# ***Data Sheet***

| | |
|---|---|
| **Customer:** | |
| **Product:** | **Multilayer Array Chip Common Mode Filter—CMA Series** |
| **Sizes.:** | **0805 / 1206** |
| **Issued Date:** | **03-Jan-18** |
| **Edition:** | **REV.A** |


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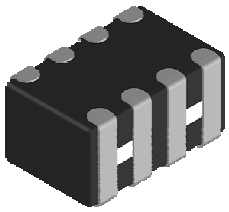
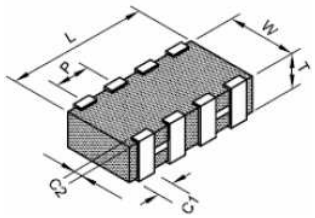
# Multilayer Array Chip Common Mode Filter



## ■Features

– Powerful components with composite co-fired material to solve EMI problem for high speed differential signal transmission line as USB, and LVDS, without distortion to high speed signal transmission.

## ■Dimensions




| Type | Sizes (Inch) | L (mm) | W (mm) | T (mm) | P (mm) | C1 (mm) | C2 (mm) |
|---|---|---|---|---|---|---|---|
| CMA05B | 0805 | 2.00±0.20 | 1.25±0.20 | 1.00±0.10 | 0.50±0.20 | 0.25±0.20 | 0.25±0.20 |
| CMA06B | 1206 | 3.20±0.20 | 1.60±0.20 | 1.00±0.10 | 0.80±0.10 | 0.45±0.15 | 0.30±0.20 |

## ■Part Numbering

| CMA | 05B | Y | T | 900 |
|---|---|---|---|---|
| Product Type | Dimensions LxW | Impedance Tolerance | Packaging Code | Impedance |
| | 05B: 0805<br>06B: 1206 | Y: ±25% | T: Taping Reel | 900: 90Ω<br>121: 120Ω |

## ■Standard Electrical Specifications

CMA05B Type

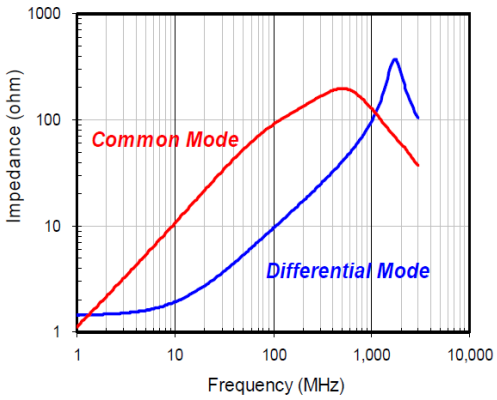
| Impedance (Ω) | Tolerance | Test Condition (MHz) | DCR (Ω) max. | Rated Current (mA) max. | Rated Voltage Vdc (V) | Withstanding Voltage (V) | Insulation Resistance (MΩ) min. |
|---|---|---|---|---|---|---|---|
| 90 | ±25% | 100 | 0.60 | 400 | 10 | 25 | 200 |
| 120 | ±25% | 100 | 0.60 | 300 | 10 | 25 | 200 |

CMA06B Type

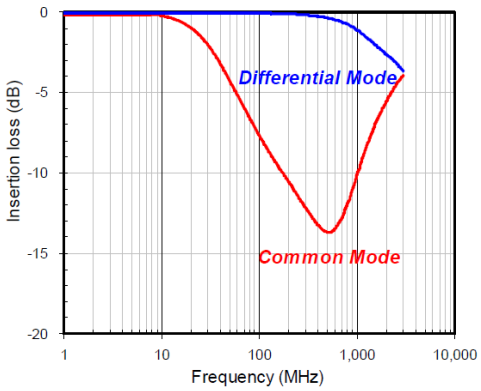
| Impedance (Ω) | Tolerance | Test Condition (MHz) | DCR (Ω) max. | Rated Current (mA) max. | Rated Voltage Vdc (V) | Withstanding Voltage (V) | Insulation Resistance (MΩ) min. |
|---|---|---|---|---|---|---|---|
| 67 | ±25% | 100 | 0.40 | 400 | 10 | 25 | 200 |
| 90 | ±25% | 100 | 0.40 | 400 | 10 | 25 | 200 |
| 120 | ±25% | 100 | 0.40 | 300 | 10 | 25 | 200 |
| 180 | ±25% | 100 | 0.50 | 300 | 10 | 25 | 200 |
| 220 | ±25% | 100 | 0.50 | 300 | 10 | 25 | 200 |

