

FILTER PRODUCTS

[滤波产品]

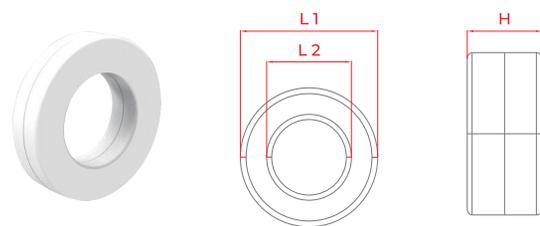
滤波是将信号中特定波段频率滤除的操作，是抑制和防止干扰的一项重要措施。在现代电子设备设计中，EMC(电磁兼容)与EMI(抗电磁干扰)已越来越引起人们重视，解决这些问题的关键元件之一即是电感器件。随着各行业对 EMC 越来越高的要求，具有高频高导磁率的纳米晶合金材料运用快速增长。

Filtering is the operation of filtering out a specific band frequency in a signal, which is an important measure to suppress and prevent interference. In the design of modern electronic equipment, EMC (electromagnetic compatibility) and EMI (anti-electromagnetic interference) have attracted more and more attention, and one of the key components to solve these problems is the inductive device. With the increasing requirements of EMC in various industries, the application of nanocrystalline alloy materials with high frequency and high permeability has been growing rapidly.

EMC磁环 线束磁环系列 EMC core

由于纳米晶有高频高磁导率的特性，把磁环直接套在传输线缆的非屏蔽层上，可以有效的降低EMC噪声干扰。同时朗峰根据过往的项目经验，考虑到不同运用场景中EMC问题的差异性，对于不同的饱和和需求，以及不同频率的阻抗需求重点推出了针对1MHz以下频段的LFNA系列，针对30~60MHz频段的LFMI系列和针对特殊大电流环境的LFAS系列。

特征概览



优良的阻抗-频率特性；突出的降低环路共模电流的能力；
优良的温度稳定性。

朗峰以纳米晶为核心材料推出了针对不同运用场景的产品，主要包括线束磁环、共模电感、滤波总成、屏蔽片四大类产品。对比铁氧体等传统材料，纳米晶具有更高的居里温度，可以在180°C的高温状态下稳定的工作。同时纳米晶具有更高的磁导率和更高的饱和磁感应强度，使得最终产品的体积大幅减小。目前已经广泛运用于变频驱动，新能源汽车电控，变频空调等设备中。

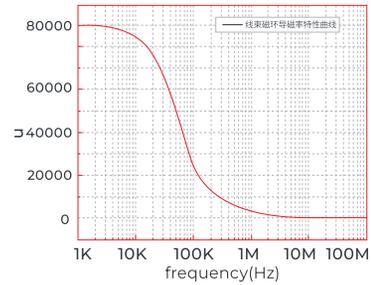
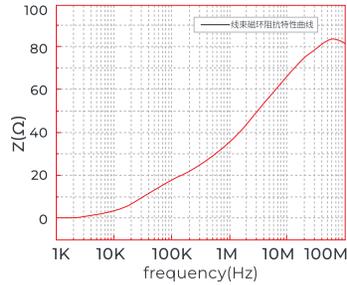
With nanocrystalline as the core material, Londerful has launched products for different application scenarios, mainly including EMC core, CMC, EMC filter, shielding sheet four categories of products. Compared with traditional materials such as ferrite, nanocrystalline has a higher Curie temperature and can work stably at a high temperature of 180°C. At the same time, nanocrystalline has higher permeability and higher saturation magnetic induction intensity, which greatly reduces the volume of the final product. At present, it has been widely used in frequency conversion drive, electric control of new energy vehicles, frequency conversion air conditioning and other equipment.

Because the nanocrystalline has high frequency and high permeability, core is directly placed on the unshielded layer of the transmission cable, which can effectively reduce the interference of EMC noise. At the same time, according to the past project experience, taking into account the differences in EMC problems in different application scenarios, for different saturation resistance requirements and impedance requirements of different frequencies, Londerful launched LFNA series for frequency bands below 1MHz, LFMI series for 30~60MHz band and LFAS series for special high current environments.



