



WIRE WOUND CHIP COMMON MODE COIL 绕线共模电感

● 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

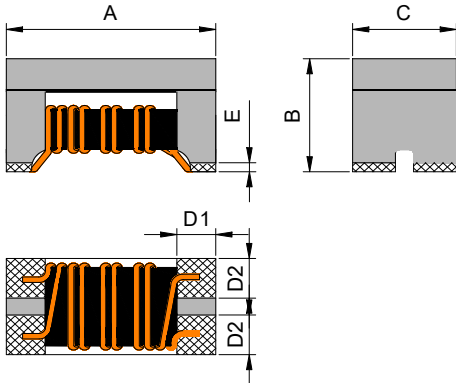
CMC 3216 S - 102 - 2P - T
A B C D E F

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

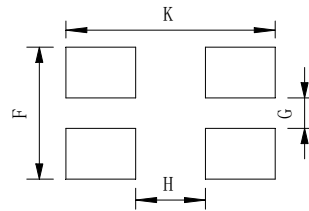
C: Product type 产品类型 D: Impedance Value 阻抗值 102 = 1000Ω

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

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

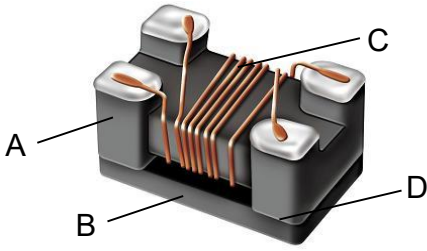


Recommended Land Pattern



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	0.30 Ref	0.50 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	0.85 Ref	0.3 Max	3.5 Ref	0.6 Ref	1.6 Ref	4.4 Ref
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** 结构与材料



Part	Components(组件)	Material(材料)
A	Core	Ferrite
B	I Core	Ferrite
C	Wire	Polyurethane enameled copper wire
D	Epoxy	Epoxy resin

● **TEMPERATURE RATING** 额定温度

1. Operating temperature range (individual chip without packing): -40°C to +125°C
工作温度范围：-40°C ~ +125°C
2. Storage temperature range (packaging conditions): -10°C~+40°C and RH 70% (Max.)
储存温度范围（包装条件）：-10°C~+40°C，相对湿度70%（最大值）

● **TEST AND MEASUREMENT PROCEDURES** 测试项目与测试条件

1. Common Mode Impedance 共模阻抗(Ω)

Test equipment: Keysight E4991B / Agilent 4787A or equivalent

测试设备:Keysight E4991B / Agilent 4787A或同等产品

2. DC Resistance 直流电阻(DCR)

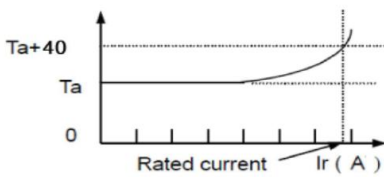
Test equipment: Agilent34420A / Agilent 4338B or equivalent

3. Rated Current 额定电流 (Irms)

Irms is direct electric current as chip surface temperature rose just 20 or 40 against chip initial surface temperature
电感加载直流电，电感表面温度相比于电感初始表面温度升高20度或40度

(Ta), Temperature rise: Rated Current < 1A ΔT 20°C Max

Rated Current ≥ 1A ΔT 40°C Max



4. Insulation Resistance 绝缘电阻

Test equipment: Chroma or equivalent TH2683A / ZX6583

测试设备:Chroma/TH2683A / ZX6583或等效设备

● **Reflow Soldering** 回流焊

Re-flowing Profile

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

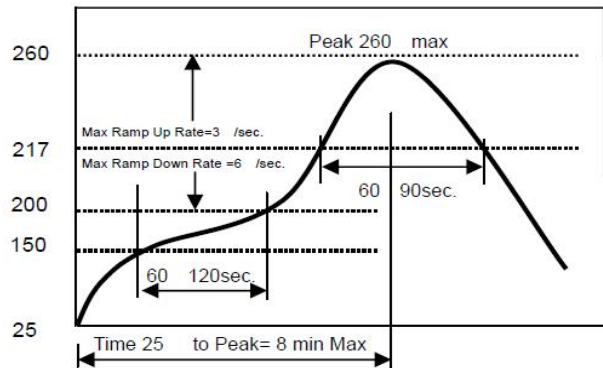
Allowed time above 217C: 60~90sec.

