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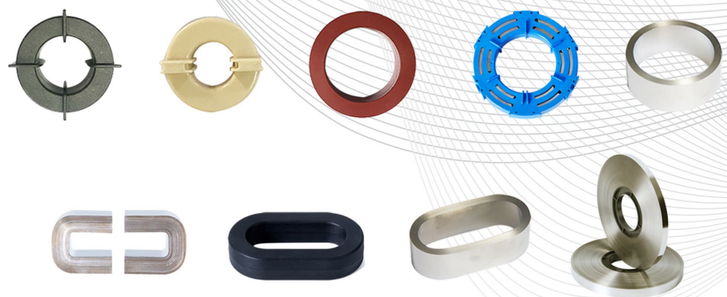
CHINA AMORPHOUS TECHNOLOGY CO.,LTD

佛山中研磁电科技股份有限公司



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电子版样册
CATALOG

■ 非晶、纳米晶带材&磁芯

■ AMORPHOUS & NANOCRYSTALLINE STRIP AND CORE

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公司简介
Company Profile

佛山中研磁电科技股份有限公司成立于 2008 年 7 月，公司位于珠三角工业重镇——佛山市南海区里水镇，自成立以来一直致力成为全球领先的磁性材料及其应用综合方案供应商，是一家专注于高性能非晶、纳米晶磁性材料及制品的研发、生产、销售和服务的国家级重点高新技术企业，主要产品有非晶、纳米晶带材，非晶、纳米晶粉末材料，非晶、纳米晶电子铁芯，电力电子元器件，车载防辐射垫、手机防辐射贴等产品，主要服务于国家节能环保、新材料、高端装备制造、新能源等战略新兴产业。

中研磁电是国内屈指可数的可以为客户提供整套磁性技术解决方案的企业，以客户为导向，以卓越的品质和服务持续为客户创造价值，不断提高设计、工艺水平和产品质量，提升反应速度，降低生产成本，使产品更加可靠，为成为客户最信赖的合作伙伴而不懈努力。

China Amorphous Technology Co., Ltd was founded in July 2008, which is located in Lishui of Foshan city, an important industrial town in Guangdong. CATECH has been committed to becoming the world's leading supplier of comprehensive solutions for soft magnetic materials. It is a national-level high-tech enterprise focusing on the research, development, production, sales and service of high-performance amorphous and nanocrystalline magnetic materials and products. Our main products are amorphous and nanocrystalline strip, powder, cores and electronic components, vehicle anti-radiation sheets, mobile phone anti-radiation stickers, etc.. It mainly serves the energy conservation and environmental protection, new materials, high-end equipment manufacturing, new energy vehicles and other strategic emerging industries.

CATECH is a domestic-numbered company that can provide a whole set of magnetic technology solutions. It is customer-oriented, continues to create value for customers with excellent quality and service. With improve design and process level, product quality and response speed. Reduce production costs, make products more reliable, and make unremitting efforts to become the most trusted partner of customers.

常用软磁材料参数对比

Comparison of Soft Magnetic Material

	分类 Item	名称 Name	饱和磁感应强度 T Saturate induction	初始磁导率 Initial permeability	电阻率 μΩ · cm Resistivity	居里温度℃ Curie temperature	加工形状及性能特点 Machining shape and performance characteristics
带状 Strip	铁基非晶 Fe-based Amorphous	1K101	1.56	0.25k～5k	130	400	仅卷绕、可切割，价格略高于硅钢，用于变压器时工作频率一般不超过20kHz，带材厚度一般在25-29μm。Can be wound and cut, price is slightly higher than silicon steel. Working frequency of transformers generally does not exceed 20kHz, thickness is 25-29μm.
	铁基纳米晶 Fe-based Nanocrystalline	1K107A	1.15	20k～80k	110	570	仅卷绕，一般用于逆变变压器铁芯，用于变压器时工作频率不超过50kHz、通过退火可生产F形B-H回线产品，带材厚度一般在23-30μm，三款牌号纳米晶中成本居中。Winding only, generally used for inverter transformer cores, used for transformers whose working frequency does not exceed 50kHz, can produce F-type B-H loop products through annealing, thickness is 23-30μm, medium cost.
		1K107B	1.2	20k-150k	110	570	仅卷绕，一般用于共模电感或仪表互感器铁芯、通过退火可生产F形、R形或Z形B-H回线产品，带材厚度一般在16-27μm，三款牌号纳米晶中成本最高。Winding only, generally used for EMC common mode inductors or instrument transformer cores. F-shaped, R-shaped or Z-shaped B-H loop products can be produced through annealing, thickness is 16-27μm, highest cost.
		1K107	1.25	80k-200k	90	570	仅卷绕，一般用于电力或仪表互感器铁芯、通过退火可生产R形或Z形B-H回线产品，带材厚度一般在28-40μm，三款牌号纳米晶中成本最低。Winding only, generally used for power or instrument transformer cores. R-shaped or Z-shaped B-H loop products can be produced through annealing, thickness is 28-40μm ,lowest cost.
	钴基非晶 Amorphous Co-based	1K202	0.55	60k	140	255	可卷绕、模切，一般用于制作高矩形比Z形B-H回线产品、磁传感器铁芯，GFCI铁芯、磁放大器铁芯，成本高 Can be wound and die-cut, generally used to make high square ratio Z-type B-H loop product, magnetic sensor cores, GFCI cores, magnetic amplifier cores, high cost.
		1K201	0.9	800～3000	140	485	可卷绕、一般用于制作低矩形比F型B-H回线产品，应用于仪表互感器铁芯、变压器铁芯，成本高 Can be wound, generally used to make low square ratio F-type B-H loop product, used in instrument transformers cores and transformer cores, high cost.

分类 Type	名称 Item	名称 Name	饱和磁感应强度 T Saturate induction	初始磁导率 Initial permeability	电阻率 μΩ · cm Resistivity	居里温度℃ Curie temperature	加工形状及性能特点 Machining shape and performance characteristics
带状 Strip	坡莫合金 FeNi	1J79、1J85	0.7	10k～100k	45	450	可冲片、叠片、卷绕，价格较高，产量大，使用温度高工作频率一般不超过20kHz,通过退火工艺可生产F形B-H回线产品，价格高. It can be punched,laminated and wound.High price,large output and high operating temperature. The operating frequency generally does not exceed 20kHz. F-shaped B-H loop product can be produced through annealing.
		1J50	1.5	10k～100k	45	450	可冲片、叠片、卷绕，价格较高，产量大，使用温度高工作频率一般不超过20kHz,通过退火工艺可生产Z形B-H回线产品，价格高. It can be punched,laminated and wound.High price,large output and high operating temperature. The operating frequency generally does not exceed 20kHz. Z-shaped B-H loop product can be produced through annealing.
	硅钢 FeSi	硅钢片 FeSi	1.8～2.1	～10k	45	750	可冲片、叠片、卷绕，价格便宜，产量大，使用温度高工作频率一般不超过400Hz. It can be punched,laminated and wound.Low price,large output and high operating temperature. The operating frequency generally does not exceed 400Hz.
粉芯 Powder core	铁氧体MnZn	/	0.35～0.4	1k-15k	10^4～10^5	150-250	产量大，价格低 Low price, large output.
	铁氧体NiZn	/	0.2～0.3	12-2k	10^6	110-350	高频损耗小 Low loss at high frequency.
	铁粉芯 Fe	/	1.4	10～75	11	700	价格低，F形B-H回线产品，用于差模电感，高频损耗大，一般用于20kHz以下 Low price, F-shaped B-H loop product, used for DMC, high loss at high frequency, generally used below 20kHz.
	铁硅 FeSi	/	1.3	14～90	50	700	价格低，用于差模电感，Bs高于铁硅铝 Low price, normally used in different mode choke, Bs is higher than FeSiAl.
	铁硅铝 FeSiAl	/	1.05	26～125	80	500	价格低，F形B-H回线产品，用于差模电感，损耗比铁粉芯小约80% Low price, F-shaped B-H loop product, used for DMC, loss is about 80% less than Fe powder core.
	MPP 铁镍钼 FeNiMo	/	0.75	14～550	120	500	粉芯中损耗最低，温度稳定性高，磁致伸缩系数≈0，在粉芯中价格最贵 Lowest consumption and highest price in powder core, high temperature stability, magnetostriction coefficient≈0.
	高磁通 HF 铁镍50 FeNi50	/	1.5	14～200	100	500	价格略低于铁镍钼 price is slightly lower than the MPP.
	非晶粉末铁芯 Amorphous powder core	/	1.56	60～90	10^6	400	环形、柱状、块体，适用于10k-50k，价格接近于铁硅 Ring, columnar, block, suitable for 10k-50k, price is close to FeSi.
	纳米晶粉末铁芯 Nanocrystalline powder core	/	1.2	60～125	10^6	570	环形、柱状、块体，适用于20kHz-100kHz，价格远低于高磁通 Ring, columnar, block, suitable for 20kHz-100kHz, price is far lower than H-F.