Excellent impedance-frequency characteristics; outstanding ability to reduce loop common mode current; excellent temperature stability

性能曲线



详细规格

物料编码 Material code	裸芯标称尺寸 Bare core size	形状 Shape	L1(mm)	L2(mm)	H(mm)	AL-10kHz(μH)	AL-100kHz(μH)	工艺 Technique
A0801000001	20x12x8	圆形 Rotundity	22	10.7	10.1	43.6-81.2	13.1-24.3	LFNA
A0801000002	22x18x10	圆形 Rotundity	25	15.8	12.6	21.8-40.5	6.5-12.1	LFNA
A0801000003	24x15x6.5	圆形 Rotundity	26.7	12.9	9	29.4-54.7	9.8-18.2	LFNA
A0801000004	24x17x8	圆形 Rotundity	26.4	15.2	9.9	29.8-55.4	8.9-16.6	LFNA
A0801000005	25x15x4	圆形 Rotundity	26.5	13.5	5.5	21.8-40.5	6.5-12.1	LFNA
A0801000006	25x16x10	圆形 Rotundity	27.5	13.8	12.2	47.9-89	14.3-26.7	LFNA
A0801000007	30.5x20x15	圆形 Rotundity	33.5	17.8	17.8	65.2-121	19.6-36.5	LFNA
A0801000008	32x20x10	圆形 Rotundity	34.4	17.4	13	50.4-93.6	15.1-28	LFNA
A0801000009						10.1-28	8.4MIN	LFMI
A0801000010	33x23x15	圆形 Rotundity	36.5	20.9	19.5	58.5-108	17.5-32.5	LFNA
A0801000011	40x25x15	圆形 Rotundity	43.7	21.6	18.5	75.6-140	22.6-42	LFNA
A0801000012	50x32x15	圆形 Rotundity	53.7	28.8	18.4	71.9-133	20min	LFNA
A0801000013	50x32x20	圆形 Rotundity	53.8	28.3	24	95.8-178	28-53	LFNA
A0801000014						24.9-53	16.9MIN	LFMI
A0801000015	59x40x20	圆形 Rotundity	63	36	25	83-155	25-46	LFNA
A0801000016	60x40x25	圆形 Rotundity	65.5	36.5	28.9	109-202	32-60	LFNA
A0801000017	63x50x25	圆形 Rotundity	68.3	46.5	28.8	62-116	19-35	LFNA
A0801000018	100x80x20	圆形 Rotundity	104.3	76	23.5	15-30	7.5MIN	LFMI
A0801000019						43-81	13-25	LFNA
A0801000020	130x100x30	圆形 Rotundity	134.5	94.8	36.2	76-142	23-44	LFNA
A0801000021	72x39x20	跑道型 Runway type	75.5	42.2	25	37.7-73	11.3-22.7	LFNA
A0801000022						13.9-30	9.3MIN	LFMI
A0801000023	52x28x15	跑道型 Runway type	56	32	18	36-90	9-30	LFNA
A0801000024	76x41x20	跑道型 Runway type	79	44	25	20.5-36.5	5.5-10	LFNA

FILTER PRODUCTS

[滤波产品]

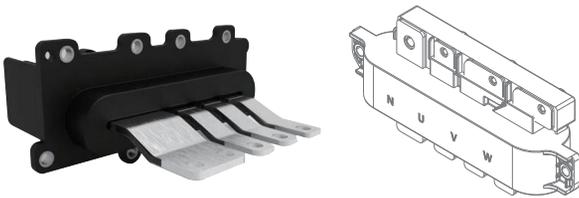
EMC磁环 三相磁环系列 Three phase core

*可联系我司销售经理进行定制

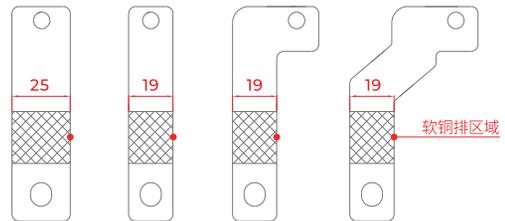
三相磁环是一种用于三相电路中的电磁元件，通常由纳米晶等磁性材料制成，能够对电路中存在的高频噪声进行有效抑制，因此可使用我司针对高频噪声推出的LFMI系列磁环。在汽车电机运行时，会产生各种电磁干扰，三相磁环可以通过其特殊的磁性特性，将这些高频噪声限制在一定范围内，减少对周围电子设备的干扰，同时也有助于提高电机自身的稳定性和可靠性。当电机运行时，由于各种因素可能会在轴承上产生感应电压，进而导致轴承电腐蚀，影响轴承的使用寿命和电机的性能。三相磁环可以通过抑制共模电流等方式，减少电机绕组与轴承之间的电位差，从而有效解决轴承电腐蚀问题，这对于汽车电机这种需要长期稳定运行的设备尤为重要。