Max temp: 260

Max time at max temp: 10sec

Solder paste: Sn/3.0Ag/0.5Cu

Allowed Reflow time: 2 times max





● SPECIFICATION TABLE 规格特性表

CMC1210S Series

Part No. 型号	Common Mode Impedance 共模阻抗(Ω)	Test Frequency 测试频率 (MHz)	DCR 直流电阻 (Ω) Max	Max. Rated Current 额定电流 (mA)	Rated Voltage 额定电压 (Vdc)	Insulation Resistance 绝缘电阻 (M Ω) 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. 型号	Common Mode Impedance 共模阻抗(Ω)	Test Frequency 测试频率 (MHz)	DCR 直流电阻 (Ω) Max	Max. Rated Current 额定电流 (mA)	Rated Voltage 额定电压 (Vdc)	Insulation Resistance 绝缘电阻 (M Ω) Min.
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
CMC1210U-121-2P-T	120 \pm 25%	100	0.35	330	50	10

CMC2012S Series



Part No. 型号	Common Mode Impedance 共模阻抗(Ω)	Test Frequency 测试频率 (MHz)	DCR 直流电阻 (Ω) Max	Max. Rated Current 额定电流 (mA)	Rated Voltage 额定电压 (Vdc)	Insulation Resistance 绝缘电阻 (MΩ) Min.
CMC2012S-300-2P-T	30±25%	100	0.20	450	50	10
CMC2012S-800-2P-T	80±25%	100	0.30	400	50	10
CMC2012S-900-2P-T	90±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-261-2P-T	260±25%	100	0.40	300	50	10
CMC2012S-371-2P-T	370±25%	100	0.45	300	50	10
CMC2012S-601-2P-T	600±25%	100	0.60	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. 型号	Common Mode Impedance 共模阻抗(Ω)	Test Frequency 测试频率 (MHz)	DCR 直流电阻 (Ω) Max	Max. Rated Current 额定电流 (mA)	Rated Voltage 额定电压 (Vdc)	Insulation Resistance 绝缘电阻 (MΩ) Min.
CMC2012U-300-2P-T	30±25%	100	0.20	400	50	10
CMC2012U-600-2P-T	60±25%	100	0.30	400	50	10
CMC2012U-900-2P-T	90±25%	100	0.30	400	50	10
CMC2012U-121-2P-T	120±25%	100	0.30	330	50	10

CMC3216S/L Series



Part No. 型号	Common Mode Impedance 共模阻抗(Ω)	Test Frequency 测试频率 (MHz)	DCR 直流电阻 (Ω) Max	Max. Rated Current 额定电流 (mA)	Rated Voltage 额定电压 (Vdc)	Insulation Resistance 绝缘电阻 (M Ω) Min.
CMC3216S-900-2P-T	90 \pm 25%	100	0.30	370	50	10
CMC3216S-261-2P-T	260 \pm 25%	100	0.50	310	50	10
CMC3216S-601-2P-T	600 \pm 25%	100	0.80	260	50	10
CMC3216S-102-2P-T	1000 \pm 25%	100	1.00	230	50	10
CMC3216S-222-2P-T	2200 \pm 25%	100	1.20	200	50	10
CMC3216S-242-2P-T	2400 \pm 25%	100	1.20	200	50	10
CML3216S-600-2P-T	L:50uH Min	0.1	1.70	200	50	10

CMC3225 Series

Part No. 型号	Common Mode Impedance 共模阻抗(Ω)	Test Frequency 测试频率 (MHz)	DCR 直流电阻 (Ω) Max	Max. Rated Current 额定电流 (mA)	Rated Voltage 额定电压 (Vdc)	Insulation Resistance 绝缘电阻 (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:51uH + 50%/-30%	100kHz,0.1v	0.70	200	80	10
CML3225E-101-2P-T	L:51uH + 50%/-30%	100kHz,0.1v	1.50	150	80	10

