

## WIRE WOUND CHIP COMMON MODE COIL 片式共模绕线电感

### ● FEATURES 特性

- 1.High common mode impedance at high frequency effects excellent noise suppression performance.  
高频共模阻抗高，噪声抑制性能优良。
- 2.20Ω~2000Ω are optional for different noise level and signal frequency  
对于不同的噪声电频和信号频率，选择20Ω~2000Ω阻抗。



### ● APPLICATIONS 用途

- 1.USB 2.0 line for personal computers and peripheral  
电脑和外围设备的USB 2.0线路。
- 2.IEEE 1394 line for personal computers, DVC, STB  
用于计算机、DVC、机顶盒的IEEE 1394线路。
- 3.LVDS, panel line for liquid display panels, graph card,etc.  
LVDS，用于液体显示面板的面板线，图形卡等。
- 3.USB 3.0 line or HDMI2.0 for personal computers and peripheral  
电脑和外围设备的USB 3.0或HDMI2.0线路。

### ● PART NUMBERING SYSTEM 品名系统

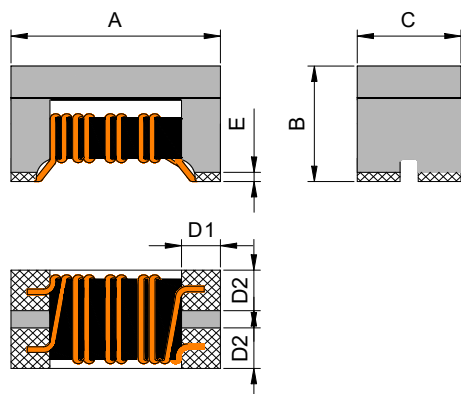
CMC 3216 S - 102 - 2P - T  
A B C D E F

A: Type 型号 B: External Dimensions 外形尺寸 A\*C

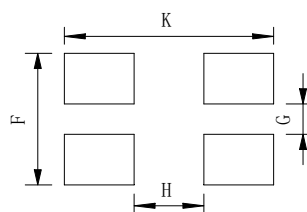
C: Material type 材料类型 D: Impedance Value 阻抗值 102 = 1000Ω

E: Number of line 2P : 2-Line 双线 F: Packaging : T=Taping and reel

### ● SHAPES AND DIMENSIONS 外形尺寸 (Unit:mm)



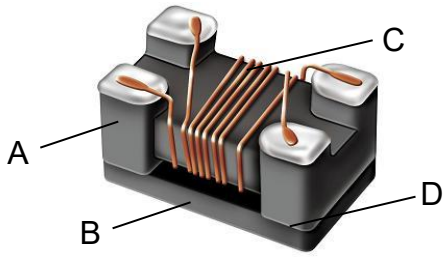
### Recommended Land Pattern



| TYPE(型号) | A        | B       | C       | D1       | D2       | E        | F       | G       | H       | K        |
|----------|----------|---------|---------|----------|----------|----------|---------|---------|---------|----------|
| CMC1210  | 1.25±0.2 | 0.8±0.1 | 1.0±0.2 | 0.33 Ref | 0.36 Ref | 0.10 Max | 1.0 Ref | 0.3 Ref | 0.5 Ref | 1.55 Ref |
| CMC2012  | 2.0±0.2  | 1.2±0.2 | 1.2±0.2 | 0.5 Ref  | 0.45 Ref | 0.17 Max | 1.2 Ref | 0.4 Ref | 0.8 Ref | 2.6 Ref  |
| CMC3216  | 3.2±0.2  | 2.0±0.2 | 1.6±0.2 | 0.7 Ref  | 0.6 Ref  | 0.22 Max | 1.6 Ref | 0.4 Ref | 1.6 Ref | 3.7 Ref  |
| CML3416  | 3.4±0.2  | 2.0±0.2 | 1.6±0.2 | 0.7 Ref  | 0.6 Ref  | 0.22Max  | 1.7 Ref | 0.5 Ref | 1.7 Ref | 3.7 Ref  |
| CMC3225  | 3.2±0.2  | 2.2±0.2 | 2.5±0.2 | 0.7 Ref  | 0.7Ref   | 0.3Max   | 3.5Ref  | 0.6Ref  | 1.6 Ref | 4.4Ref   |
| CMC4532  | 4.5±0.2  | 2.8±0.2 | 3.2±0.2 | 0.8 Ref  | 1.1 Ref  | 0.5 Max  | 3.2 Ref | 1.0 Ref | 2.7 Ref | 5.1 Ref  |
| CML4532  | 4.5±0.2  | 2.8±0.2 | 3.2±0.2 | 0.8 Ref  | 1.1 Ref  | 0.5 Max  | 3.2 Ref | 1.0 Ref | 2.7 Ref | 5.1 Ref  |



● **STRUCTURE AND MATERIAL**



| Part | Components | Material                          |
|------|------------|-----------------------------------|
| A    | Core       | Ferrite                           |
| B    | I Core     | Ferrite                           |
| C    | Wire       | Polyurethane enameled copper wire |
| D    | Epoxy      | Epoxy resin                       |

● **ELECTRICAL CHARACTERISTICS**

1. Operating temperature range : -40°C~105°C(Including self - temperature rise)
2. Storage temperature range (packaging conditions): -10°C~+40°C and RH 70% (Max.)