Three phase magnetic core is an electromagnetic component used in three-phase circuits, usually made of magnetic materials such as nanocrystals, which can effectively suppress high-frequency noise in the circuit. Therefore, our LFMI series magnetic ring designed for high-frequency noise can be used. During the operation of automotive motors, various electromagnetic interferences are generated. The three-phase magnetic core can limit these high-frequency noises within a certain range through its special magnetic properties, reducing interference with surrounding electronic devices and also helping to improve the stability and reliability of the motor itself. When the motor is running, various factors may generate induced voltage on the bearings, which can lead to electrical corrosion of the bearings and affect the service life of the bearings and the performance of the motor. Three phase magnetic cores can reduce the potential difference between motor windings and bearings by suppressing common mode currents, effectively solving the problem of bearing electrical corrosion. This is particularly important for equipment such as automotive motors that require long-term stable operation.

特征概览

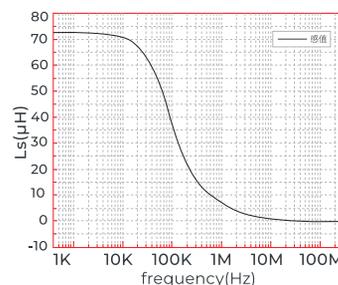
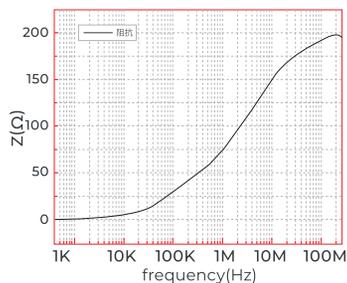


抑制电磁干扰(主要30MHz以上); 解决轴承电腐蚀问题; 小型化和一体成型; 软铜排, 便于安装。



Suppress electromagnetic interference (mainly above 30MHz); solve the problem of electrical corrosion of bearings; miniaturization and one-piece molding; soft copper busbar, easy to install.

性能曲线



FILTER PRODUCTS

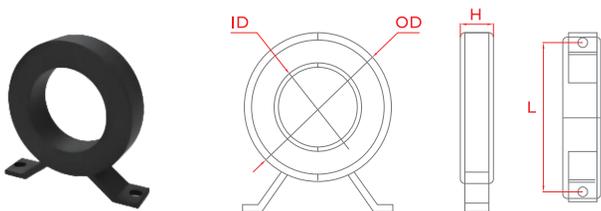
[滤波产品]

EMC磁环

特殊磁环系列-带支架磁环

Magnetic core with bracket

特征概览



高初始磁导率, 高饱和磁感应强度;

低矫顽力; 损耗低; 稳定性好。

High initial magnetic permeability, high saturation magnetic induction intensity;

Low coercivity; Low loss; Good stability

详细规格

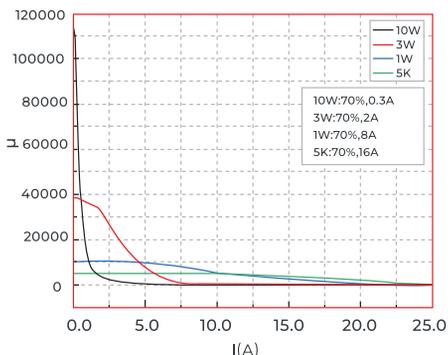
物料编码 Material code	规格 Specification	尺寸 Size				感值Ls (μH)
		OD	ID	H	L	
A0801000025	LF002-1006020B	105±1.5	56±1	25±0.5	90±1	87.4-162.3
A0801000026	LF002-704025B	75.5±1	34±0.8	29±0.8	60±1	119-221
A0801000027	LF002-644020B	68±1	36.5±0.8	23.5±0.5	50±0.8	80-149
A0801000028	LF002-805030B	85.2±1	45.7±0.8	37.2±0.8	73±1	120.9-224.6
A0801000029	LF002-553730B	60±1	33.5±0.8	3.5±0.8	50±0.8	102.5-190.4

EMC磁环

特殊磁环系列-大电流磁环

High current magnetic core

性能曲线



详细规格

物料编码 Material code	裸芯标称尺寸 Bare core size	形状 Shape	L1(mm)	L2(mm)	H(mm)	AL-10kHz(μH)	导磁率 μ	工艺 Technique
A0801000049	50x30x30	圆形 Roundity	54	27	33.5	11.7±20%	5K	LFAS
A0801000050						23.4±20%	1W	LFAS
A0801000051						70.2±20%	3W	LFMI
A0801000030						23.4±20%	10W	LFNA

特点

耐饱和和特性好; 体积小; 用于工频变压器或精密电流互感器。

Good saturation resistance; Small size; Used for power frequency transformers or precision current transformers