## Characteristics

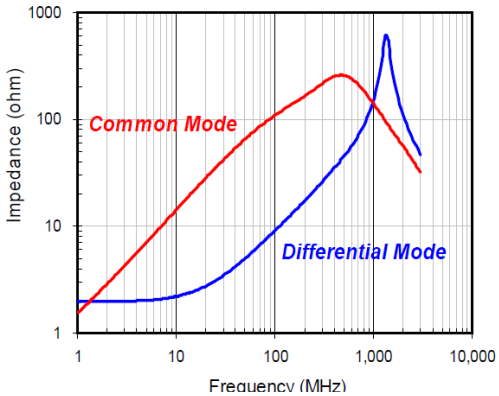
CMA05BYT900 Impedance vs. Frequency



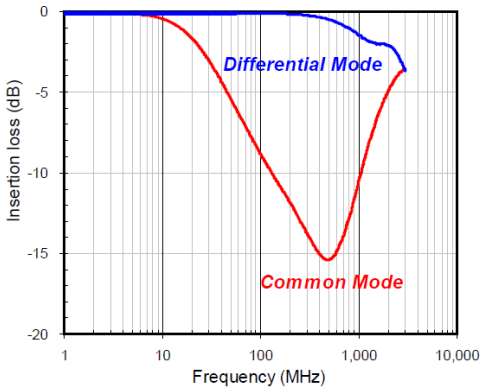

CMA05BYT900 Insertion Loss vs. Frequency



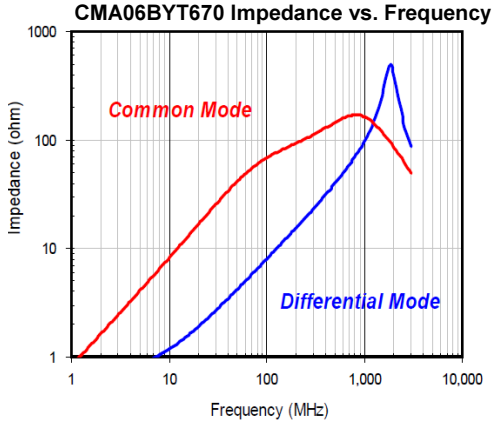

CMA05B121 Impedance vs. Frequency



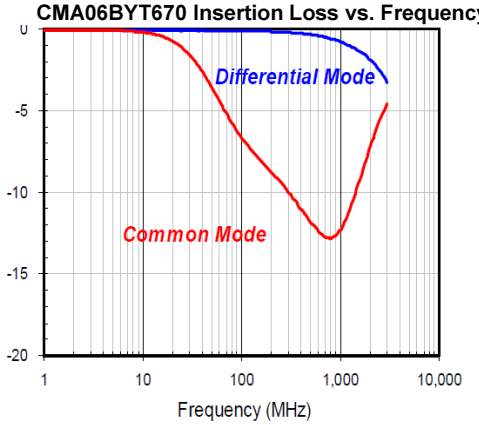

CMA05B121 Insertion Loss vs. Frequency



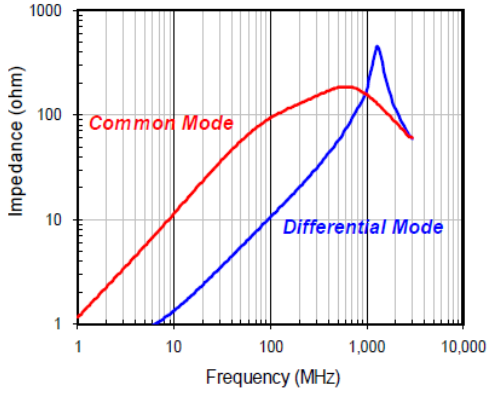

CMA06BYT670 Impedance vs. Frequency



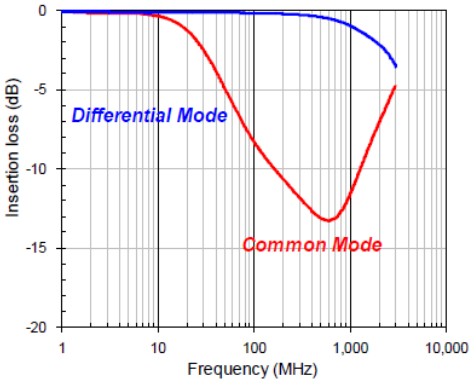

CMA06BYT670 Insertion Loss vs. Frequency




CMA06BYT900 Impedance vs. Frequency

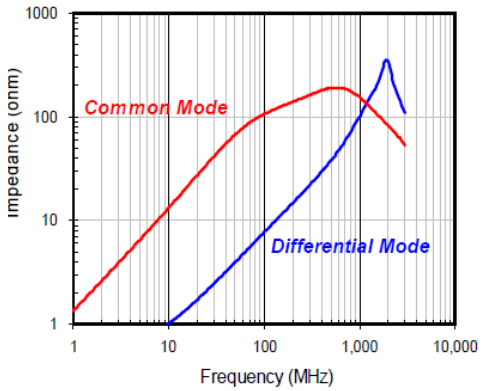



CMA06BYT900 Insertion Loss vs. Frequency

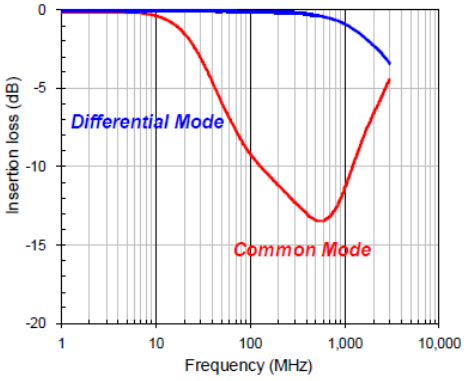


## Characteristics

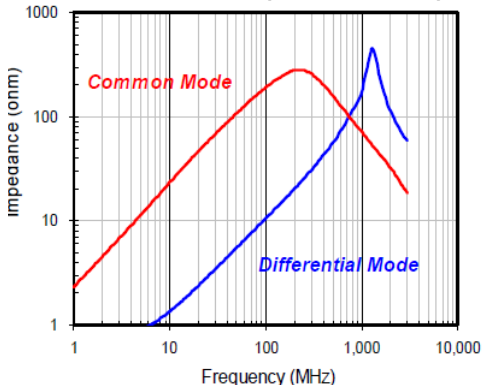
CMA06BYT121 Impedance vs. Frequency



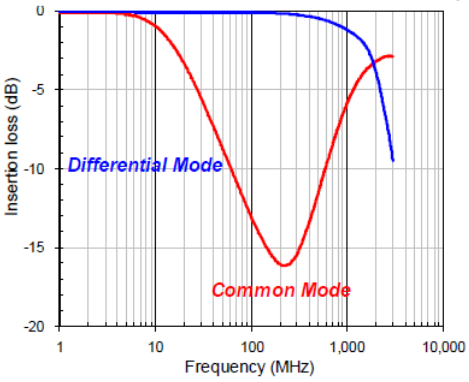

CMA06BYT121 Insertion Loss vs. Frequency