● **TEST AND MEASUREMENT PROCEDURES**

1. Common Mode Impedance( $\Omega$ )

Test equipment: Keysight E4991B / Agilent 4787A or equivalent

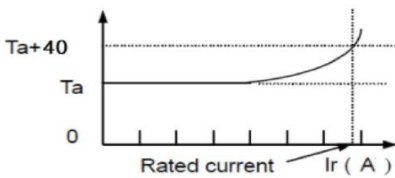
2. DC Resistance (DCR)

Test equipment: Agilent34420A / Agilent 4338B or equivalent

3. Rated Current (Irms)

Irms is direct electric current as chip surface temperature rose just 20 or 40 against chip initial surface temperature ( $T_a$ ),

$$\text{Rated Current} \geq 1A \Delta T \ 40^\circ C \ \text{Max}$$



4. Insulation Resistance

Test equipment: Chroma or equivalent TH2683A / ZX6583

● **RECOMMENDED SOLDERING TECHNOLOGIES**

Re-flowing Profile

Preheat condition: 150~200 /60~120sec.

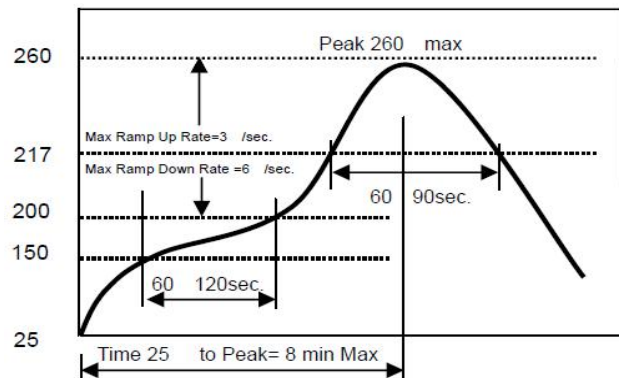
Allowed time above 217C: 60~90sec.

Max temp: 260

Max time at max temp: 10sec

Solder paste: Sn/3.0Ag/0.5Cu

Allowed Reflow time: 2 times max



● **SPECIFICATION TABLE:**

CMC1210S Series

| Part No.          | Common Mode Impedance( $\Omega$ ) | Test Frequency (MHz) | DCR ( $\Omega$ ) Max | Max. Rated Current (mA) | Rated Voltage (Vdc) | Insulation Resistance ( $M\Omega$ ) Min. |
|-------------------|-----------------------------------|----------------------|----------------------|-------------------------|---------------------|--|
| CMC1210S-200-2P-T | 20 $\pm$ 25%                      | 100                  | 0.15                 | 500                     | 50                  | 10                                       |
| CMC1210S-350-2P-T | 35 $\pm$ 25%                      | 100                  | 0.18                 | 430                     | 50                  | 10                                       |
| CMC1210S-600-2P-T | 60 $\pm$ 25%                      | 100                  | 0.30                 | 400                     | 50                  | 10                                       |
| CMC1210S-900-2P-T | 90 $\pm$ 25%                      | 100                  | 0.30                 | 400                     | 50                  | 10                                       |
| CMC1210S-121-2P-T | 120 $\pm$ 25%                     | 100                  | 0.40                 | 260                     | 50                  | 10                                       |
| CMC1210S-161-2P-T | 160 $\pm$ 25%                     | 100                  | 0.40                 | 260                     | 50                  | 10                                       |
| CMC1210S-181-2P-T | 180 $\pm$ 25%                     | 100                  | 0.40                 | 250                     | 50                  | 10                                       |
| CMC2012S-201-2P-T | 200 $\pm$ 25%                     | 100                  | 0.40                 | 250                     | 50                  | 10                                       |