FILTER PRODUCTS

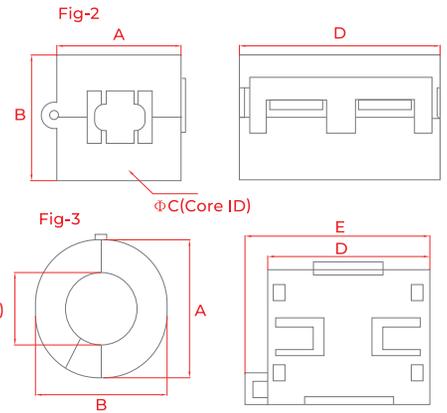
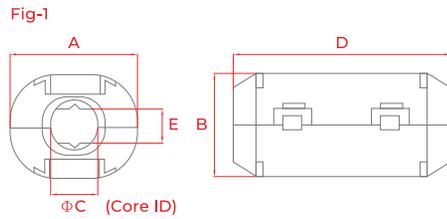
[滤波产品]

EMC磁环

特殊磁环系列-磁扣

Magnetic button

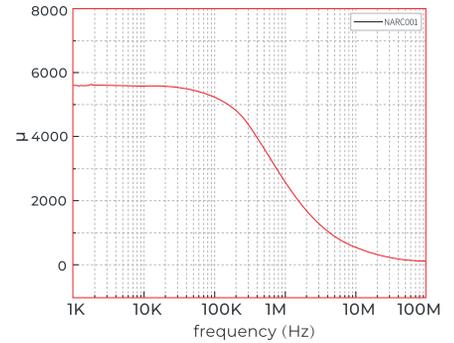
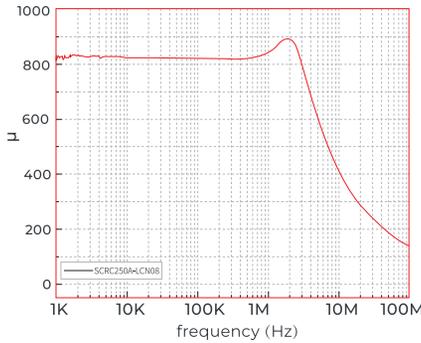
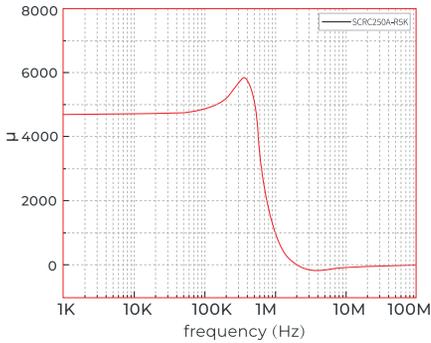
特征概览



高频滤波; 抗干扰;
屏蔽辐射; 易于安装, 可拆卸。

High frequency filtering; anti-interference;
shielding radiation; easy to install and removable.

性能曲线



详细规格

物料编码 Material code	规格 Specification	Fig	尺寸 Size					初导 μ
			Φ A	B	Φ C	D	E	
A1512000001	LF009-SCRC70A	3	15 \pm 1	14 \pm 1	7 \pm 0.8	18 \pm 1	22 \pm 1	800 \pm 25%
A1512000002	LF009-SCRC70B	1	16.5 \pm 1	15 \pm 1	7 \pm 0.8	30 \pm 1	5.5 \pm 1	800 \pm 25%
A1512000003	LF009-SCNF100	2	22 \pm 1	23.5 \pm 1	10 \pm 0.8	33 \pm 1	/	800 \pm 25%
A1512000004	LF009-SCNF190	2	29 \pm 1	29.5 \pm 1	19.5 \pm 1	42 \pm 1	/	800 \pm 25%
A1512000005	LF009-SCRC250A-LC-N08	1	55 \pm 1	/	23.8 \pm 1	42.6 \pm 1	25.7 \pm 1	800 \pm 25%
A1512000006	LF009-SCRC250A-R5K	1	55 \pm 1	/	23.8 \pm 1	42.6 \pm 1	25.7 \pm 1	5500 \pm 25%
A0812000001	LF009-NARC001	1	40.4 \pm 1	36.4 \pm 1	15.6 \pm 1	21.7 \pm 1	/	4500 \pm 25%

FILTER PRODUCTS

[滤波产品]