备注：*表中性能仅供客户初步设计选型用，具体性能参数以承认书为准。 *可根据客户要求制作各种环形、矩形、钳表形及其它形状的铁芯。

*The provided data is for customer's initial design guidelines only, please check the approval data sheet before ordering. *Toroidal, Oval, Clamp Shape or other customized designs are available.

常见计算公式
Calculation Formula

有效铁芯截面积 Ae 计算（限环形铁芯）
Effective Cross Section Area Ae (toroid core)

$$Ae = \frac{OD-ID}{200} \times HT \times K$$

- OD: 裸铁芯外径 Outer diameter of bare core (mm)
- ID: 裸铁芯内径 Inner diameter of bare core (mm)
- HT: 裸铁芯高度 Height of bare core (mm)
- K: 铁芯叠片系数 Lamination factor
- Ae：有效铁芯截面积 Effective cross section area (cm^2)

平均磁路长度 Le 计算（限环形铁芯）
Average Magnetic Path Length Le (toroid core)

$$Le = \frac{OD+ID}{20} \times \pi$$

- Le：平均磁路长度 Average magnetic path length (cm)

电感量 L 计算
Inductance Value L

$$L = AL \times N^2$$

- L: 电感量 Inductance value (μH)
- AL: 电感系数（单匝电感）Inductance coefficient (μH)
- N: 匝数 Turn

$$Ls = \frac{40\pi\mu' N^2 Ae}{Le}$$

- Ls: 串联电感量 Series Inductance (μH)

$$|\mu| = \sqrt{\mu'^2 + \mu''^2}$$

- |μ|: 振幅磁导率 Amplitude permeability(万 -Gs/Oe)
- μ': 实部磁导率 Real part permeability(万 -Gs/Oe)
- μ'' : 虚部磁导率 Imaginary part permeability(万 -Gs/Oe)

磁通密度 Bmax 计算
Magnetic Flux Density Bmax Calculation

$$B_{max} = \frac{E_{rms}10^5}{4.44 f A e N_2}$$

- Bmax：最大磁通密度 Maximum magnetic flux density (Gauss)
- Erms：正弦波有效电压值 Sine wave effective voltage value (mV)
- f：正弦波电压频率 Sine wave voltage frequency (Hz)
- N_2：次级匝数 Secondary turns

交流磁场强度 Hsin
Gnetic Field Strength Hsin

$$H_{sin} = \frac{\sqrt{2} N_1 I_{AC}}{Le}$$

- Hsin：正弦波磁场强度 Sine wave magnetic field strength (mA/cm)
- N1：初级匝数 Primary turns
- IAC：初级电流 Primary current (mA)

交流磁场强度 H1
AC Magnetic Field Strength H1

$$H_1 = 0.4\pi H_{sin} \times 10^{-3}$$

- H1: 交流磁场强度 AC magnetic field strength (Oe)

直流磁场强度
DC Magnetic Field Strength

$$H_{DC} = \frac{N * I_{DC}}{Le}$$

$$H_{oe} = 0.4\pi H_{DC} \times 10^{-3}$$

- IDC：直流电 DC curremt（mA）
- HDC: 直流磁场强度 DC magnetic field strength (mA/cm)
- Hoe: 直流磁场强度 DC magnetic field strength (Oe)

相对磁导率μr
Relative Permeability μr

$$\mu_r = \frac{B}{H_1}$$

- μr：相对磁导率 Relative permeability
- B：磁通密度 Magnetic flux density (Gauss)

数字电桥综合测试系统
LCR Testing Device

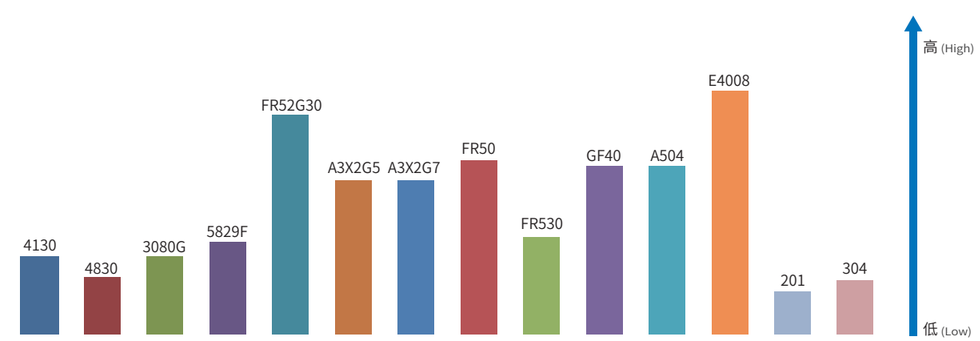
“ 数字电桥综合测试系统 ”应用于铁芯参数的测试，可快速测量多个磁性能参数、磁导率、模拟铁芯损耗等，满足一些客户需要测量μ’、μ”、损耗 P 等生产批量测试的要求。

LCR testing device can be used to test the core parameters, it can quickly measure several magnetic performance parameters, permeability, simulated core loss, etc., can meet the requirements of some customers who need to measure parameters u' ,u'', loss P and other production batch tests.

铁芯常用护盒参数及应用
Protective Housing Specification

护盒材质 Protective Housing Material	材质牌号 Mode	耐温等级 Temperature resistance grade	环保等级 Environmental protection grade	常用颜色 Color	应用产品 Application
PBT	5829F	130°C	RoHS 无卤 无红磷 RoHS halogen-free no red phosphorus	白色、黑色 White, Black	各种铁芯外壳 Protective Housing of various cores
	4830	130°C	RoHS 有卤 无红磷 RoHS halogen no red phosphorus	白色、黑色 White, Black	
	3080G	130°C			
	4130	130°C			
PA66	FR52G30	140°C	RoHS 无卤 无红磷 RoHS halogen-free no red phosphorus	黑色 Black	
	A3X2G5	130°C	RoHS 无卤 有红磷 RoHS halogen-free red phosphorus	棕红色 Brown-red	
	A3X2G7	130°C	RoHS 无卤 有红磷 RoHS halogen-free red phosphorus	棕红色 Brown-red	
	FR50	140°C	RoHS 有卤 无红磷 RoHS halogen no red phosphorus	黑色 Black	
PET	FR530	155°C	RoHS 有卤 无红磷 RoHS halogen no red phosphorus	米黄色 Maize-yellow	