CMC1210U Series

| Part No.          | Common Mode Impedance( $\Omega$ ) | Test Frequency (MHz) | DCR ( $\Omega$ ) Max | Max. Rated Current (mA) | Rated Voltage (Vdc) | Insulation Resistance ( $M\Omega$ ) Min. |
|-------------------|-----------------------------------|----------------------|----------------------|-------------------------|---------------------|--|
| CMC1210U-140-2P-T | 14 $\pm$ 25%                      | 100                  | 0.12                 | 600                     | 50                  | 10                                       |
| CMC1210U-350-2P-T | 35 $\pm$ 25%                      | 100                  | 0.30                 | 400                     | 50                  | 10                                       |
| CMC1210U-500-2P-T | 50 $\pm$ 25%                      | 100                  | 0.30                 | 300                     | 50                  | 10                                       |
| CMC1210U-600-2P-T | 60 $\pm$ 25%                      | 100                  | 0.30                 | 300                     | 50                  | 10                                       |
| CMC1210U-900-2P-T | 90 $\pm$ 25%                      | 100                  | 0.40                 | 300                     | 50                  | 10                                       |

CMC2012S Series

| Part No.          | Common Mode Impedance( $\Omega$ ) | Test Frequency (MHz) | DCR ( $\Omega$ ) Max | Max. Rated Current (mA) | Rated Voltage (Vdc) | Insulation Resistance ( $M\Omega$ ) Min. |
|-------------------|-----------------------------------|----------------------|----------------------|-------------------------|---------------------|--|
| CMC2012S-300-2P-T | 30 $\pm$ 25%                      | 100                  | 0.20                 | 450                     | 50                  | 10                                       |
| CMC2012S-800-2P-T | 80 $\pm$ 25%                      | 100                  | 0.30                 | 400                     | 50                  | 10                                       |
| CMC2012S-900-2P-T | 90 $\pm$ 25%                      | 100                  | 0.30                 | 400                     | 50                  | 10                                       |

|                   |          |     |      |     |    |    |
|-------------------|----------|-----|------|-----|----|----|
| CMC2012S-121-2P-T | 120±25%  | 100 | 0.30 | 400 | 50 | 10 |
| CMC2012S-181-2P-T | 180±25%  | 100 | 0.35 | 350 | 50 | 10 |
| CMC2012S-201-2P-T | 200±25%  | 100 | 0.35 | 330 | 50 | 10 |
| CMC2012S-260-2P-T | 260±25%  | 100 | 0.40 | 300 | 50 | 10 |
| CMC2012S-371-2P-T | 370±25%  | 100 | 0.45 | 300 | 50 | 10 |
| CMC2012S-801-2P-T | 800±25%  | 100 | 0.75 | 300 | 50 | 10 |
| CMC2012S-901-2P-T | 900±25%  | 100 | 0.80 | 150 | 50 | 10 |
| CMC2012S-102-3P-T | 1000±25% | 100 | 0.80 | 150 | 50 | 10 |

#### CMC2012U Series

| Part No.          | Common Mode Impedance(Ω) | Test Frequency (MHz) | DCR (Ω) Max | Max. Rated Current (mA) | Rated Voltage (Vdc) | Insulation Resistance (MΩ) Min. |
|-------------------|--------------------------|----------------------|-------------|-------------------------|---------------------|---------------------------------|
| CMC2012U-300-2P-T | 30±25%                   | 100                  | 0.20        | 400                     | 50                  | 10                              |
| CMC2012U-600-2P-T | 60±25%                   | 100                  | 0.30        | 300                     | 50                  | 10                              |
| CMC2012U-900-2P-T | 90±25%                   | 100                  | 0.30        | 300                     | 50                  | 10                              |
| CMC2012U-120-2P-T | 120±25%                  | 100                  | 0.35        | 330                     | 50                  | 10                              |

#### CMC3216S/L Series

| Part No.          | Common Mode Impedance(Ω) | Test Frequency (MHz) | DCR (Ω) Max | Max. Rated Current (mA) | Rated Voltage (Vdc) | Insulation Resistance (MΩ) Min. |
|-------------------|--------------------------|----------------------|-------------|-------------------------|---------------------|---------------------------------|
| CMC3216S-900-2P-T | 90±25%                   | 100                  | 0.30        | 370                     | 50                  | 10                              |
| CMC3216S-260-2P-T | 260±25%                  | 100                  | 0.50        | 310                     | 50                  | 10                              |
| CMC3216S-601-2P-T | 600±25%                  | 100                  | 0.80        | 260                     | 50                  | 10                              |
| CMC3216S-102-2P-T | 1000±25%                 | 100                  | 1.00        | 230                     | 50                  | 10                              |
| CMC3216S-222-2P-T | 2200±25%                 | 100                  | 1.20        | 200                     | 50                  | 10                              |
| CMC3216S-242-2P-T | 2400±25%                 | 100                  | 1.20        | 200                     | 50                  | 10                              |
| CML3216S-600-2P-T | L:50uH~90uH<br>@100khz   | 100                  | 1.70        | 200                     | 50                  | 10                              |