CMC3225H Series



Part No. 型号	Common Mode Impedance 共模阻抗(Ω)	Test Frequency 测试频率 (MHz)	DCR 直流电阻 (Ω) Max	Max. Rated Current 额定电流 (mA)	Rated Voltage 额定电压 (Vdc)	Insulation Resistance 绝缘电阻 (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. 型号	Common Mode Impedance 共模阻抗(Ω)	Test Frequency 测试频率 (MHz)	DCR 直流电阻 (Ω) Max	Max. Rated Current 额定电流 (mA)	Rated Voltage 额定电压 (Vdc)	Insulation Resistance 绝缘电阻 (M Ω) Min.
CML3416S-60uH.Min	60uH Min	100KHz,0.1v	1.70	200	50	10

CMC4532 Series

Part No. 型号	Common Mode Impedance 共模阻抗(Ω)	Test Frequency 测试频率 (MHz)	DCR 直流电阻 (Ω) Max	Max. Rated Current 额定电流 (mA)	Rated Voltage 额定电压 (Vdc)	Insulation Resistance 绝缘电阻 (M Ω) Min.
CMC4532S-900-2P-T	90 \pm 25%	100	0.05	3000	50	10
CMC4532S-121-2P-T	120 \pm 25%	100	0.07	3000	50	10
CMC4532S-201-2P-T	200 \pm 25%	100	0.10	1500	50	10
CMC4532H-231-2P-T	230 \pm 25%	100	0.05	3500	50	10
CMC4532S-331-2P-T	330 \pm 25%	100	0.11	1500	50	10
CMC4532S-601-2P-T	600 \pm 25%	100	0.12	1500	50	10
CMC4532H-601-2P-T	600 \pm 25%	100	0.06	2500	50	10
CMC4532S-801-2P-T	800 \pm 25%	100	0.16	1000	50	10
CMC4532H-102-2P-T	1000 \pm 25%	100	0.11	2100	50	10
CMC4532S-142-2P-T	1400 \pm 25%	100	0.20	700	50	10
CMC4532S-1000 Ω /Min	1000 Ω Min L:51uH + 50%/-30% @100khz	10	1.00	200	50	10

CML4532S Series



Part No. 型号	Common Mode Impedance 共模阻抗(Ω)	Test Frequency 测试频率 (MHz)	DCR 直流电 阻 (Ω) Max	Max. Rated Current 额定电流 (mA)	Rated Voltage 额定电压 (Vdc)	Insulation Resistance 绝缘电阻 (M Ω) Min.	
CML4532S-11uH	300 Ω Min@10MHz	100	0.60	360	50	10	11uH +50%/-30%
CML4532S-220-2P-T	500 Ω Min@10MHz	100	1.00	310	50	10	22uH +50%/-30%
CML4532S-51uH	1000 Min@10MHz	100	1.00	230	50	10	51uH +50%/-30%
CML4532S-101-2P-T	2000 Ω Min@10MHz	100	2.00	200	50	10	100uH +50%/-30%

1. Operating temperature range : $-40^{\circ}\text{C} \sim 105^{\circ}\text{C}$ (Including self - temperature rise)
2. Storage temperature range (packaging conditions): $-10^{\circ}\text{C} \sim +40^{\circ}\text{C}$ and RH 70% (Max.)
3. Rated Current (Irms)

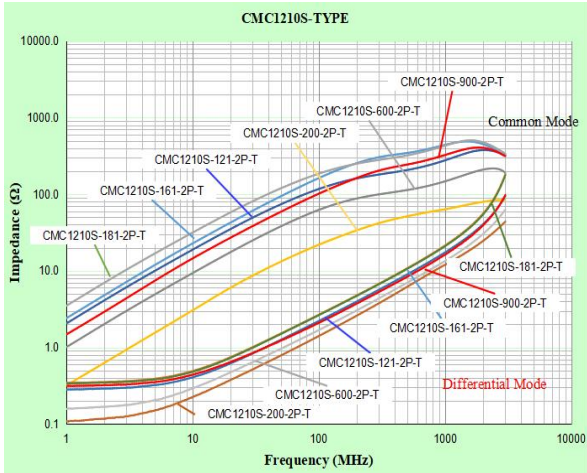
Irms is direct electric current as chip surface temperature rose just 20°C or 40°C against chip initial surface temperature (T_a)