护盒材质 Protective Housing Material	材质牌号 Mode	耐温等级 Temperature resistance grade	环保等级 Environmental protection grade	常用颜色 Color	应用产品 Application
PPS	GF40	180°C	RoHS 有卤 无红磷 RoHS halogen no red phosphorus	黑色 Black	各种铁芯外壳 Protective Housing of various cores
	A504				
LCP	E4008	200°C	RoHS 有卤 RoHS halogen	黑色 Black	护盒壁厚大于 1.2mm Wall thickness of the protective case is >1.2mm
团状模塑料 Dough(Bulk) molding compound	DMC(BMC)	150°C	RoHS	白色、黑色 White, Black	护盒壁厚大于 1.8mm, 尺寸大于 70mm Wall thickness of the protective housing is >1.8mm, size is >70mm
不锈钢 Stainless steel	201	750°C	达不到 RoHS 标准 Not up to RoHS standard	本色：金属色 Natural color: metallic	尺寸大于 100mm 的电力互感器铁芯 Power transformer core with size > 100mm
	304	750°C	RoHS	本色：金属色 Natural color: metallic	



铁芯常用护盒原材料成本对比图表（成本对比仅供参考，不含加工费）

Raw material cost comparison chart of core case (Cost comparison is for reference only, excluding processing fee)

铁基纳米晶带材
Fe-based Nanocrystalline Strip

铁基纳米晶合金由铁、硅、硼、铌、铜等组成。含有 Cu 和 Nb 的铁基非晶合金在晶化温度以上退火时，会形成非常细小的晶粒组织，晶粒尺寸仅有 10—20 纳米，这种非晶合金经过特殊的晶化退火而形成的晶态材料称为纳米晶合金。纳米晶材料具有高饱和磁感应强度、高导磁率、低矫顽力、低损耗及良好的稳定性、高强韧性及耐磨耐蚀等优异特性，作为在金属软磁材料中具有最佳的性价比的纳米晶合金材料，可以替代硅钢、坡莫合金和铁氧体成为中高频变压器、互感器、共模电感元器件的理想材料。

Fe-based Nanocrystalline alloys are based on Fe with Si and B with further additions of Nb and Cu. A subsequent heat treatment at crystallization temperature degree transforms the initially amorphous microstructure of the tape into the desired nanocrystalline state, this being fine crystalline grains (grains diameter of 10 - 20 nm only) .

Nanocrystalline alloys combine high saturation flux density, high permeability, lowest coercivity, low core losses and good stability, high obdurability, and wear corrosion resistance, that make Nanocrystalline material as the best choice of soft magnetic materials and vastly superior in many aspects such as medium high frequency transformer, current transformer, CMC, can replace silicon steel, permalloy and ferrite materials.

应用领域 Application

- 共模滤波电感铁芯
  EMC Common mode core
- 逆变变压器铁芯
  Inverter transformer core
- 电流互感器（零序、漏保）铁芯
  Current transformer CT core
- 磁放大器、尖峰抑制器、饱和电感铁芯
  Magnetic amplifier, peak suppressor, saturated inductance core
- 无线充电隔磁片
  Wireless charging electromagnetic shielding foil

1K107B 纳米晶薄带性能 Performance of 1K107B Nanocrystalline Strip

项目 Item	性能指标（参考值） Performance (Reference)	项目 Item	性能指标（参考值） Performance (Reference)
饱和磁感应强度 Bs (T) Saturate Induction	1.20	磁致伸缩系数λs Magnetostriction	2.0×10^{-6}
居里温度 Tc (°C) Curie Temperature	570	密度 ρ (g/cm^3) Density	7.3
晶化温度 Tx (°C) Crystallization Temperature	515	电阻率δ (μΩ · cm) Resistivity	110
硬度 Hv Hardness	880	矫顽力 Hc (A/m) Coercivity	<2.0
带材厚度 μm Thickness	14 ～ 27	铁芯填充系数 K Core filling coefficient	0.78
磁导率 μ' @1kHz (Gs/Oe) Permeability	20k ～ 130k	铁损 P 20kHz/0.5T (W/kg) Core loss	<20
磁导率 μ' @10kHz (Gs/Oe) Permeability	18k ～ 120k	铁损 P 100kHz/0.3T (W/kg) Core loss	90
磁导率 μ' @100kHz (Gs/Oe) Permeability	16k ～ 35k	\	\

1K107B 纳米晶薄带产品规格 Specification of 1K107B Nanocrystalline Strip

产品规格编码说明	J	1K107B	030	23	2
CATECH P/N Description	剪切带 Slitting Strip	纳米晶 B 料 Nanocrystalline B Strip	带宽 (mm) Width	带厚 (μm) Thickness	厚度公差 (μm) Thickness Tolerance

产品规格编码说明：J1K107B-030-232 铁基纳米晶 1K107B 剪切带，宽度 3.0mm，厚度 23±2.0μm。

Description: J1K107B-030-232, 1K107B Nanocrystalline slitting strip, width is 3.0mm, thickness is 23±2.0μm.

常用带材规格宽度 Common Strip Width

带材宽度 Width (mm)	2.0	3.0	3.2	3.5	4.0	4.5	5.0	6.0	6.5	7.0	8.0	10.0
带材宽度 Width (mm)	12	13	15	20	25	30	35	40	45	50	55	60

常用带材规格说明 Common Specifications

中研产品规格 CATECH P/N	带材宽度 (mm) Width	带材厚度 (μm) Thickness
J1K107B-030-16-2	3.0	14-16
J1K107B-030-18-2		16-18
J1K107B-030-182		18±2
J1K107B-030-202		20±2
J1K107B-030-232		23±2
J1K107B-030-252		25±2

注 Note:

1、带材最宽为 60mm。
Max width is 60mm.

2、可以根据用户需求，提供其它规格的带材。
Other customized size strip is available.

3、规范性引用文件：《GB/T 19345.1-2017》非晶、纳米晶合金 第 2 部分：铁基纳米晶软磁合金带材，纳米晶牌号 1K107B 等同于 GB/T 19345.1-2017 类别 H 型带材。
Normative reference:《GB/T 19345.1-2017》Amorphous and Nanocrystalline alloys Part 2: Fe-based nanocrystalline soft magnetic alloy strip.Nanocrystalline grade 1K107B is equivalent to GB/T 19345.1-2017 category H-type strip.

4、1K107B 带材性能等同于日立金属 FT-3, VAC 500F。
Strip performance of 1K107B is equivalent to Hitachi FT-3, VAC 500F.

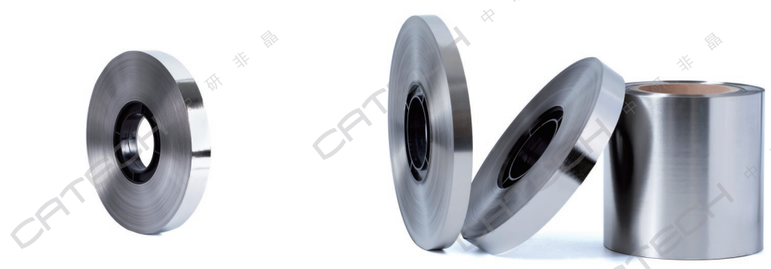
铁基非晶带材
Fe-based Amorphous Strip

铁基非晶带材具有非晶态结构，以及高的磁导率、高饱和磁感应强度、低铁损和优良的稳定性，满足了当今电子产品向高频化、大电流、小型化、节能化的发展需要，可以替代硅钢、坡莫合金和铁氧体，广泛应用于电力、电子产品中。

非晶是一种新型软磁合金材料，它采用国际先进的超急冷技术将熔融金属以每秒百万度的速度直接冷却，形成厚度为 27±2μm 的非晶体薄带，得到原子排列组合上具有短程有序，长程无序特点的非晶合金组织，在微观结构上完全不同于传统的金属和合金材料。因此，在物理性能、化学性能、机械性能等诸多方面具有传统金属材料无可比拟的优异特性。另外，在制备工艺方面也完全不同于传统的冶金工艺，由钢液一步制成非晶薄带，省去了传统冶金工艺中的铸、锻、中间退火、轧制等多道工序，节省了大量能源，且无污染物排放，非晶合金被誉为环保、节能、高效的新型绿色材料。

Amorphous strip is a new soft magnetic material. It is produced through the advanced technology of rapid solidification of molten metal at a cooling rate of about a million °C/sec. During this process the metal is rapidly quenched as a form of strip with 27±2μm thickness, and the micro-structure of the alloy is the amorphous due to the high quenching rate.