EMC磁环

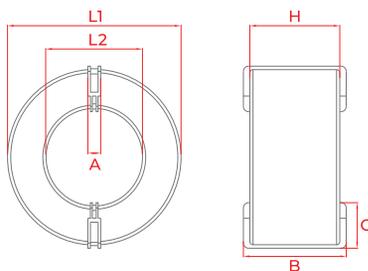
共模电感用磁环系列

Core for common mode inductance

共模电感用磁环显而易见就是专门为共模电感使用的磁环，此系列产品着重于100kHz的性能（导磁率），对此，我司特别推出两种不同性能（@100kHz，普通(μ 3.5w)/超薄(μ 4.5w)的磁环供客户选择。

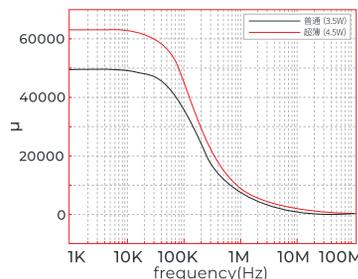
The magnetic core used for common mode inductors is obviously a magnetic core specifically designed for common mode inductors. This series of products focuses on the performance (permeability) of 100kHz. Therefore, our company has specially launched two different magnetic cores with different permeability (@100kHz, ordinary(μ 3.5w) /ultra-thin (μ 4.5w) for customers to choose from.

特征概览



高磁导率；低损耗；抗饱和能力强；体积小
High magnetic permeability; low loss; strong anti-saturation ability; small size

性能曲线



详细规格

物料编码 Material code	带材 Strip	规格 (电感专用) Specification	外形尺寸 Size (mm)						Ls (uH) @100kHz
			L1	L2	H	A	B	C	
A0801000031	普通 Ordinary	LF002-251610B	29	13.9	12.8	3.9	15.7	8.7	23.9±30%
A0801000032	超薄 Ultra-thin								30.8±30%
A0801000033	普通 Ordinary	LF002-281810B	31.4	15.2	13	3.7	14.7	9.0	23.7±30%
A0801000034	超薄 Ultra-thin								30.5±30%
A0801000035	普通 Ordinary	LF002-302015B	34	16.5	18.4	4.6	20.8	10.6	32.7±30%
A0801000036	超薄 Ultra-thin								42.1±30%
A0801000037	普通 Ordinary	LF002-322010B	35	16.7	13	4.0	16.7	11.0	25.2±30%
A0801000038	超薄 Ultra-thin								32.4±30%
A0801000039	普通 Ordinary	LF002-372315B	40	20	18.6	4.3	20.4	11.1	38.2±30%
A0801000040	超薄 Ultra-thin								49.1±30%
A0801000041	普通 Ordinary	LF002-402515B	44.4	21.5	19	5.1	24.9	14.2	37.8±30%
A0801000042	超薄 Ultra-thin								47.6±30%
A0801000043	普通 Ordinary	LF002-503215B	54.3	28.3	18.9	4.9	22.4	16.8	35.9±30%
A0801000044	超薄 Ultra-thin								46.2±30%
A0801000045	普通 Ordinary	LF002-503220B	53.8	28.4	24	/	/	/	47.9±30%
A0801000046	超薄 Ultra-thin								61.6±30%
A0801000047	普通 Ordinary	LF002-655025B	68.3	46.5	28.8	/	/	/	35.6±30%
A0801000048	超薄 Ultra-thin								45.7±30%

FILTER PRODUCTS

[滤波产品]

电感

共模电感系列

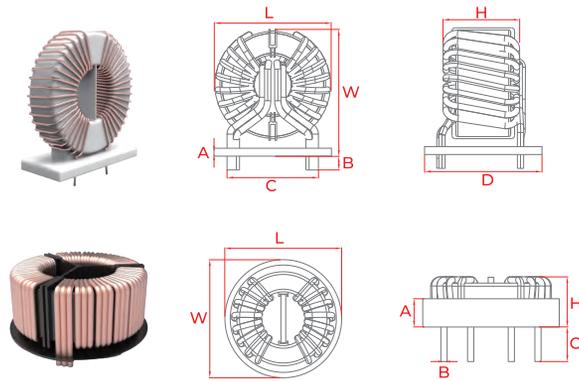
CMC core

共模电感是一种常用开关电源中过滤共模电磁干扰信号的器件。纳米晶共模电感在大的频率范围都有良好的抑制干扰能力，同时可以通过对绕线方式对调整可以针对性进行漏感设计，从而辅助降低差模干扰。对比传统材料，纳米晶高磁导率的特性可以采用更小的体积，更少的绕线圈数来实现客户需求，降低产品的综合成本。

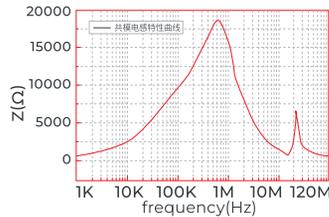
CMC is a kind of device that filters common mode electromagnetic interference signal in switching power supply. The nanocrystalline CMC have good interference suppression ability in a large frequency range, and the leakage sensing can be designed by adjusting the winding mode to help reduce the differential mode interference. Compared with traditional materials, the characteristics of high permeability of nanocrystalline can use smaller volumes and fewer coils to meet customer needs and reduce the comprehensive cost of products.