### CMC3225S Series

| Part No.          | Common Mode Impedance( $\Omega$ ) | Test Frequency (MHz) | DCR ( $\Omega$ ) Max | Max. Rated Current (mA) | Rated Voltage (Vdc) | Insulation Resistance (M $\Omega$ ) Min. |
|-------------------|-----------------------------------|----------------------|----------------------|-------------------------|---------------------|--|
| CMC3225S-900-2P-T | 90 $\pm$ 25%                      | 100                  | 0.05                 | 1000                    | 50                  | 10                                       |
| CMC3225S-161-2P-T | 160 $\pm$ 25%                     | 100                  | 0.12                 | 680                     | 50                  | 10                                       |
| CMC3225S-271-2P-T | 270 $\pm$ 25%                     | 100                  | 0.13                 | 640                     | 50                  | 10                                       |
| CMC3225S-501-2P-T | 500 $\pm$ 25%                     | 100                  | 0.20                 | 1000                    | 50                  | 10                                       |
| CMC3225S-601-2P-T | 600 $\pm$ 25%                     | 100                  | 0.20                 | 1000                    | 50                  | 10                                       |
| CMC3225S-801-2P-T | 800 $\pm$ 25%                     | 100                  | 0.20                 | 1000                    | 50                  | 10                                       |
| CMC3225S-102-2P-T | 1000 $\pm$ 25%                    | 100                  | 0.30                 | 750                     | 50                  | 10                                       |
| CMC3225S-222-2P-T | 2200 $\pm$ 25%                    | 100                  | 0.30                 | 640                     | 50                  | 10                                       |
| CMC3225S-242-2P-T | 2400 $\pm$ 25%                    | 100                  | 0.30                 | 640                     | 50                  | 10                                       |
| CML3225B-510-2P-T | L:51 $\mu$ H + 50%/-30%           | 100kHz,0.1v          | 0.70                 | 200                     | 80                  | 10                                       |
| CML3225E-101-2P-T | L:51 $\mu$ H + 50%/-30%           | 100kHz,0.1v          | 1.50                 | 150                     | 80                  | 10                                       |

### CMC3225H Series

| Part No.          | Indutance( $\Omega$ ) | Test Frequency (MHz) | DCR ( $\Omega$ ) Max | Max. Rated Current (mA) | Rated Voltage (Vdc) | Insulation Resistance (M $\Omega$ ) Min. |
|-------------------|-----------------------|----------------------|----------------------|-------------------------|---------------------|--|
| CMC3225H-501-2P-T | 500 $\pm$ 25%         | 100                  | 0.10                 | 2000                    | 50                  | 10                                       |
| CMC3225H-102-2P-T | 1000 $\pm$ 25%        | 100                  | 0.10                 | 1500                    | 50                  | 10                                       |

### CML3416S Series

| Part No.                | Indutance( $\mu$ H) | Test Frequency (MHz) | DCR ( $\Omega$ ) Max | Max. Rated Current (mA) | Rated Voltage (Vdc) | Insulation Resistance (M $\Omega$ ) Min. |
|-------------------------|---------------------|----------------------|----------------------|-------------------------|---------------------|--|
| CML3416S-60 $\mu$ H.Min | 60 $\mu$ H Min      | 100KHZ,0.1v          | 1.70                 | 200                     | 50                  | 10                                       |

### CMC4532S Series

| Part No.          | Common Mode Impedance( $\Omega$ ) | Test Frequency (MHz) | DCR ( $\Omega$ ) Max | Max. Rated Current (mA) | Rated Voltage (Vdc) | Insulation Resistance (M $\Omega$ ) Min. |
|-------------------|-----------------------------------|----------------------|----------------------|-------------------------|---------------------|--|
| CMC4532S-900-2P-T | 90 $\pm$ 25%                      | 100                  | 0.05                 | 4000                    | 50                  | 10                                       |
| CMC4532S-121-2P-T | 120 $\pm$ 25%                     | 100                  | 0.07                 | 3000                    | 50                  | 10                                       |

|                    |                                    |     |      |      |    |    |
|--------------------|------------------------------------|-----|------|------|----|----|
| CMC4532S-201-2P-T  | 200±25%                            | 100 | 0.10 | 1500 | 50 | 10 |
| CMC4532H-231-2P-T  | 230±25%                            | 100 | 0.05 | 3500 | 50 | 10 |
| CMC4532S-331-2P-T  | 330±25%                            | 100 | 0.11 | 1500 | 50 | 10 |
| CMC4532S-601-2P-T  | 600±25%                            | 100 | 0.12 | 1500 | 50 | 10 |
| CMC4532H-601-2P-T  | 600±25%                            | 100 | 0.06 | 2500 | 50 | 10 |
| CMC4532S-801-2P-T  | 800±25%                            | 100 | 0.16 | 1000 | 50 | 10 |
| CMC4532H-102-2P-T  | 1000±25%                           | 100 | 0.11 | 2100 | 50 | 10 |
| CMC4532S-142-2P-T  | 1400±25%                           | 100 | 0.20 | 700  | 50 | 10 |
| CMC4532S-1000Ω/Min | 1000ΩMin<br>L:51uH+50%/-30%@100khz | 10  | 1.00 | 200  | 50 | 10 |

