

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

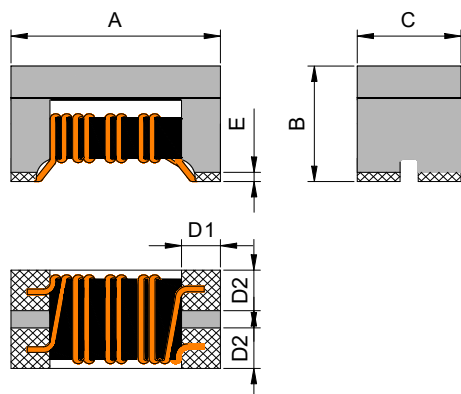
CMC 3216 S - 102 - 2P - T
A B C D E F

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

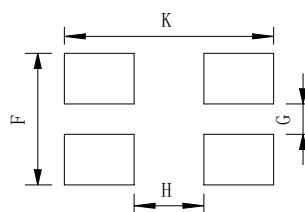
C: Material type 材料类型 D: Impedance Value 阻抗值 102 = 1000Ω

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

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



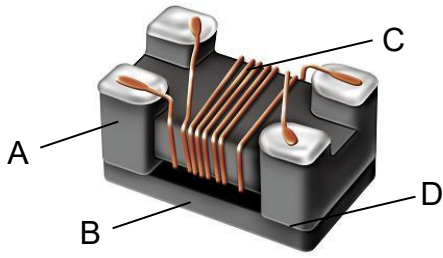
Recommended Land Pattern



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(Ω)

Test equipment: Keysight E4991B / Agilent 4787A or equivalent

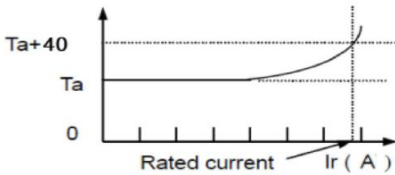
2. DC Resistance (DCR)

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),

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



4. Insulation Resistance

Test equipment: Chroma or equivalent TH2683A / ZX6583

● **RECOMMENDED SOLDERING TECHNOLOGIES**

Re-flowing Profile

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

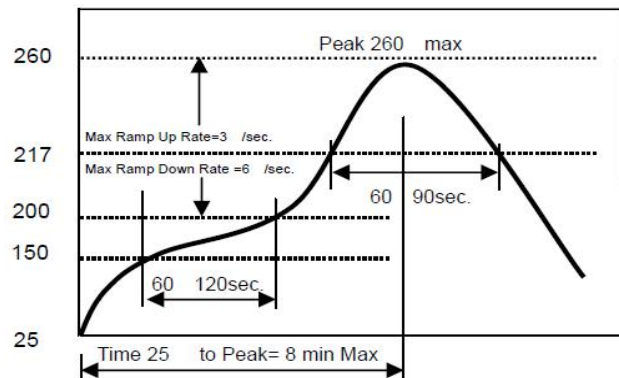
Allowed time above 217C: 60~90sec.

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(Ω)	Test Frequency (MHz)	DCR (Ω) 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(Ω)	Test Frequency (MHz)	DCR (Ω) 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(Ω)	Test Frequency (MHz)	DCR (Ω) 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 @100khz	100	1.70	200	50	10

CMC3225S Series

Part No.	Common Mode Impedance(Ω)	Test Frequency (MHz)	DCR (Ω) Max	Max. Rated Current (mA)	Rated Voltage (Vdc)	Insulation Resistance (M Ω) 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 μ H + 50%/-30%	100kHz,0.1v	0.70	200	80	10
CML3225E-101-2P-T	L:51 μ H + 50%/-30%	100kHz,0.1v	1.50	150	80	10

CMC3225H Series

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

CMC4532S Series

Part No.	Common Mode Impedance(Ω)	Test Frequency (MHz)	DCR (Ω) Max	Max. Rated Current (mA)	Rated Voltage (Vdc)	Insulation Resistance (M Ω) 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 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)