特征概览

在大的频率范围内有良好的衰减；漏感低，更好的性能稳定性；电感量偏差小；体积小，较少匝数可获得较大阻抗、电感；良好的温度稳定性，可以应用在宽的温度范围。
It has good attenuation in a large frequency range; low leakage inductance, better performance stability; small inductance deviation; small size, fewer turns can obtain larger impedance and inductance; good temperature stability, can be used in a wide temperature range.



共模电感产品性能曲线示例



详细规格

物料编码 Material code	规格 Specification	外形尺寸 Size			圈数 Turns	线径 Wire Diameter	感值Ls			电流I(A)	外观样式 Appearance	绕组 Winding
		L	W	H			1kHzAL(mH)	10kHzAL(mH)	100kHzAL(mH)			
A0106000001	LF003-251610-30mH7A	34	35.5	19.2	22	1	35min	25min	6.1min	7	立式Upright	两相 Two-phase
A0106000002	LF003-281810-20mH12A	37	37	20	23	1.3	25min	25min	6.2min	12	立式Upright	两相 Two-phase
A0106000003	LF003-302015-10mH15A	45	45	30	23	1.5	30min	30min	9.5min	15	立式Upright	两相 Two-phase
A0106000004	LF003-322010-2mH30A	40	40	22	5	2.0	2min	1.7min	0.54min	30	卧式Horizontal	两相 Two-phase
A0106000005	LF003-322010-2.6mH20A	46	50	24	13	1.8	7min	6min	2.6min	20	立式Upright	两相 Two-phase
A0106000006	LF003-372315-10mH20A	50	50	30	23	1.8	30min	25min	9.5min	20	立式Upright	两相 Two-phase
A0106000007	LF003-402515-10mH20A	44	51	32	12	2.0	18min	10min	2min	20	立式Upright	两相 Two-phase
A0106000008	LF003-402515-13mH20A	56	56	31	13	2.2	18min	13min	2min	20	卧式Horizontal	两相 Two-phase
A0106000009	LF003-402515-8mH10A	55	52	25	11	1.8	8min	7min	2min	10	立式Upright	三相 Three-phase
A0106000010	LF003-402520-8mH30A	53	55	35	13	2.3	17min	15min	1.5min	30	立式Upright	两相 Two-phase
A0106000011	LF003-503215-1.3mH30A	65	68	50	5	2.0	1.3min	1min	0.35min	30	立式Upright	四相 Four-phase
A0106000012	LF003-503215-2.5mH45A	65	65	35	11	2.1	2.5min	2min	1.3min	45	立式Upright	两相 Two-phase
A0106000013	LF003-503220-5mH30A	67	66	49	8	2.2	6min	5min	0.6min	30	立式Upright	四相 Four-phase
A0106000016	LF003-655025-1mH100A	88	77	38.5	5	2.8	1.5min	1min	0.5min	100	立式Upright	四相 Four-phase
A0106000017	LF003-503215-5mH50A	63	69	29	11	2.1	8min	5min	2min	50	立式Upright	两相 Two-phase
A0106000018	LF003-402515-5mH30A	55	58	30	8	2.3	5.5min	5min	1.2min	30	立式Upright	三相 Three-phase
A0106000019	LF003-503215-2mH100A	67	72	32	5	2.8	2.1min	2min	0.5min	100	立式Upright	两相 Two-phase
A0106000020	LF003-503215-2mH50A	62	62	30	6	1.8	2.5min	2min	0.6min	50	卧式Horizontal	三相 Three-phase
A0106000021	LF003-201208-10mH3A	29	29	16	15	0.8	11min	10min	2.5min	3	卧式Horizontal	两相 Two-phase
A0106000022	LF003-806320-2mH50A	103	92	32	6	2.8	2.2min	2min	0.5min	50	立式Upright	四相 Four-phase
A0106000023	LF003-806320-2mH100A	96	96	36	6	2.8	2.2min	2min	0.5min	100	卧式Horizontal	三相 Three-phase

FILTER PRODUCTS

[滤波产品]