#### CML4532S Series

| Part No.          | Common Mode Impedance(Ω) | Test Frequency (KHz) | DCR (Ω) Max | Max. Rated Current (mA) | Rated Voltage (Vdc) | Insulation Resistance (MΩ) Min. | L(uH)        |
|-------------------|--------------------------|----------------------|-------------|-------------------------|---------------------|---------------------------------|--------------|
| CML4532S-11uH     | 300Ω Min@10MHz           | 100                  | 0.60        | 360                     | 50                  | 10                              | 11+50%/-30%  |
| CML4532S-220-2P-T | 500Ω Min@10MHz           | 100                  | 1.00        | 310                     | 50                  | 10                              | 22+50%/-30%  |
| CML4532S-51uH     | 1000 Min@10MHz           | 100                  | 1.00        | 230                     | 50                  | 10                              | 51+50%/-30%  |
| CML4532S-101-2P-T | 2000Ω Min@10MHz          | 100                  | 2.00        | 200                     | 50                  | 10                              | 100+50%/-30% |

1. Operating temperature range : -40℃~105℃(Including self - temperature rise)
2. Storage temperature range (packaging conditions): -10℃~+40℃ and RH 70% (Max.)
3. Rated Current (Irms)

Irms is direct electric current as chip surface temperature rose just 20℃ or 40℃ against chip initial surface temperature (Ta)

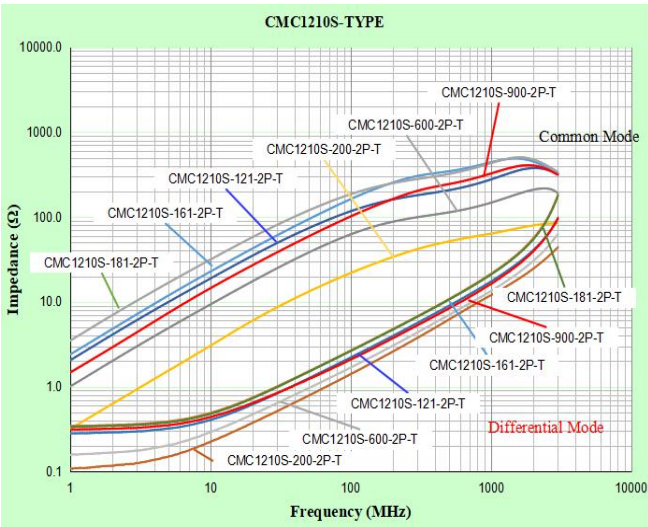
Temperature rise: Rated Current < 1A ΔT 20℃ Max