Temperature rise: Rated Current < 1A ΔT 20°C Max

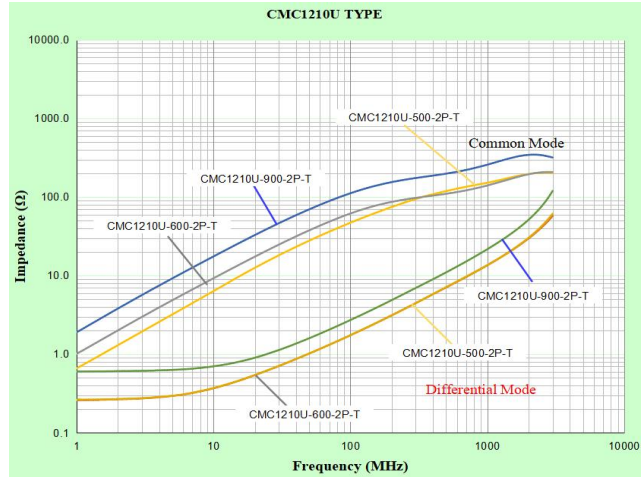
Rated Current \geq 1A ΔT 40°C Max



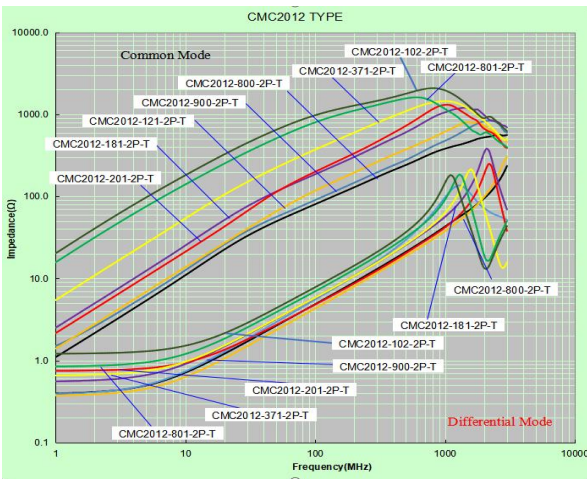
● Impedance Vs Frequency Curve 阻抗频率曲线:
CMC1210 Series