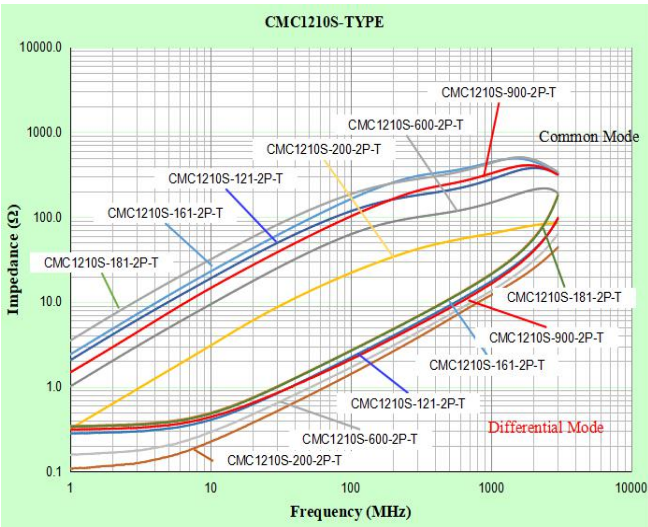
Temperature rise: Rated Current < 1A ΔT 20℃ Max

Rated Current ≥ 1A ΔT 40℃ Max

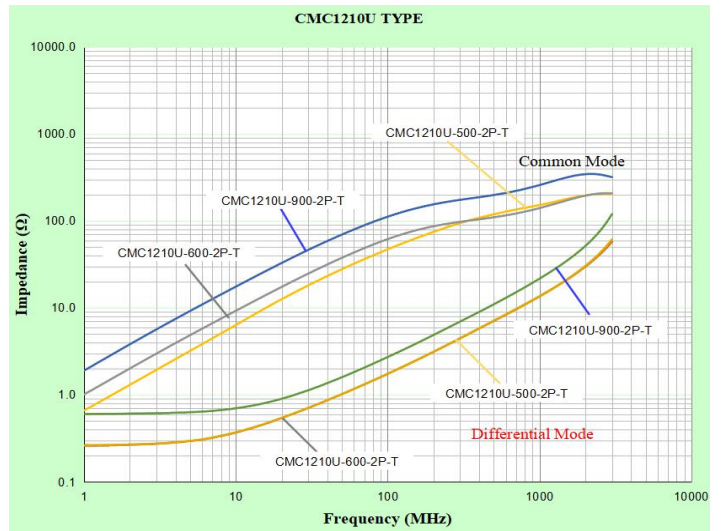


● Impedance Vs Frequency Curve:

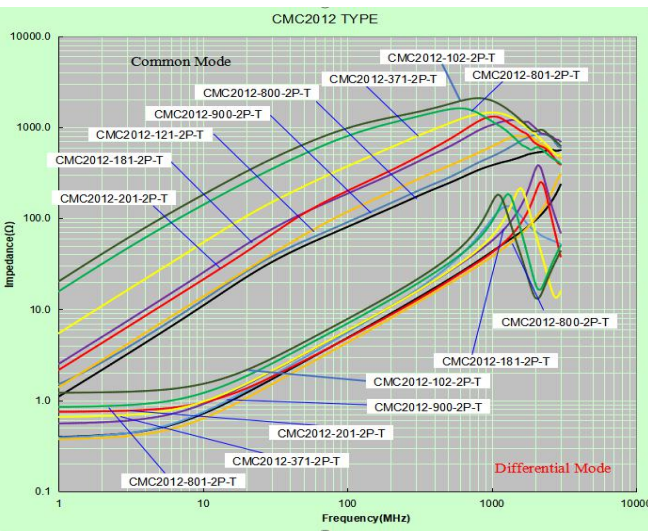
CMC1210 Series



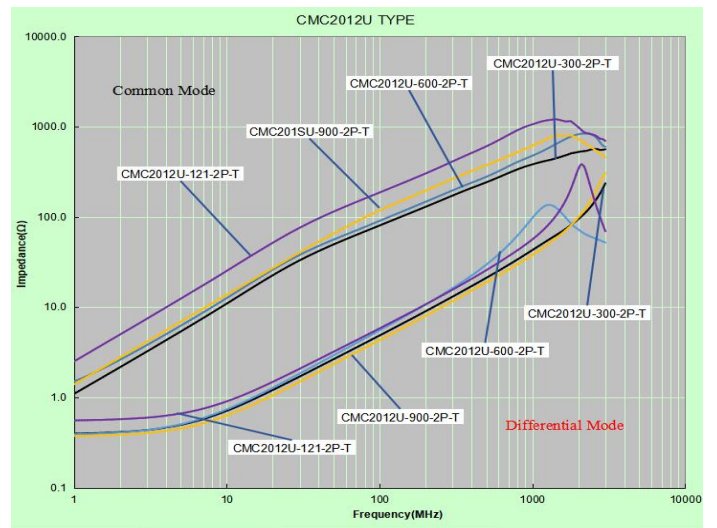
CMC1210U Series



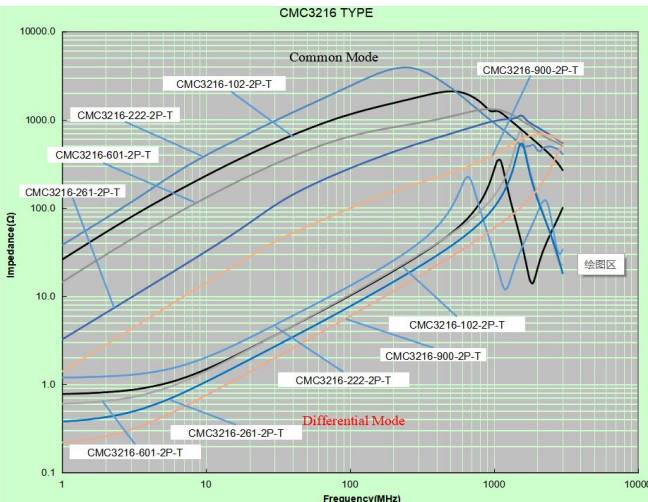
CMC2012 Series



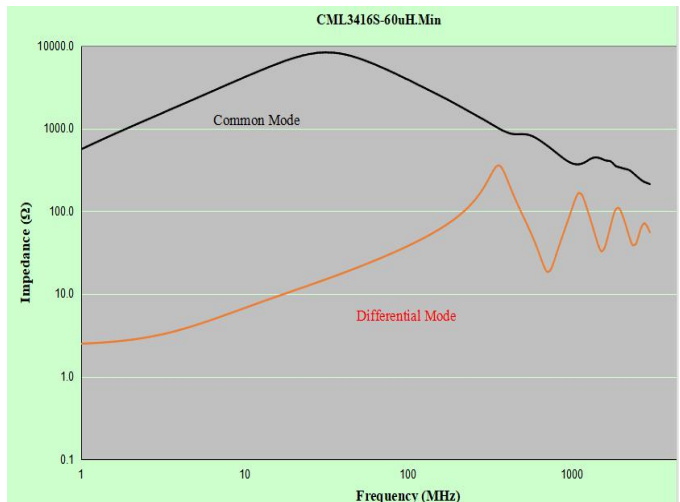
CMC2012U Series



CMC3216 Series

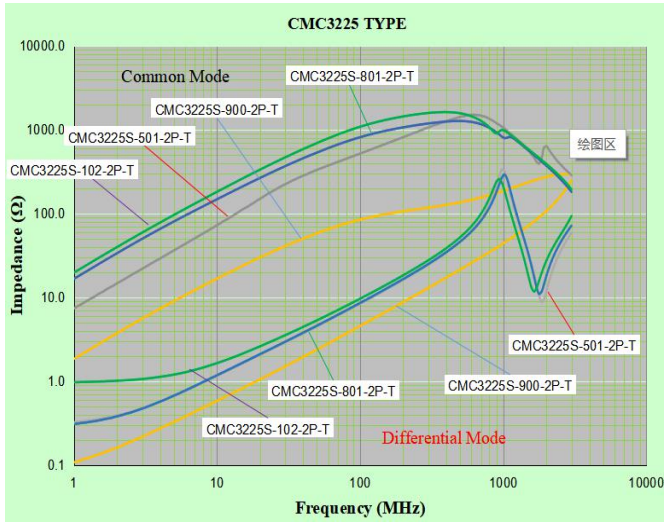


CML3416 Series

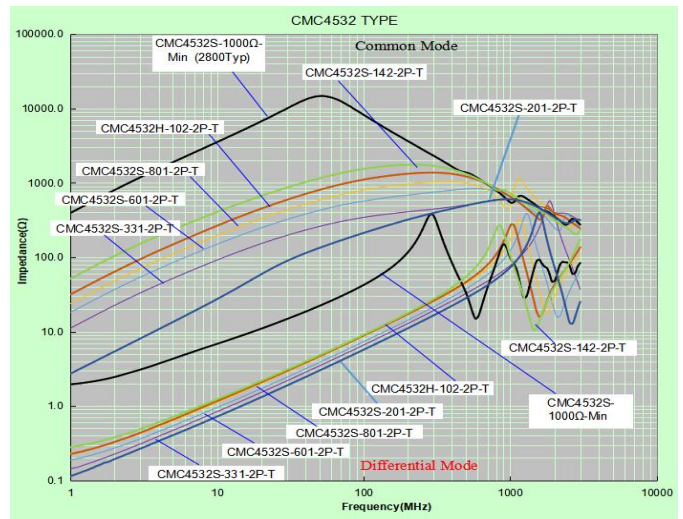