Rated Current ≥ 1A ΔT 40℃ Max

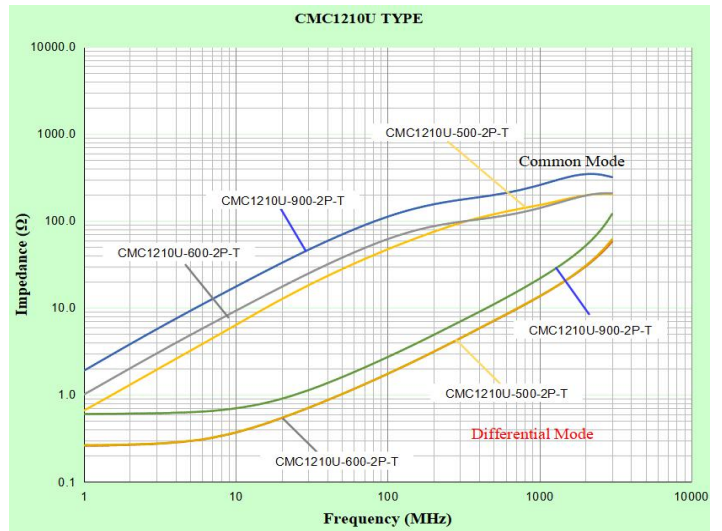


### ● Impedance Vs Frequency Curve:

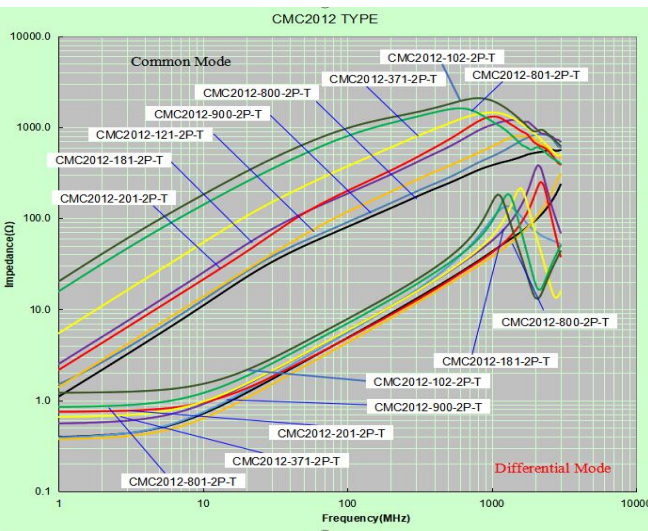
#### CMC1210 Series



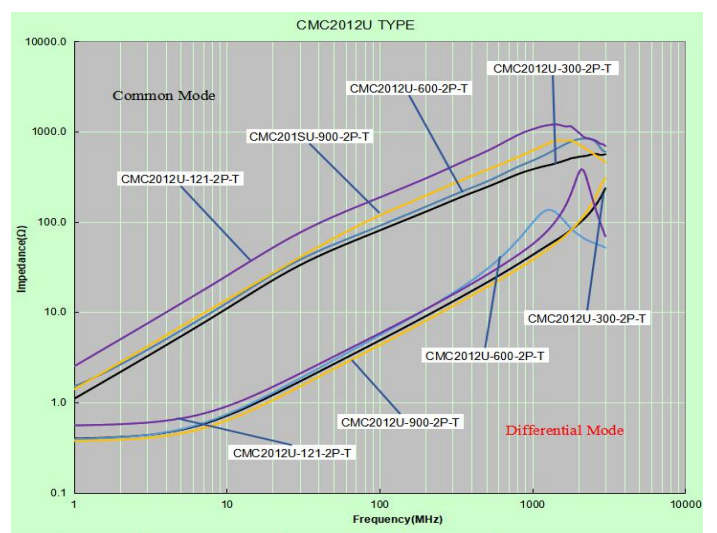
#### CMC1210U Series



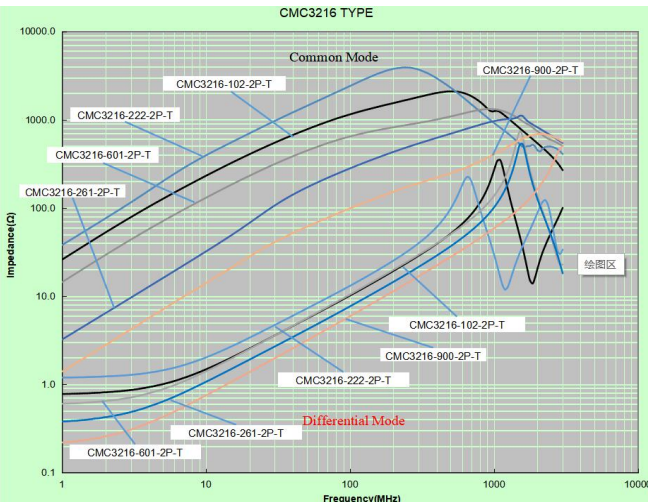
#### CMC2012 Series



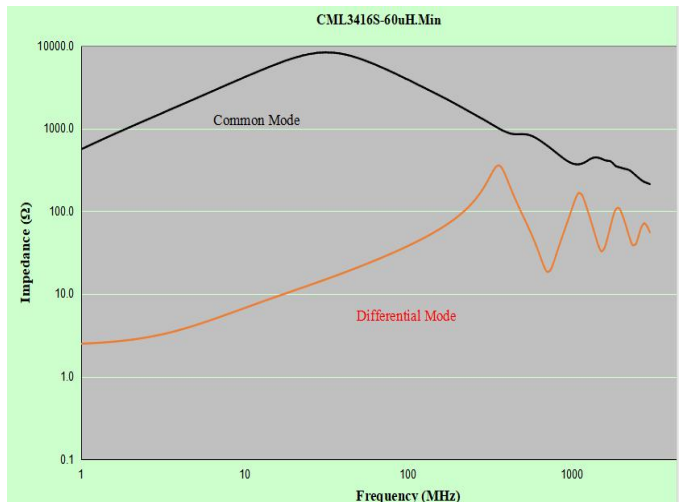