Fe-based amorphous strip has many advantages, such as high permeability, high saturate induction, high electrical resistivity, high density, low core loss and good stability. It can replace the materials of silicon steel, permalloy and ferrite. It is widely used in electronics products that high accuracy and good stability are the most required.



应用领域 Application

- 非晶 C 型、非晶 E 型、非晶块等铁芯
  Amorphous C core, E core, blocked core
- 恒电感铁芯、PFC 电感铁芯
  Constant inductor core, PFC inductor core
- 中频变压器铁芯 / 配电变压器铁芯
  Mid-frequency transformer core, distribution transformer core
- 非晶电磁屏蔽箔片
  Electromagnetic shielding foil
- 非晶粉末铁芯原材料
  Raw materials of amorphous powder core

性能指标 Performance Index

项目 Item	性能指标(参考值) Performance (Reference)	项目 Item	性能指标(参考值) Performance (Reference)
饱和磁感应强度 Bs (T) Saturate Induction	1.56	饱和磁致伸缩系数λs Magnetostriction	27×10^{-6}
居里温度 Tc (°C) Curie Temperature	400	密度 ρ (g/cm³) Density	7.18
晶化温度 Tx (°C) Crystallization Temperature	515	电阻率δ (μΩ · cm) Resistivity	130
硬度 Hv Hardness	960	矫顽力 Hc (A/m) Coercivity	<4
带材厚度 (μm) Thickness	27±2	铁芯填充系数 K Core filling coefficient	0.87
磁导率 μ' @1kHz(Gs/Oe) Permeability	245-5000	铁损 P16kHz/37mT (W/kg) Core loss	1.0

产品规格编码说明	J	1K101	250	27	2
CATECH P/N Description	J- 剪切 J-Slitting Strip	非晶牌号 Amorphous Model	带宽 (mm) Width	带厚 (μm) Thickness	厚度公差 (μm) Thickness Tolerance

产品规格编码说明：J1K101-250-272 铁基非晶 1K101 剪切带，宽度 25.0mm，厚度 27±2μm。

Description: J1K101-250-272, amorphous slitting strip 1K101, width is 25.0mm, thickness is 27±2μm.

常用带材规格宽度 Common Strip Width

带材宽度 Width (mm)	3.0	3.2	4.5	5	6	6.5	8	10	15	20	25	30
带材宽度 Width (mm)	35	40	45	50	55	60	70	80	90	100	110	120

注 Note:

1、带材厚度 27±2μm，最宽为 120mm。
Strip thickness is 27±2μm, Max width is 120mm.

2、可以根据用户需求，提供其它宽度规格的带材。
Other customized size strip is available.

3、规范性引用文件：《GB/T 19345.1-2017》非晶、纳米晶合金 第 1 部分：铁基非晶软磁合金带材，非晶牌号 1K101 等同于 GB/T 19345.1-2017 类别 S 型带材。
Normative reference:《GB/T 19345.1-2017》Amorphous and Nanocrystalline alloys Part 1: Fe-based amorphous soft magnetic alloy strip.Amorphous grade 1K101 is equivalent to GB/T 19345.1-2017 category S-type strip.

4、1K101 带材等同于日立金属 2605SA-1。
Strip performance of 1K101 is equivalent to Hitachi 2605SA-1.

钴基非晶带材 1K202

1K202 Co-based Amorphous Strip

应用领域 Application

- 磁放大器（饱和电感）铁芯、尖峰抑制器铁芯
  Magnetic amplifier (saturated inductance) , peak suppressor core
- 漏电互感器铁芯、计量互感器铁芯
  Leakage transformer core, metering transformer core
- 传感器铁芯 Current sensor core
- 变压器铁芯 Transformer core

项目 Item	性能指标(参考值) Performance (Reference)	项目 Item	性能指标(参考值) Performance (Reference)
饱和磁感应强度 Bs (T) Saturate Induction	0.55	饱和磁致伸缩系数λs Magnetostriction	$<0.2\times10^{-6}$
居里温度 Tc (°C) Curie Temperature	255	密度 ρ (g/cm³) Density	7.6
晶化温度 Tx (°C) Crystallization Temperature	/	电阻率δ (μΩ · cm) Resistivity	140
硬度 Hv Hardness	/	矫顽力 Hc (A/m) Coercivity	<0.13
带材厚度 (μm) Thickness	16～27	铁芯填充系数 K Core filling coefficient	0.8
磁导率 μ' @1kHz(Gs/Oe) Permeability	60k	铁损 P16kHz/37mT (W/kg) Core loss	<65

产品规格编码说明	J	1k202	038	20	2
CATECH P/N Description	J- 剪切 J-Slitting Strip	钴基非晶牌号 Co-based Amorphous Mode	带宽 Width	带厚 Thickness	厚度公差 Thickness Tolerance

产品规格编码说明：J1K202-038-202 钴基非晶 1k202，剪切带宽度 3.8mm，厚度 20±2μm。

Description: J1K202-038-202 cobalt-based amorphous slitting strip 1K202, width is 3.8mm, thickness is 20±2μm.

常用钴基带材规格宽度 Common Strip Width

带材宽度 Width (mm)	1.0	2.0	3.0	3.8	4.0	4.5	5.0	6.0	6.5	8.0	10.0	15	20

常用带材规格说明 Common Specifications

中研产品规格 CATECH P/N	带材宽度 (mm) Width	带材厚度 (μm) Thickness
J1K202-030-182	3.0	18±2
J1K202-030-202		20±2
J1K202-030-232		23±2
J1K202-030-252		25±2

注 Note:

1、钴基带材厚度公差 ±2μm，一般最宽为 20mm。
Strip thickness tolerance is ±2μm, Max width is 20mm.

2、可以根据用户需求，提供其它宽度规格的带材。
Other customized size strip is available.

3、1K202 带材性能等同于日立金属的 2714A。
Strip performance of 1K202 is equivalent to Hitachi 2714A.

钴基非晶带材 1K201

1K201 Co-based Amorphous Strip

应用领域 Application

- 抗直流互感器铁芯 Anti-DC current transformer core
- 开关变压器铁芯 Switch transformer core

项目 Item	性能指标(参考值) Performance (Reference)	项目 Item	性能指标(参考值) Performance (Reference)
饱和磁感应强度 Bs (T) Saturate Induction	0.9	饱和磁致伸缩系数λs Magnetostriction	$<0.2\times10^{-6}$
居里温度 Tc (°C) Curie Temperature	485	密度 ρ (g/cm³) Density	7.6
晶化温度 Tx (°C) Crystallization Temperature	510	电阻率δ (μΩ · cm) Resistivity	140
硬度 Hv Hardness	/	矫顽力 Hc (A/m) Coercivity	<1.0
带材厚度 (μm) Thickness	16～25	铁芯填充系数 K Core filling coefficient	0.8
磁导率 μ' @1kHz(Gs/Oe) Permeability	800～2500	铁损 P16kHz/37mT (W/kg) Core loss	/

产品规格编码说明	J	1K201	038	20	2
CATECH P/N Description	J- 剪切 J-Slitting strip	钴基非晶牌号 Co-based Amorphous Model	带宽 Width Thickness	带厚 Thickness	厚度公差 Thickness tolerance

产品规格编码说明：J1K201-038-202 钴基非晶 1K201，剪切带宽度 3.8mm，厚度 20±2μm。

Description: J1K201-038-202 cobalt-based amorphous slitting strip 1K201, width is 3.8mm, thickness is 20±2μm.