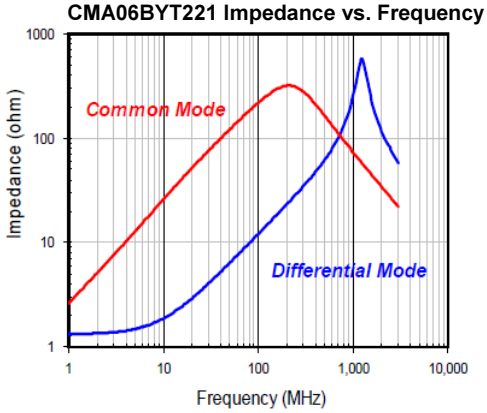

CMA06BYT181 Impedance vs. Frequency



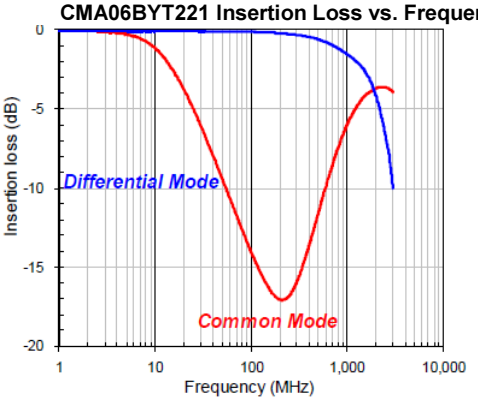

CMA06BYT181 Insertion Loss vs. Frequency




CMA06BYT221 Impedance vs. Frequency




CMA06BYT221 Insertion Loss vs. Frequency



## ■Environmental Characteristics

Electrical Performance Test

| Items | Requirement | Test Conditions |
|---|---|---|
| Impedance | Refer to standard electrical characteristic spec. | Agilent E4991A RF Impedance / Material Analyzer |
| DCR | | HP4338 Milliohmmeter |

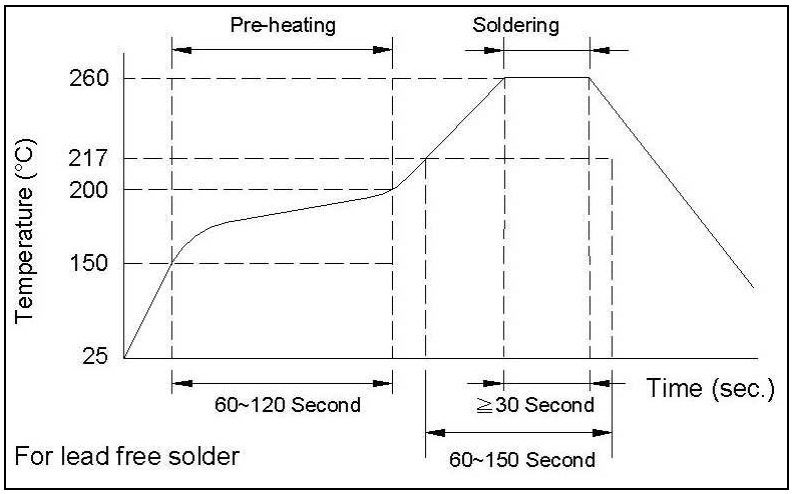
Mechanical Performance Test

| Items | Requirement | Test Conditions |
|---|---|---|
| Temperature Cycle | No mechanical damage<br>Impedance should be within ±20% of the initial value | Temperature: -40~ +85℃<br>Cycle : 100cycles<br>Dwell time: 30minutes<br>Measurement : at ambient temperature 24 hrs after test completion |
| Operational Life | | Temperature: 85℃± 5℃<br>Test time: 1000hrs<br>Apply current : full rated current<br>Measurement : at ambient temperature 24 hrs after test completion |
| Biased Humidity | | Temperature: 40±2℃<br>Humidity : 90~95% RH<br>Test time: 1000hrs<br>Apply current : full rated current<br>Measurement : at ambient temperature 24 hrs after test completion |
| Resistance to Solder Heat | Impedance should be within ±20% of the initial value<br>No mechanical damage<br>More than 95 % of terminal electrode should be covered with new solder | Solder temperature: 260 ± 5℃<br>Flux: Rosin<br>DIP time: 10 ±1 sec |
| Steam Aging Test | More than 95 % of terminal electrode should be covered with new solder | Temperature : 93 ± 2℃<br>Test time : 4 hrs<br>Solder temperature : 235 ± 5℃<br>Flux : Rosin<br>DIP time : 5 ± 1 sec |