#### CMC2012U Series



#### CMC3216 Series

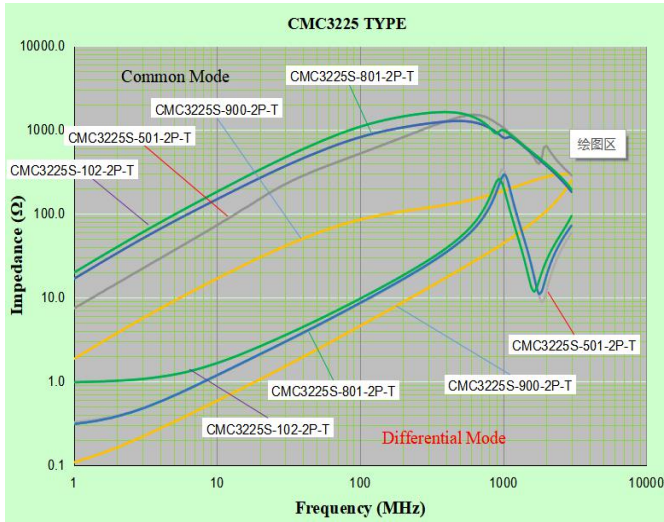


#### CML3416 Series

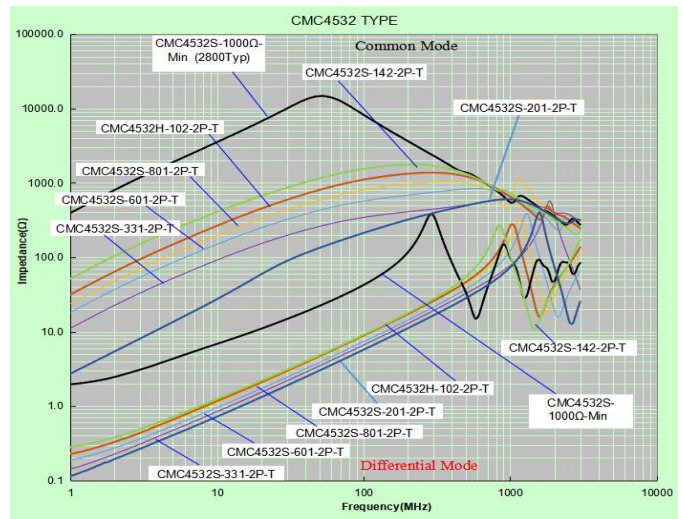




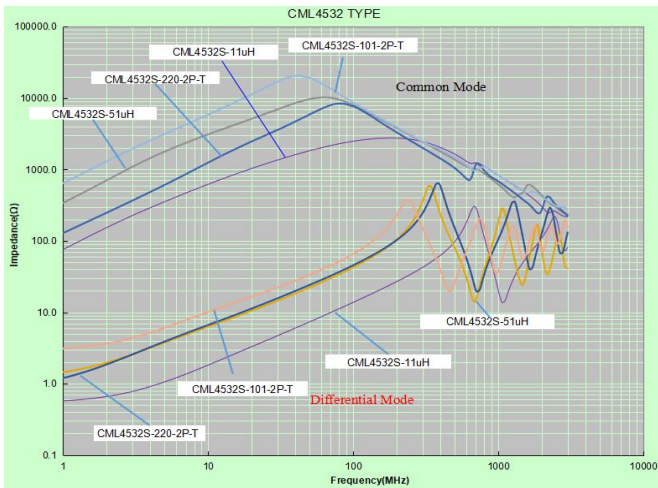
### CMC3225 Series



### CMC4532 Series



### CML4532 Series



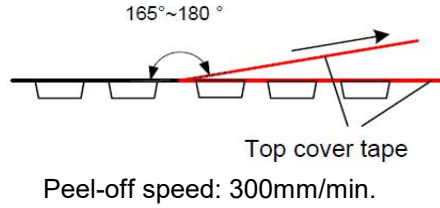
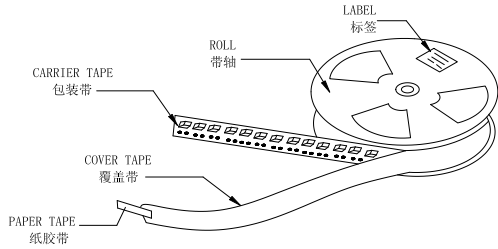