常用钴基带材规格宽度 Common Strip Width

带材宽度 Width (mm)	1.0	2.0	3.0	3.8	4.0	4.5	5.0	6.0	6.5	8.0	10.0	15.0	20

常用带材规格说明 Common Specifications

中研产品规格 CATECH P/N	带材宽度 (mm) Width	带材厚度 (μm) Thickness
J1K201-030-182	3.0	18±2
J1K201-030-202		20±2
J1K201-030-232		23±2
J1K201-030-252		25±2

注 Note:

1、钴基带材厚度公差 ±2μm，一般最宽为 20mm;
Strip thickness tolerance is ±2μm, Max width is 20mm.

2、可以根据用户需求，提供其它宽度规格的带材。
Other customized size strip is available.

3、1K201 带材性能等同日立金属 2705，VAC 6150。
Strip performance of 1K201 is equivalent to Hitachi 2705, VAC 6150.

铁基纳米晶共模滤波电感铁芯
Fe-based Nanocrystalline CMC Core

应用领域 Application

- 汽车部件（OBC，DC-DC，电控，电池监测，方向盘电动转向助力，空调压缩机控制部件等）
  Automotive parts（OBC, DC-DC, electric control, battery monitoring, EPS, AC compressor control components）
- 新能源（光伏逆变器，风力发电机，充电桩）
  New energy applications（PV Inverter, wind driven generator, EV charging station）
- 消费电子（平板电视，空调，电脑，游戏机等）
  Consumer Appliance（TV, AC, computer, game machine）
- 医疗器械（核磁共振仪，呼吸机）
  Medical equipments（MRI machine, ventilator）
- 其他（服务器电源，不间断电源 UPS，地铁）
  Other electronics（Server power supply, UPS, subway）

性能特点 Features

1 高 Bs，高μi 值 High Bs, high μi

高 Bs（1.2T），高μi 值（＞80000），具有高的抗饱和能力，能有效的降低电感尺寸
High Bs (1.2T), high μi (＞80000), and high anti-saturation ability, that can effectively reduce the core geometry.

2 优良的频率特性 Excellent frequency

在较宽频率范围内具有出色的磁导率特性
Excellent permeability characteristics in a wide frequency range.

3 稳定的温度特性 Stable temperature characteristic

在 -40°C~150°C温度区间内性能变化率 ±10%
The performance change rate is ±10% during temperature -40°C~150°C.

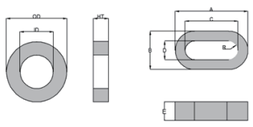
4 优良高频率阻抗特性 Excellent high frequency impedance characteristic

见 P25 纳米晶共模电感与锰锌铁氧体阻抗性能对比
Impedance performance comparison of Nanocrystalline CMC and Mn-Zn ferrite in P24

5 磁滞伸缩系数小，噪音低 Low magnetostriction coefficient, low noise

饱和磁滞伸缩系数接近于零，λs≈0
Saturated magnetostriction coefficient is close to zero, λs≈0

产品规格编码说明	NC	0001	L	W	01
CATECH P/N Description	纳米晶铁芯 Nanocrystalline Core	规格序号 Serial No.	低剩磁 Low Br	封装方式：w- 白色护盒 /b- 黑色护盒 c- 喷涂 /t- 不锈钢护盒 Encapsulation method: w-white plastic case b-black plastic case, c-coating t-stainless steel case	特征码 Feature



中研型号 CATECH P/N	环形铁芯尺寸 Toroidal core dimensions		截面积 Cross section area	磁路长度 Magnetic path length	铁芯重量 Weight	磁导率 Permeability (μ3' at 10kHz)		单匝电感量 AL Nominal μ H	
	铁芯尺寸 Bare core dimensions OD * ID * H (mm)	成品尺寸 Finished core dimensions OD * ID * H (mm)	Ae (cm^2)	le (cm)	m (g)	指定范围值 Specified value	设计参考值 Design refer	10kHz	100kHz
NC-0178-L-w	9.8*6.5*4.5	11.2*4.9*5.9	0.06	2.6	1.1	65600≤μ_3' ≤127000	87000	25.5	6.4
NC-0010-L-w-03	12*8*5	13.8*6.7*6.4	0.07	3.1	1.7	72000≤μ_3' ≤139000	97000	30	6.5
NC-0226-L-w	12.5*10*5	14.6*8.2*6.8	0.05	3.5	1.3	42200≤μ_3' ≤81500	56000	10.0	3.6
NC-0039-L-w	15*10*5	17.0*8.2*6.7	0.09	3.9	2.6	72000≤μ_3' ≤139000	94000	27.0	6.7
NC-0217-L-w	16*10*6	17.9*8.1*8.1	0.14	4.1	4	72000≤μ_3' ≤135000	97000	43.0	10.1
NC-0217-L-w-01					4	18000≤μ_3' ≤35000	23700	11.7	6.5
NC-0179-L-w	17.5*12.6*6	19.0*10.8*8.0	0.12	4.7	4.1	72000≤μ_3' ≤135000	96000	30.0	6.9
NC-0044-L-w-01	19*15*10	21.1*13.3*12.1	0.16	5.3	6.3	72000≤μ_3' ≤130000	96000	36.1	8.8
NC-0038-L-w-21	20*12.5*8	21.8*10.9*9.8	0.24	5.1	9	72000≤μ_3' ≤135000	97000	55.2	13.6
NC-0038-L-w-01					9	18100≤μ_3' ≤35000	23700	14.3	9.1
NC-0007-L-w	20*12*10	22.6*10.4*12.3	0.32	5.0	11.6	63000≤μ_3' ≤122000	85000	68	16.8
NC-0007-L-w-01						14300≤μ_3' ≤30000	20000	16	13.6
NC-0056-L-HF-02	22*17*10	24.5*15.2*12.5	0.20	6.1	8.8	66000≤μ_3' ≤129000	90000	35.6	8.5
NC-0089-L-w-06	28*18*10	30.5*15.9*12.4	0.40	7.2	21	55000≤μ_3' ≤122000	106000	55	15
NC-0088-L-w-03	25*20*10	27.5*17.2*12.3	0.20	7.1	10.4	60000≤μ_3' ≤116000	80000	28.4	7.3
NC-0141-L-w-18	25*16*10	27.5*13.8*12.5	0.36	6.4	17	72000≤μ_3' ≤135000	95000	65.6	15.5
NC-0141-L-w-02					17	15000≤μ_3' ≤35000	24300	17.0	11.5
NC-0141-L-w-04					17	3300≤μ_3' ≤6400(100kHz)	4400	3.2	3.1