**■Storage Temperature: 18~28°C; Humidity < 80%RH**

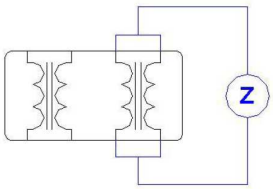
**■Operating Temperature: -40~+85°C**

## ■Recommended Soldering Conditions

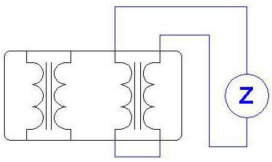


## ■Measuring Circuits

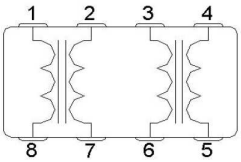
Common Mode

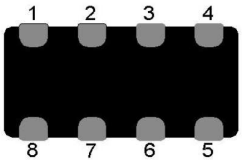



Differential Mode



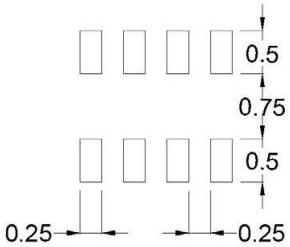

## ■Circuit Configuration



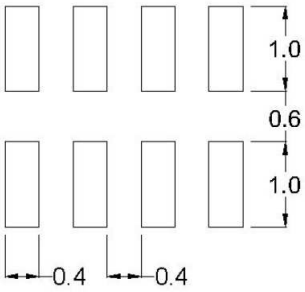




## ■Recommend Land Pattern unit: mm

CMA05B

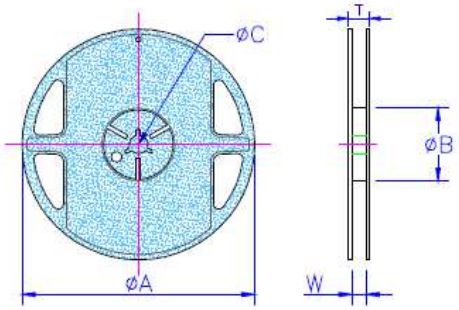



CMA06B



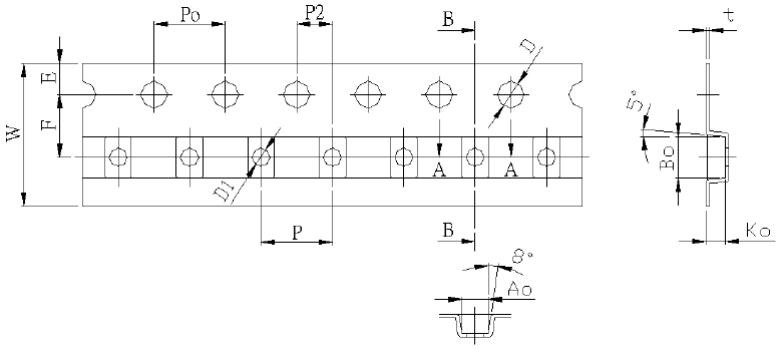
## ■Packaging

Packaging Quantity & Reel Specifications




| Type | ØA (mm) | ØB (mm) | ØC (mm) | W (mm) | T (mm) | Quantity (EA) |
|---|---|---|---|---|---|---|
| CMA05B | 178±1 | 60+0.5/-0 | 13.0±0.2 | 9.0±0.5 | 12.0±0.15 | 3000 |
| CMA06B | 178±1 | 60+0.5/-0 | 13.0±0.2 | 9.0±0.5 | 12.0±0.15 | 3000 |

Emboss Plastic Tape Specifications




| Type | A0 (mm) | B0 (mm) | W (mm) | E (mm) | F (mm) | P (mm) | P0 (mm) | P2 (mm) | D (mm) | D1 (mm) | K0 (mm) | t (mm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CMA05B | 1.40±0.10 | 2.30±0.10 | 8.0±0.10 | 1.75±0.10 | 3.50±0.05 | 4.00±0.10 | 4.00±0.10 | 2.00±0.05 | 1.5+010/-0 | 1.00±0.10 | 1.13±0.10 | 0.22±0.05 |
| CMA06B | 1.80±0.10 | 3.40±0.10 | 8.0±0.10 | 1.75±0.10 | 3.50±0.05 | 4.00±0.10 | 4.00±0.10 | 2.00±0.05 | 1.55±0.05 | 1.00±0.05 | 1.25±0.10 | 0.22±0.05 |