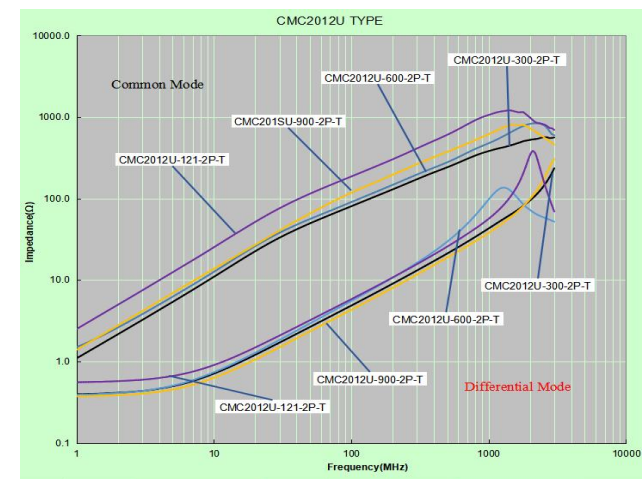
CMC1210U Series



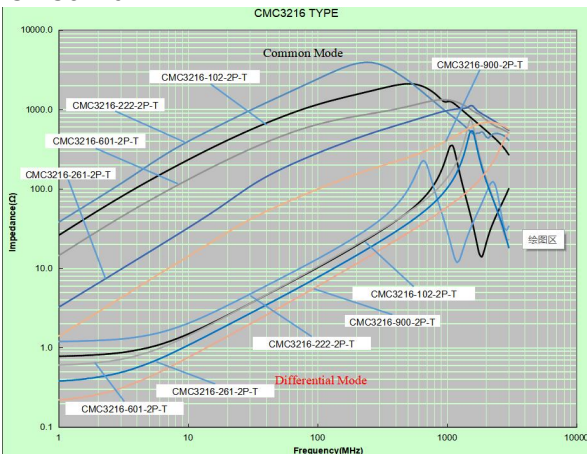
CMC2012 Series



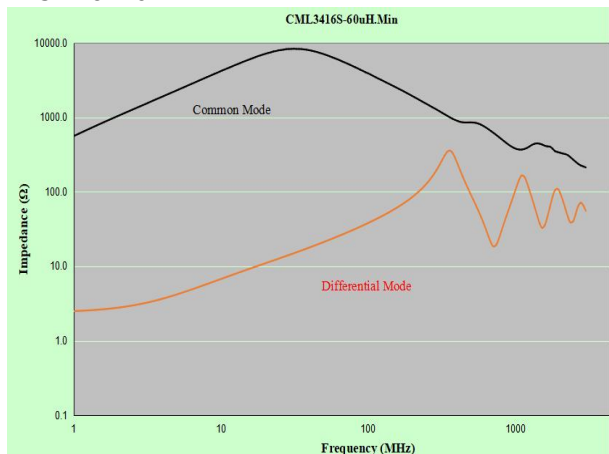
CMC2012U Series



CMC3216 Series

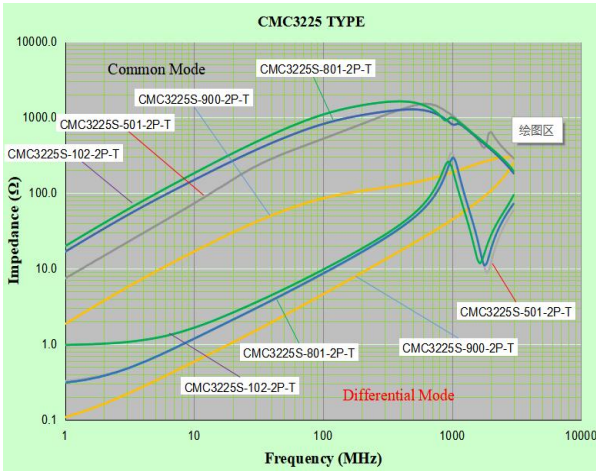


CML3416 Series

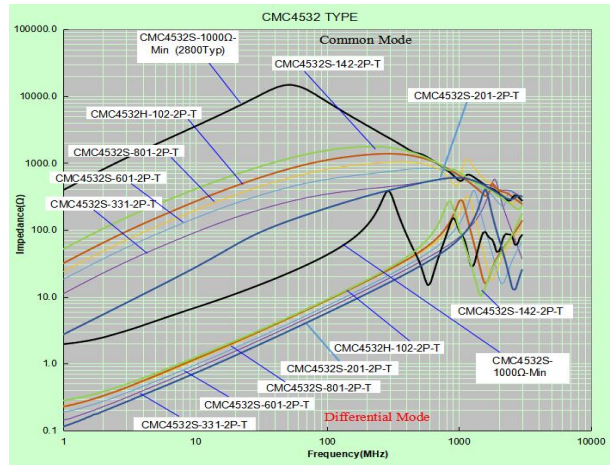




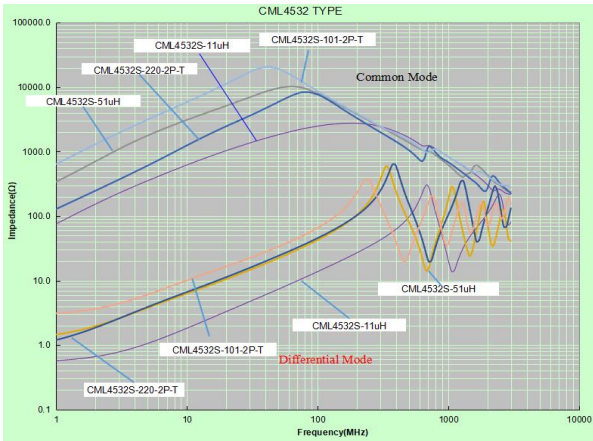
CMC3225 Series



CMC4532 Series



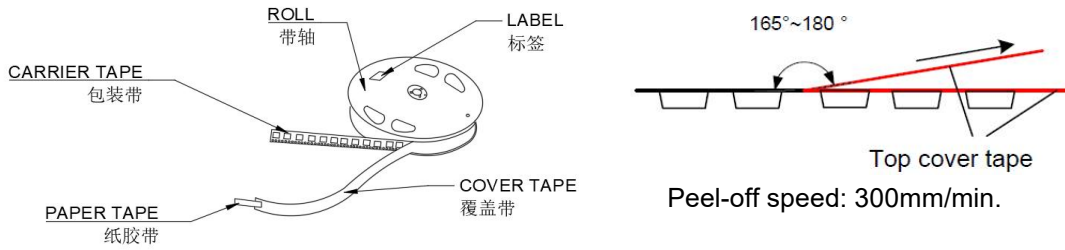
CML4532 Series



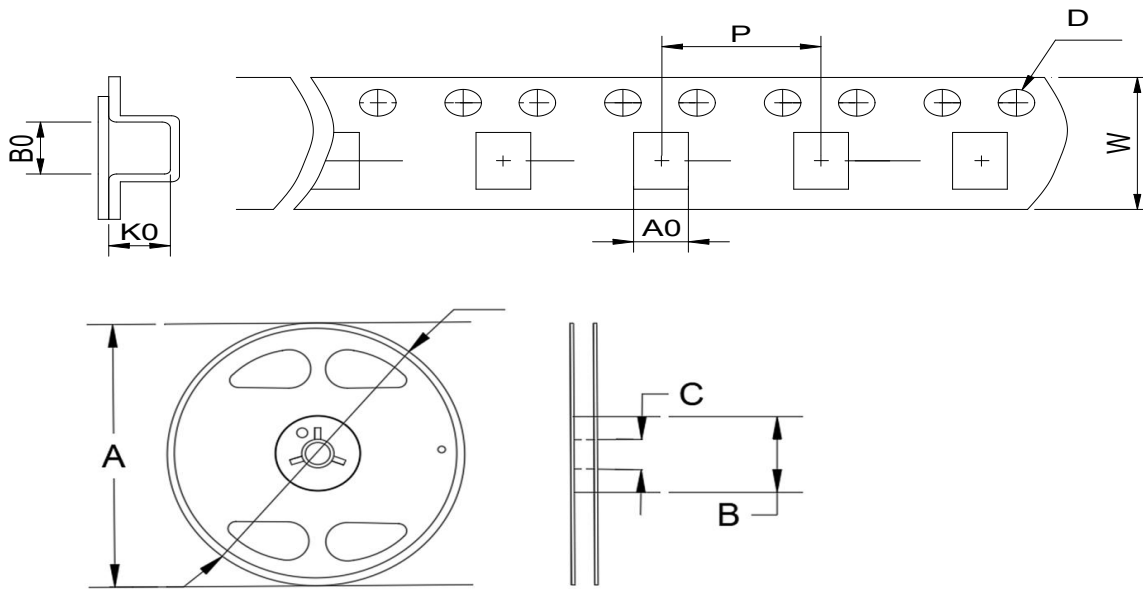
● **PACKAGING SPECIFICATION 包装规格**

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(型号)	Tape Dimension 载带尺寸(mm)						Reel Dimension 卷盘尺寸 (mm)			Quantity (Pcs/Reel) 数量 (个/卷)
	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



MODIFY RECORD

Version	Date	Content	Prepared	Approved
A0	2020/11/12	新版发行	钟建	肖中华
A1	2021/5/19	增加共模差模曲线, 删除未开发系列	王献	王其良
A2	2021/9/1	增加CML系列, 修改2012系列电性参数	张姝娟	王其良
A3	2021/12/8	增加3225系列	张姝娟	王其良
A4	2021/12/28	增加CMC2012U系列	张姝娟	王其良
A5	2022/4/19	增加1210S与1210U系列	张姝娟	王其良