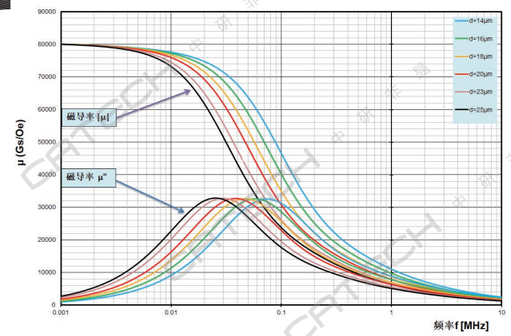
中研型号 CATECH P/N	环形铁芯尺寸 Core dimensions		截面积 Cross section area	磁路长度 Magnetic path length	铁芯重量 Weight	磁导率 Permeability (μ3' at 10kHz)		单匝电感量 AL Nominal μ H	
	铁芯尺寸 Bare core dimensions OD * ID * H (mm)	成品尺寸 Finished core dimensions OD * ID * H (mm)	Ae (cm^2)	le (cm)	m (g)	指定范围值 Specified value	设计参考值 Design refer	10kHz	100kHz
NC-0008-L-w-01	30*20*10	33.2*17.7*13.3	0.40	7.9	23	72000≤μ_3' ≤135000	103000	59.3	14.0
NC-0008-L-w-14					23	19500≤μ_3' ≤35200	25500	15.5	11.1
NC-0008-L-w-11					23	3280≤μ_3' ≤6400(100kHz)	4400	2.9	2.8
NC-0058-L-b	30*20*15	33.5*17.7*17.8	0.57	7.9	33	72000≤μ_3' ≤135000	96000	88.0	20.0
NC-0071-L-y	30*20*20	33.3*17.9*24.0	0.80	7.9	45	64500≤μ_3' ≤125000	95000	118.5	30.0
NC-0014-L-b-07	32*20*15	34.6*17.9*17.9	0.70	8	42	66000≤μ_3' ≤128000	90000	97	23
NC-0187-L-w-04	33*23*15	35.7*21.1*17.9	0.58	8.79	38	58000≤μ_3' ≤116000	80000	66.8	18.3
NC-0893-L-w	33*22*20	36.2*19*23.8	0.83	8.6	55	μ_3' ≥68000	90000	112.3	27.4
NC-0175-L-b-01	37.8*24.2*15	40.7*21.7*18.2	0.76	9.4	56	72000≤μ_3' ≤135000	94000	96.4	22.5
NC-0015-L-w-03	40*32*15	44.7*28.8*18.7	0.46	11.3	38	72000≤μ_3' ≤135000	9500	47.2	11.1
NC-0015-L-w-04					38	15000≤μ_3' ≤29000	20000	12.2	7.9
NC-0015-L-w-10					38	3160≤μ_3' ≤6300(100kHz)	4300	2.3	2.2
NC-0023-L-b-02	40*25*15	43.7*21.7*18.8	0.86	10.2	64	72000≤μ_3' ≤135000	94000	101.0	23.1
NC-0023-L-b-22					64	17850≤μ_3' ≤34500	23700	25.4	17.2
NC-0003-L-b-01	40*25*20	44.7*21.6*24.6	1.17	10.2	86	50000≤μ_3' ≤95600	66000	95	28
NC-0177-L-b	45*30*15	47.5*27.5*17.8	0.86	11.8	74	72000≤μ_3' ≤135000	96000	87.5	20.3
NC-0177-L-s-01					74	20000≤μ_3' ≤38700	26700	24.3	15.9
NC-0177-L-b-02					74	12900≤μ_3' ≤25000	17200	15.7	14.3
NC-0070-L-b-03	46*27*20	48.7*24.6*22.3	1.44	11.5	120	μ_3' ≥50000	80000	130	32
NC-0078-L-b-04	46*27*25	48.7*24.6*28.3	1.85	11.5	157	μ_3' ≥60000	80000	160	39

中研型号 CATECH P/N	环形铁芯尺寸 Core dimensions		截面积 Cross section area	磁路长度 Magnetic path length	铁芯重量 Weight	磁导率 Permeability (μ3' at 10kHz)		单匝电感量 AL Nominal μ H	
	铁芯尺寸 Bare core dimensions OD * ID * H (mm)	成品尺寸 Finished core dimensions OD * ID * H (mm)	Ae (cm)	le (cm)	m (g)	指定范围值 Specified value	设计参考值 Design refer	10kHz	100kHz
NC-0016-L-w-05	50*40*20	53.5*36.9*23.0	0.76	14.1	79	50000≤μ_3' ≤97000	66000	45.3	14.0
NC-0016-L-w-08					79	20000≤μ_3' ≤38700	26600	18.0	10.0
NC-0837-L-b	54*40*18	57.1*36.7*21.7	1.00	14.7	107	72000≤μ_3' ≤139000	97000	81.1	19.2
NC-0017-L-b	63*50*25	67.3*46.5*28.4	1.24	17.8	161	50000≤μ_3' ≤97000	67000	58.6	18.1
NC-0017-L-b-01					161	20000≤μ_3' ≤38700	26500	23.3	13.5
NC-0017-L-b-02					161	2850≤μ_3' ≤5510(100kHz)	3700	3.3	3.2
NC-0147-L-b	80*50*20	84.0*46.7*25.0	2.28	20.4	342	71250≤μ_3' ≤137000	95000	94.0	28.0
NC-0147-L-b-02					342	18700≤μ_3' ≤36300	24900	35.0	24.0
NC-0147-L-b-04					342	μ_3' ≥5170	5170	9.6	9.2
NC-0121-L-b	80*50*25	83.7*47.3*29.0	2.93	20.4	430	μ_3' ≥55000	80000	144.0	36.0
NC-0096-L-b-01	90*60*20	94.0*55.2*24.0	2.28	23.6	395	50000≤μ_3' ≤97000	67000	81.0	25.1
NC-0096-L-b-02					400	2800≤μ_3' ≤5400(100kHz)	3700	4.6	4.5
NC-0188-L-w	100*80*25	107.6*70.2*30.6	1.90	28.3	379	50000≤μ_3' ≤97000	67000	56.3	16.9
NC-0188-L-w-01					379	12900≤μ_3' ≤25000	17200	14.5	13.1
NC-0144-L-b	102*76*25	108.0*70.0*30.0	2.47	28.0	508	50000≤μ_3' ≤97000	67000	68.8	21.6
NC-0144-L-b-02					508	12900≤μ_3' ≤25000	17200	19.1	17.2
NC-0144-L-b-01					515	2840≤μ_3' ≤5480(100kHz)	3800	4.3	4.2
NC-0176-L-b	120*85*25	125.9*79.9*30.3	0.86	11.8	810	μ_3' ≥60000	80000	120.0	27.0
NC-0176-L-b-01						12900≤μ_3' ≤25000	17200	23	21
NC-0032-L-b-03	160*130*25	165.0*125.0*30.0	2.74	45.6	917	27600≤μ_3' ≤59590	36000	26.8	13.7
NC-0032-L-b-02			2.74	45.6	917	20000≤μ_3' ≤38700	26500	20.1	13.1
NC-0032-L-b			2.74	45.6	917	12900≤μ_3' ≤25000	17200	12.9	11.7
NC-0032-L-b-04			2.85	45.6	967	2800≤μ_3' ≤5400(100kHZ)	3700	3.0	2.9

备注：*表中性能仅供客户初步设计选型用，具体性能参数以承认书为准。 *可根据客户要求制作各种环形、矩形、钳表形及其它形状的铁芯。

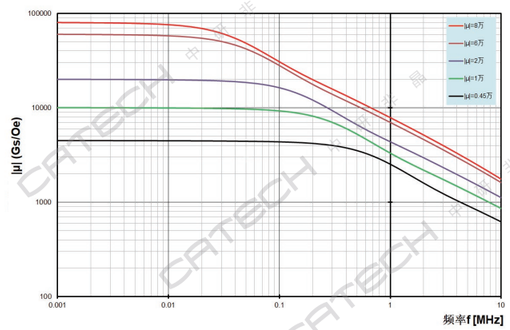
*The provided data is for customer's initial design guidelines only, please check the approval data sheet before ordering. *Toroidal, Oval, Clamp Shape or other customized designs are available.

性能曲线 Performance Curve



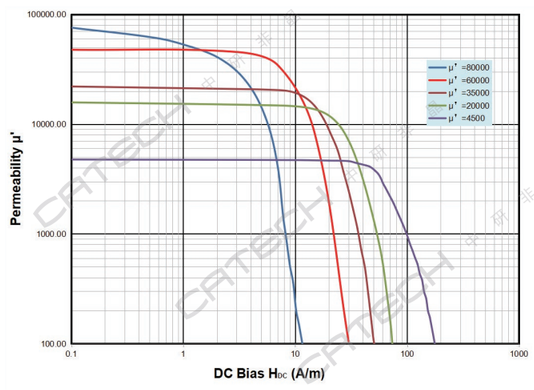
图一： 1K107B 8 万磁导率 |μ|,材料厚度 VS 频率特性曲线

Fig.1 Material Thickness and Permeability |μ| VS Frequency of 1K107B Nanocrystalline (Fe-based)