滤波器

LCL二级滤波器系列

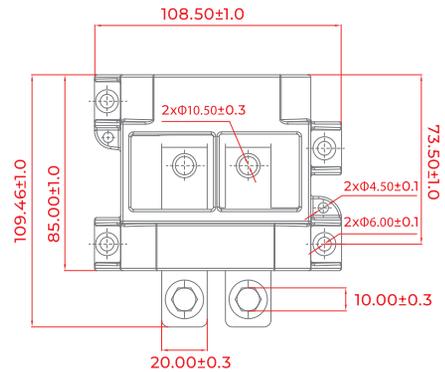
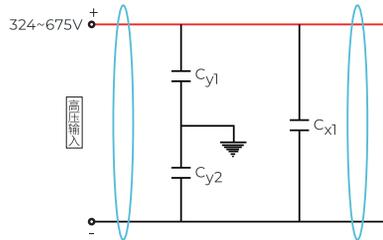
LCL two-stage filter

*可联系我司销售经理进行定制

LCL二级滤波器是一种常用于电力电子系统中的滤波器，它由三个部分组成分别是串联在电源侧的电感L1、连接在负载侧的电感L2以及连接在中间的电容C。其基本原理是利用电感对高频电流呈现高阻抗、电容对高频电流呈现低阻抗的特性，使滤波器对特定频率的谐波电流提供低阻抗通路，从而将谐波电流旁路到地，减少流入负载或电网的谐波含量，达到滤波的目的。

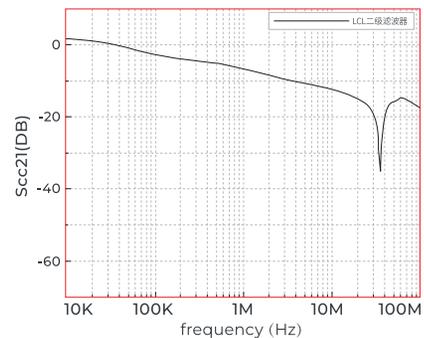
LCL secondary filter is a commonly used filter in power electronic systems, consisting of three parts: inductor L1 connected in series on the power supply side, inductor L2 connected on the load side, and capacitor C connected in the middle. The basic principle is to use the characteristics of inductance presenting high impedance to high-frequency current and capacitance presenting low impedance to high-frequency current, so that the filter provides a low impedance path for harmonic currents of specific frequencies, thereby bypassing the harmonic currents to ground, reducing the harmonic content flowing into the load or power grid, and achieving the purpose of filtering.

特征概览



元件名 Part name	参数 Parameters	数量 Qty
CX1	1uF	1
CY1,CY2	10nF	2

性能曲线



高效滤波性能；较小的体积和重量；较低的损耗；高频特性较好；良好的稳定性；较高的性价比。

High efficiency filtering performance; small size and weight; low loss; good high frequency characteristics; good stability; high cost performance.

FILTER PRODUCTS

[滤波产品]

滤波器

铜排焊接系列

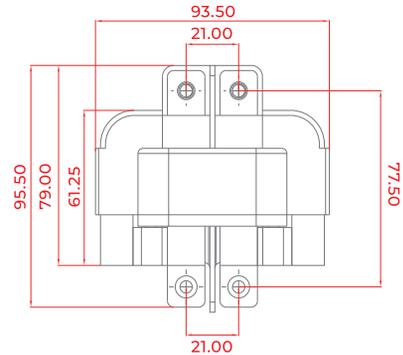
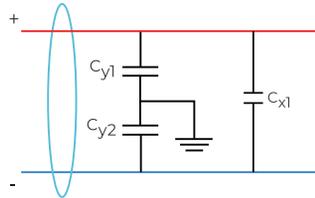
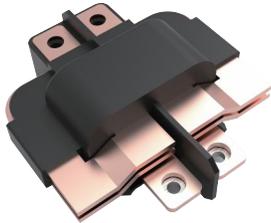
Copper bar welding

*可联系我司销售经理进行定制

铜排焊接滤波器是一种用于电子设备中抑制电磁干扰 (EMI) 的滤波器。它通常由铜排和电容等元件通过焊接工艺组装而成。一些三相滤波器在额定电流较大 (如 300A 以上) 时, 会采用铜排引出方式, 并且通过焊接工艺将铜排与内部的滤波电路元件连接起来, 这种滤波器就属于铜排焊接滤波器。这种滤波器在工业领域的电力设备中, 如大型电机、变频器、UPS 等设备的电磁兼容性设计中应用较为广泛, 可以有效抑制设备产生的电磁干扰, 同时防止外部干扰对设备的影响。

Copper bar welding filter is a type of filter used in electronic devices to suppress electromagnetic interference (EMI). It is usually assembled by soldering components such as copper bars and capacitors. Some three-phase filters use copper bars to lead out when the rated current is high (such as over 300A), and connect the copper bars to the internal filtering circuit components through welding technology. This type of filter belongs to copper bar welding filters. This type of filter is widely used in the electromagnetic compatibility design of power equipment in the industrial field, such as large motors, frequency converters, UPS, etc. It can effectively suppress the electromagnetic interference generated by the equipment and prevent external interference from affecting the equipment.