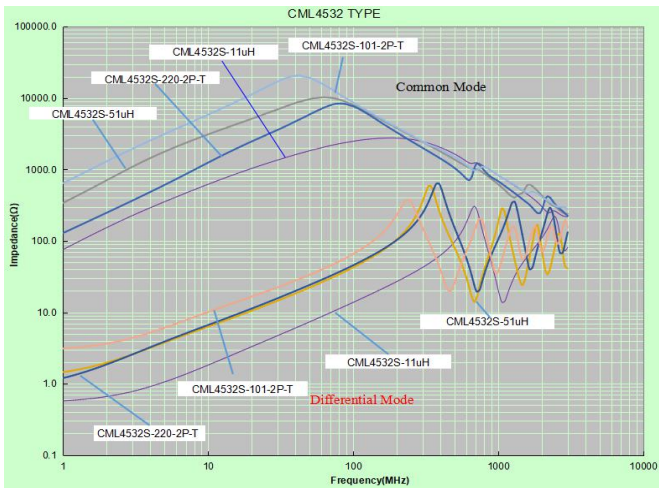
CMC3225 Series



CMC4532 Series



CML4532 Series

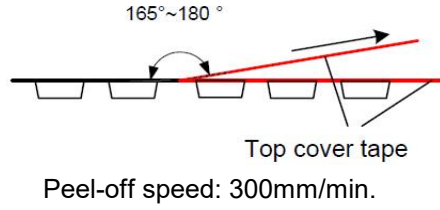
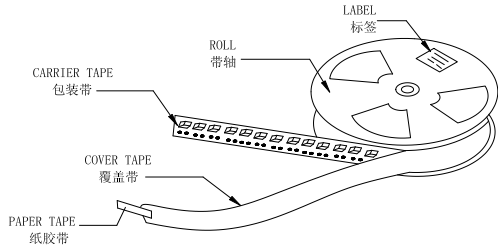




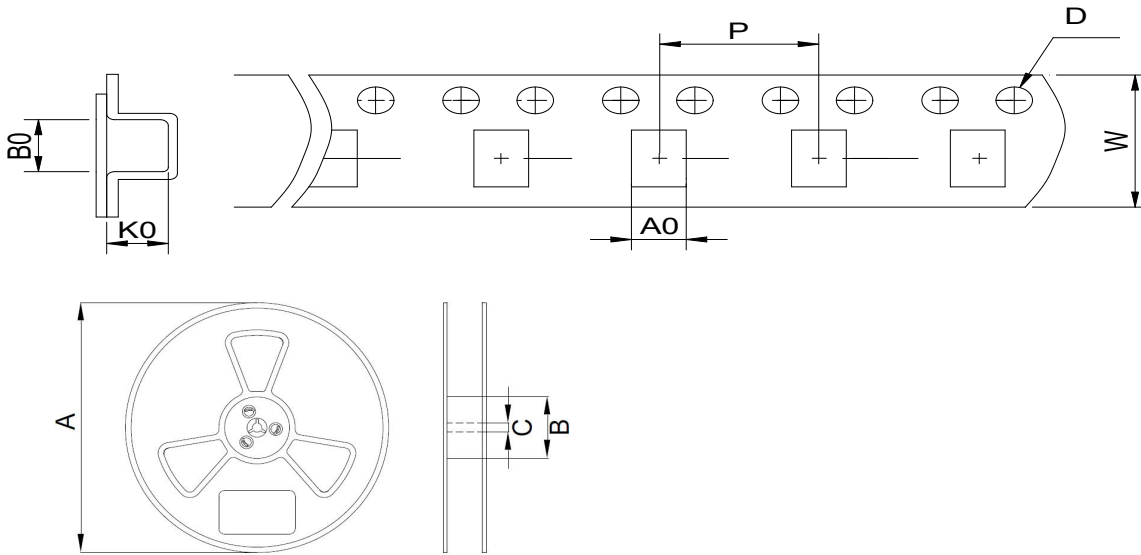
● **PACKAGING SPECIFICATION :**

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

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