图二： 铁基纳米晶磁导率 |μ| VS 频率特性曲线

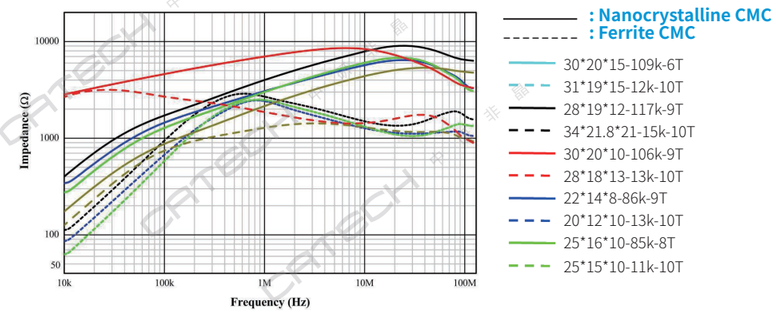
Fig.2 Permeability |μ| VS Frequency of Nanocrystalline (Fe-based)



图三：铁基纳米晶磁导率 μ' VS 直流偏置特性曲线

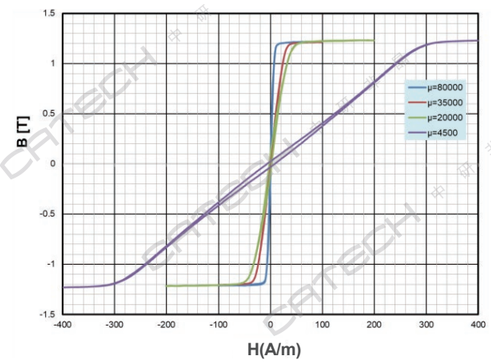
Fig.3 Permeability μ' VS DC Bias of Nanocrystalline (Fe-based)

性能曲线 Performance Curve



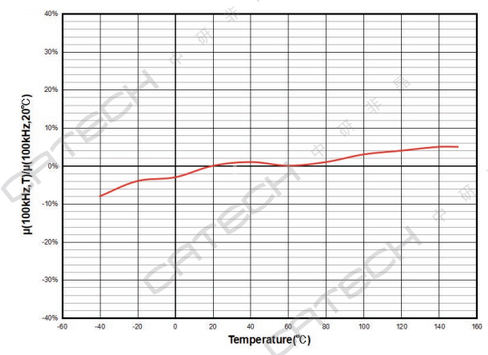
图四：纳米晶共模电感与锰锌铁氧体的阻抗性能对比

Fig.4 Comparison of Impedance of Nanocrystalline CMC and Ferrite CMC



图五：不同类型磁导率磁滞回线

Fig.5 Magnetic Hysteresis Loop for Different Permeability



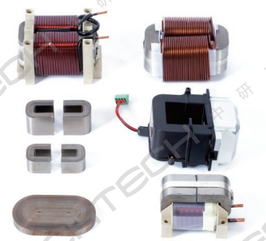
图六：磁导率 VS 温度变化曲线

Fig.6 Permeability VS Temperature Variation Curve

铁基非晶C型铁芯
Fe-based Amorphous C-Core

应用领域 Application

- 光伏逆变器用非晶电抗器
  Reactor core for PV inverter
- 高频大功率开关电源中的输出滤波电抗器
  Filter reactor of high frequency high power switching power supply
- 中高频开关电源变压器
  Med-high frequency switching power supply
- 不间断电源中的主变压器
  Major transformer of UPS power supply



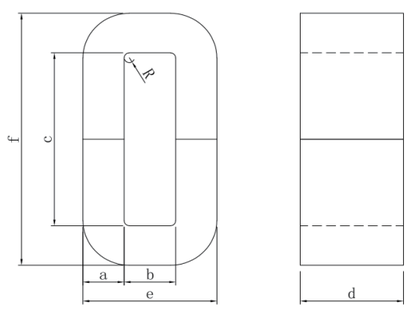
性能特点 Features

- 高饱和磁感应强度－减小铁芯体积
  High saturate induction intensity-reduce core volume
- 矩形切割结构－便于线圈的装配
  Rectangular cutting structure-easy to assemble the coil
- 铁芯分段式－优良的抗直流偏置饱和能力
  Magnetic core segmentation-excellent resistance to DC bias saturation
- 低损耗－减小温升(16kHz，37mT P≤1.0 W/kg)
  Low loss-reduce temperature rise
- 良好的稳定性 - 可在 -40~130°C长时间工作
  Good stability-stable work at -40~130°C
- 磁导率：1000-1500 Gs/Oe
  Permeability: 1000-1500 Gs/Oe

产品规格编码说明	CA	CC	100
CATECH P/N Description	中研磁电 CATECH	C 型铁芯 C-Core	规格序列号 Serial No.

a- 铁芯叠厚　b- 铁芯窗宽　c- 铁芯窗高　d- 铁芯高度
e- 铁芯宽度　f- 铁芯长度　Le- 磁路长度　Ae- 铁芯有效截面积
Aw- 铁芯窗口面积　Weight- 重量

a-core build　b-window width　c-window height　d-core height
e-core width　f-core length　Le-length of magnetic path
Ae-Effective cross section area　Aw-window area　Weight-Weight in Grams



中研型号 CATECH P/N	叠厚 Core build (mm)		窗口宽度 Window width (mm) ref	窗口长度 Window length (mm) ref	铁芯高度 Core height (mm)		铁芯宽度 Core width (mm)		铁芯长度 Core length (mm)		内圆角 R angle	磁路长度 Magnetic path length (cm)	有效截面积 Effective cross section area(cm²)	窗口面积 Window area(cm²)	重量 Weight (g)
	a	±	b	c	d	±	e	±	f	±	R	Le	Ae	Aw	m
CACC-0.9	5.5	0.5	5.4	16.4	20	0.5	16.4	1	27.4	1.5	2.75	5.62	0.98	0.89	39
CACC-4	9	0.5	10	32.8	15	0.5	28	1	50.8	1.5	1	11.22	1.20	3.28	97
CACC-4B	9	0.5	11	33	15	0.5	29	1	51	1.5	1	11.46	1.20	3.63	99
CACC-6.3	10	0.5	11	33	20	0.5	31	1	53	2	1	11.77	1.78	3.63	150
CACC-8	11	0.8	13	30	20	0.5	35	1	52	2	1	11.88	1.96	3.90	167
CACC-10	11	0.8	13	40	20	0.5	35	1	62	2	2	13.71	1.96	5.20	193
CACC-12	8	0.5	14	31	40	1	30	1	47	1.5	2	11.17	2.85	4.34	228
CACC-16A	11	0.8	13	40	25	0.5	35	1	62	2	2	13.71	2.45	5.20	241
CACC-16B	11	0.8	13	50	25	0.5	35	1	72	2	2	15.71	2.45	6.50	276
CACC-20	11	0.8	13	50	30	0.5	35	1	72	2	2	15.71	2.94	6.50	331
CACC-20B	11	0.8	13.6	50	30	0.5	35.6	1	72	2	2	15.83	2.94	6.80	334
CACC-20C	11	0.8	13.3	50	30	0.5	35.3	1	72	2	2	15.77	2.94	6.65	333
CACC-20D	11.7	0.8	14	50	30	0.5	37.4	1	73.4	2	2	16.13	3.12	7.00	362
CACC-20E	11	0.8	14	50	30	0.5	36	1	72	2	2	15.91	2.94	7.00	336
CACC-21	11	0.8	17	32	40	1	39	1	54	2	2	12.91	3.92	5.44	363
CACC-21B	10	0.8	17	32	40	1	37	1	52	2	2	12.60	3.56	5.44	322
CACC-25	13	0.8	15	56	25	0.5	41	1	82	2	2	17.94	2.89	8.40	373
CACC-25B	13.8	0.8	16	56	25	0.5	43.6	1	83.6	2	2	18.39	3.07	8.96	405
CACC-26	16	1	40	45	20	0.5	72	1	77	2	2	21.68	2.85	18.00	443
CACC-26B	16	1	20	50	20	0.5	52	1	82	2	2	18.68	2.85	10.00	382
CACC-30	8	0.5	20	54	40	1	36	1	70	2	2	16.97	2.85	10.80	347
CACC-32	13	0.8	15	56	30	0.5	41	1	82	2	2	17.94	3.47	8.40	447
CACC-32C	13	0.8	15.6	56	30	0.5	41.6	1	82	2	2	18.06	3.47	8.74	450
CACC-32D	13	0.8	15.3	56.6	30	0.5	41.3	1	82.6	2	2	18.12	3.47	8.66	452
CACC-32E	13.5	0.8	16	56	30	0.5	43	1	83	2	2	18.30	3.60	8.96	474
CACC-33	10	0.8	20	56	40	1	40	1	76	2	2	18.00	3.56	11.20	460
CACC-34	15	0.8	30	60	25	0.5	60	1	90	2	2	22.37	3.34	18.00	536
CACC-35	13	0.8	15	61	30	0.5	41	1	87	2	2	18.94	3.47	9.15	472
CACC-39	16	1	20	45	30	0.5	52	1	77	2	2	17.68	4.27	9.00	542
CACC-40	13	0.8	15	56	35	1	41	1	82	2	2	17.94	4.05	8.40	522
CACC-40B	13	0.8	15	78	35	1	41	1	104	3	2	22.34	4.05	11.70	650
CACC-40C	13	0.8	16	56	35	1	42	1	82	2	2	18.14	4.05	8.96	527
CACC-40D	14	0.8	16	56	35	1	44	1	84	2	2	18.45	4.36	8.96	578
CACC-50	16	1	20	70	25	0.5	52	1	102	3	2	22.68	3.56	14.00	580
CACC-50B	16	1	21	73	25	0.5	53	1	105	3	2	23.48	3.56	15.33	600
CACC-60	14.4	0.8	31.2	52	30	0.5	60	1	80.8	2	2	20.82	3.84	16.22	575
CACC-60B	16	1	20	60	35	1	52	1	92	2	2	20.68	4.98	12.00	740
CACC-62	14.4	0.8	41.2	62	30	0.5	70	1	90.8	2	2	24.82	3.84	25.54	685
CACC-62B	15	0.8	15	45	70	1	45	1	75	2	2	16.37	9.35	6.75	1098
CACC-63	16	1	20	70	30	0.5	52	1	102	3	2	22.68	4.27	14.00	696
CACC-63B	16	1	20	69	30	0.5	52	1	101	3	2	22.48	4.27	13.80	690
CACC-64	16	1	20	43	45	1	52	1	75	2	2	17.28	6.41	8.60	795
CACC-64B	16	1	20	48	45	1	52	1	80	2	2	18.28	6.41	9.60	841
CACC-65	16	1	20	58	45	1	52	1	90	2	2	20.28	6.41	11.60	933

