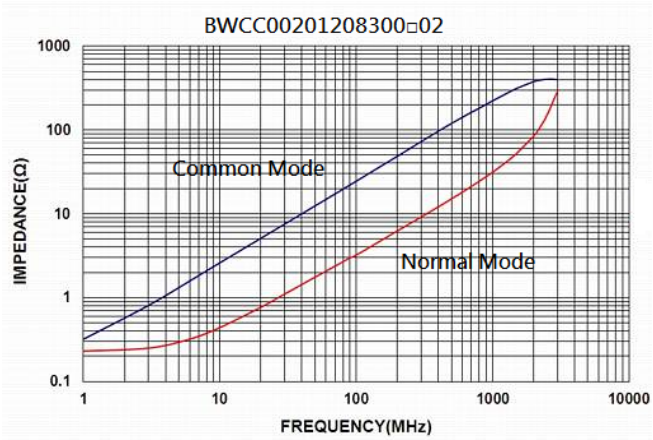
| TYPE | F(In/mm) | G(In/mm) | H(In/mm) | I(In/mm) |
|---|---|---|---|---|
| 201208 | 0.020/0.5 | 0.05/1.27 | 0.03/1.1 | 0.10/2.6 |

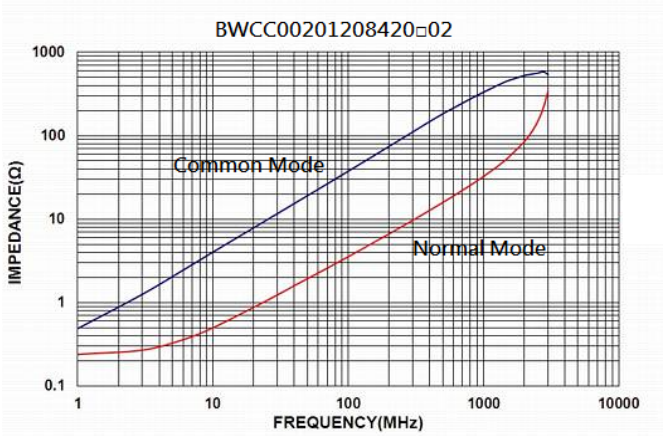
## 12 Note:

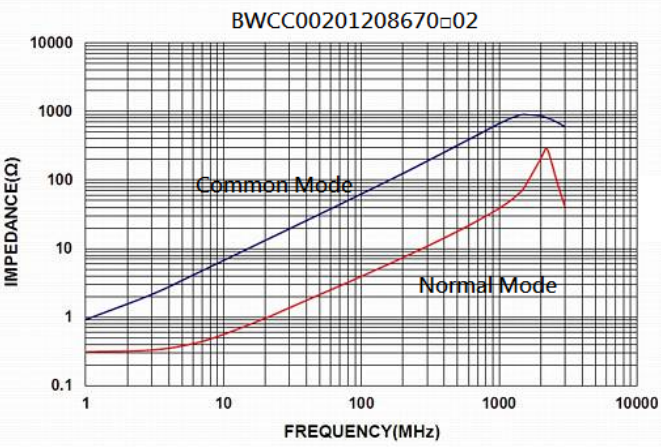
1. Please make sure that your product has been evaluated and confirmed against your specifications when our product is mounted to your product.
2. Do not knock nor drop.
3. All the items and parameters in this product specification have been prescribed on the premise that our product is used for the purpose,under the condition and in the environment agreed upon between you and us. You are requested not to use our product deviating from such agreement.
4. The storage period is less than 12 months. Be sure to follow the storage conditions (Temperature: 5 to 40°C, Humidity: 10 to 75% RHor less).
   If the storage period elapses, the soldering of the terminal electrodes may deteriorate.
5. Do not use or store in locations where there are conditions such as gas corrosion (salt, acid, alkali, etc.).
6. The moisture sensitivity level (MSL) of products is classified as level 1.

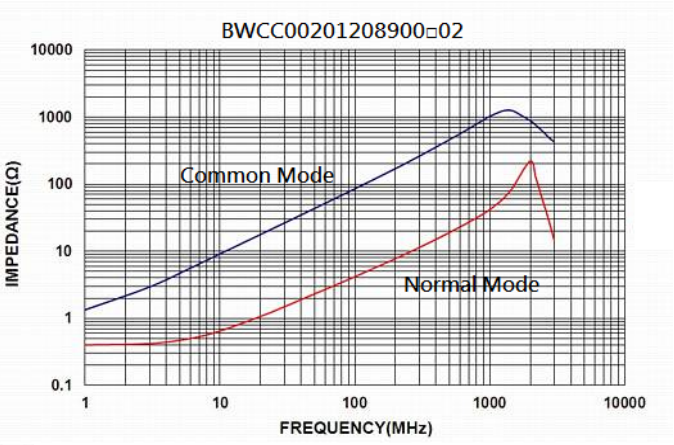
# BWCC00201208 Series Specification

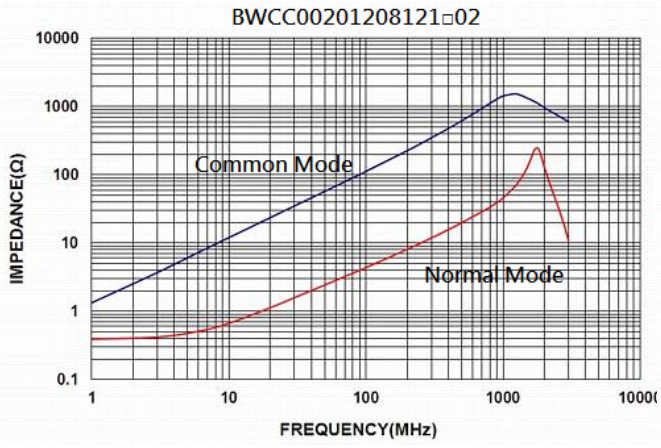
## 13 Graph:

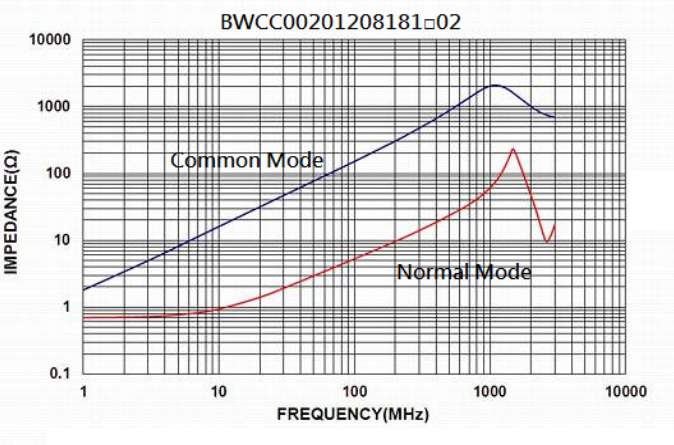


# BWCC00201208 Series Specification