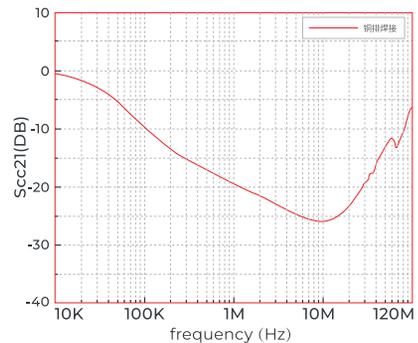
特征概览



元件名 Part name	参数 Parameters	数量 Qty
CX1	1uF	1
CY1,CY2	10nF	2

良好的电气性能; 结构紧凑;
 可靠性高; 散热性能好。
 Good electrical performance; compact structure; high reliability;
 good heat dissipation performance.

性能曲线



SHIELDING PRODUCT

[屏蔽产品]

屏蔽产品

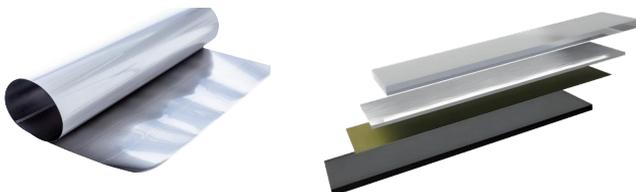
屏蔽片系列

Shielding sheet

屏蔽片是一种用于电磁屏蔽的金属薄片材料，具有良好的柔韧性和可加工性，可以根据不同的应用场景和设备形状进行裁剪、弯曲和冲压等加工，以适应各种复杂的屏蔽需求。其表面通常经过特殊处理，如镀锡、镀金等，以提高其导电性和耐腐蚀性。屏蔽片利用金属对电磁波的反射和吸收特性，将电磁辐射限制在一定的空间范围内，减少电磁干扰 (EMI) 对周围环境或其他电子元件的影响，同时也能防止外部电磁干扰进入设备内部，保证电子设备的正常运行。

Shielding sheet is a metal thin sheet material used for electromagnetic shielding, which has good flexibility and processability. It can be cut, bent, and stamped according to different application scenarios and equipment shapes to meet various complex shielding requirements. Its surface is usually treated with special treatments such as tin plating, gold plating, etc. to improve its conductivity and corrosion resistance. Shielding sheets utilize the reflection and absorption characteristics of metals to confine electromagnetic radiation within a certain spatial range, reducing the impact of electromagnetic interference (EMI) on the surrounding environment or other electronic components, while also preventing external electromagnetic interference from entering the interior of the device, ensuring the normal operation of electronic devices.

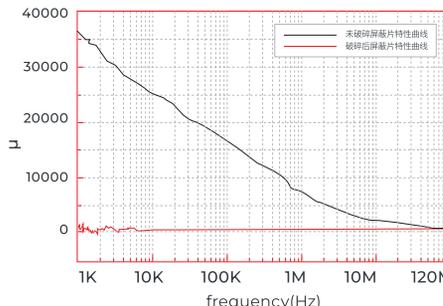
特征概览



良好的导电性；柔韧性、可加工性和轻薄性；高效的屏蔽性能；耐腐蚀性。

Good conductivity; flexibility, processability, and lightness; efficient shielding performance; corrosion resistance.

性能曲线



详细规格

物料编码 Material code	W(mm)	L(m)	μ (100kHz)	层数 Layers	带材厚度 Strip thickness (μ m)	成品厚度 Finished thickness(μ m)
A1303000009	62	10	660	1	14	71 \pm 10%
A1303000010			6k	1	14	71 \pm 10%
A1303000011			660	1	20	75 \pm 10%
A1303000012			6k	1	20	75 \pm 10%
A1303000013			660	2	14	89 \pm 10%
A1303000014			6k	2	14	89 \pm 10%
A1303000015			660	2	20	97 \pm 10%
A1303000016			6k	2	20	97 \pm 10%