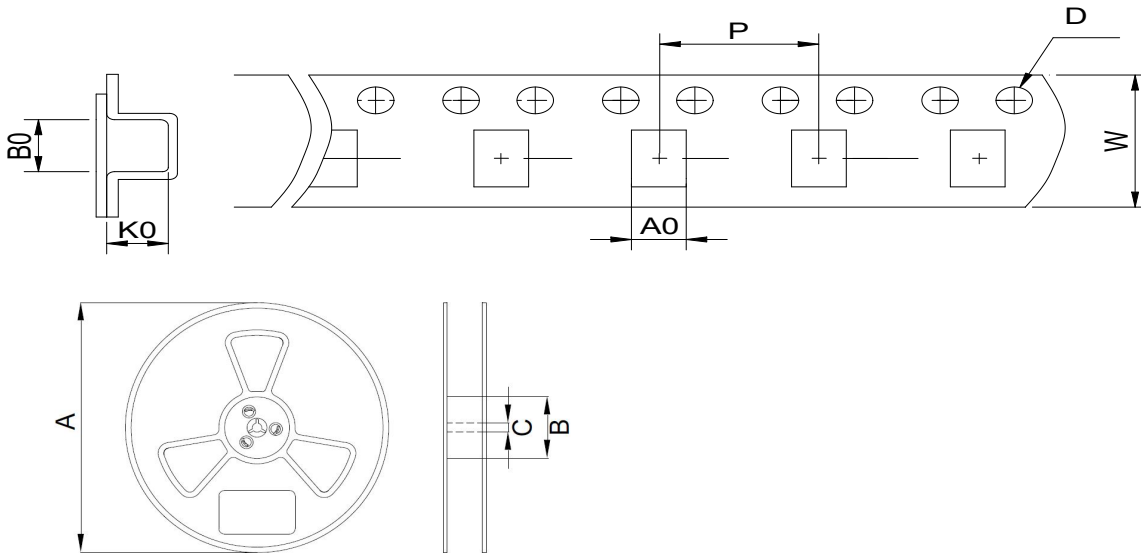
● **PACKAGING SPECIFICATION :**

1. Packaging - Cover Tape

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



2. Packaging - Tape & Reel



| Type    | Tape Dimension (mm) |      |      |     |     |   | Reel Dimension (mm) |       |     | Quantity (Pcs/Reel) |
|---------|---------------------|------|------|-----|-----|---|---------------------|-------|-----|---------------------|
|         | W                   | A0   | B0   | K0  | D   | P | A                   | B     | C   |                     |
| CMC1210 | 8                   | 1.1  | 1.4  | 1.0 | 1.5 | 4 | 178                 | 60    | 13  | 3000 pcs            |
| CMC2012 | 8                   | 1.55 | 2.45 | 1.5 | 1.5 | 4 | 178                 | 60    | 13  | 2000 pcs            |
| CMC3216 | 8                   | 1.95 | 3.7  | 2.4 | 1.5 | 4 | 178                 | 60    | 13  | 2000 pcs            |
| CML3416 | 8                   | 1.95 | 3.7  | 2.4 | 1.5 | 4 | 178                 | 60    | 13  | 2000 pcs            |
| CMC3225 | 12                  | 2.9  | 3.5  | 2.7 | 1.5 | 8 | 330                 | 10.75 | 2.3 | 3000 pcs            |
| CMC4532 | 12                  | 3.7  | 4.85 | 3   | 1.5 | 8 | 178                 | 60    | 13  | 500 pcs             |

## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [Common Mode Chokes / Filters](#) category:*

*Click to view products by [CENKER](#) manufacturer:*

Other Similar products are found below :

[74279408](#) [PE-62911NL](#) [PE-64683](#) [RD5122-6-9M6](#) [RGCMF1210900H3T](#) [ST6118T-R](#) [FE3X025-10-7NL](#) [T8114NLT](#) [RD5122-10-6M0](#)  
[TCM0806G-350-2P-T](#) [TCM0806G-650-2P-T](#) [IND-0110](#) [UAL21VR0802000](#) [UALSC023000000](#) [UALSC1020JH000](#) [UALSC1520JH000](#)  
[UALSU10VR15019](#) [UALSU9VD070100](#) [36-00037](#) [5701610000](#) [UALW21HS200290](#) [UALW21HS072450](#) [UALSU9HF050500](#)  
[UALSU9H0208000](#) [UAL24VK06450CH](#) [PLT10HH501100PNB](#) [PLT10HH401100PNB](#) [PLT10HH1026R0PNB](#) [PE-67531](#) [TLH10UB](#) [113](#)  
[OR5](#) [2752045447](#) [CMS3-11-R](#) [7351V](#) [7408-RC](#) [CMF16-153131](#) [744252510](#) [T8116NLT](#) [CMS2-10-R](#) [DLW44SN101SK2L](#) [FE2X10-4-2NL](#)  
[744253200](#) [744253101](#) [744252220](#) [TX8111NLT](#) [UAL30VR3500470](#) [CTX01-19077-R](#) [T8003NLT](#) [CTX01-13663](#) [CTX66-19521-R](#)  
[7446630047](#)