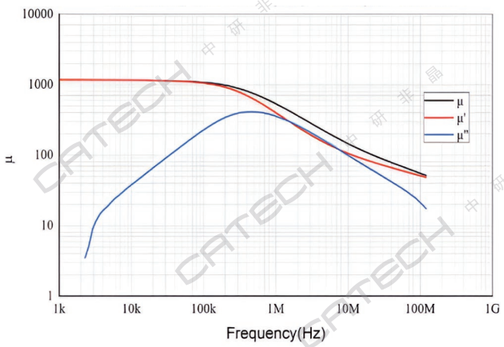
中研型号 CATECH P/N	叠厚 Core build (mm)		窗口宽度 Window width (mm) ref	窗口长度 Window length (mm) ref	铁芯高度 Core height (mm)		铁芯宽度 Core width (mm)		铁芯长度 Core length (mm)		内圆角 R angle	磁路长度 Magnetic path length (cm)	有效截面积 Effective cross section area(cm²)	窗口面积 Window area	重量 Weight (g)
	a	±	b	c	d	±	e	±	f	±	R	Le	Ae	Aw	m
CACC-66	15	0.8	29	60	40	1	59	1	90	2	2	22.17	5.34	17.40	850
CACC-66B	14.4	0.8	51.2	82	30	0.5	80	1	110.8	3	2	30.82	3.84	41.98	851
CACC-70	20	1	40	60	30	0.5	80	1	100	3	2	25.94	5.34	24.00	995
CACC-70B	10.5	0.8	15	125	40	1	36	1	146	3	3	30.78	3.74	18.75	826
CACC-71	14.4	0.8	31.2	62	30	0.5	60	1	90.8	2	2	22.82	3.84	19.34	630
CACC-74	20	1	26	63	30	0.5	66	1	103	3	2	23.74	5.34	16.38	910
CACC-75	20	1	20	85	25	0.5	60	1	125	3	2	26.94	4.45	17.00	861
CACC-76	12	0.8	45	105	15	0.5	69	1	129	3	2	33.43	1.60	47.25	384
CACC-80	16	1	20	70	40	1	52	1	102	3	2	22.68	5.70	14.00	928
CACC-80B	16	1	21	73	40	1	53	1	105	3	2	23.48	5.70	15.33	960
CACC-84	12	0.8	30	60	20	0.5	54	1	84	2	2	21.43	2.14	18.00	329
CACC-100	16	1	20	70	45	1	52	1	102	3	2	22.68	6.41	14.00	1044
CACC-100B	16	1	21	73	45	1	53	1	105	3	2	23.48	6.41	15.33	1080
CACC-100C	16	1	21.5	70	45	1	53.5	1	102	3	2	22.98	6.41	15.05	1057
CACC-110	16	1	25	75	45	1	57	1	107	3	2	24.68	6.41	18.75	1136
CACC-117	20	1	35	77	20	0.5	75	1	117	3	2	28.34	3.56	26.95	724
CACC-117B-3CUT	15.5	0.8	20	75	55	1	51	1	106	3	2	23.53	7.59	15.00	1282
CACC-119	16	1	20	70	60	1	52	1	102	3	2	22.68	8.54	14.00	1392
CACC-121-3CUT	15	0.8	22	75	55	1	52	1	105	3	2	23.77	7.34	16.50	1253
CACC-125	19	1	25	83	35	1	63	1	121	3	2	27.23	5.92	20.75	1157
CACC-127	20	1	30	60	40	1	70	1	100	3	2	23.94	7.12	18.00	1224
CACC-128	22	1	35	84	25	0.5	79	1	128	3	2	30.37	4.90	29.40	1067
CACC-131	20	1	35	105	20	0.5	75	1	145	3	2	33.94	3.56	36.75	868
CACC-135	20	1	40	92	30	0.5	80	1	132	3	3	32.17	5.34	36.80	1233
CACC-137	10.5	0.8	35	105	40	1	56	1	126	3	2	30.96	3.74	36.75	831
CACC-140	26	1	45	88	30	0.5	97	1	140	3	3	34.25	6.94	39.60	1707
CACC-140A	26	1	45	88	40	1	97	1	140	3	3	34.25	9.26	39.60	2276
CACC-157-3CUT	20	1	20	80	55	1	60	1	120	3	2	25.94	9.79	16.00	1823
CACC-160	19	1	25	83	40	1	63	1	121	3	2	27.23	6.76	20.75	1322
CACC-P160A-2CUT	19	1	25	72	40	1	63	1	110	3	2	25.03	6.76	18.00	1215
CACC-168S	20.4	1	30	154.2	20	0.5	70.8	1	195	3	2	42.91	3.63	46.26	1119
CACC-169-3CUT	20	1	21	82	55	1	61	1	122	3	2	26.54	9.79	17.22	1866
CACC-170	16.5	1	40	72	40	1	73	1	105	3	3	27.07	5.87	28.80	1142
CACC-180	25	1	35	65	30	0.5	85	1	115	3	2	27.51	6.68	22.75	1318
CACC-193	40	1.5	50	113	40	1	130	2	193	3	4	44.48	14.24	56.50	4548
CACC-200	19	1	25	83	50	1	63	1	121	3	2	27.23	8.46	20.75	1653
CACC-200A-2CUT	20	1	25	82	50	1	65	1	122	3	2	27.34	8.90	20.50	1747
CACC-200B	14	0.8	35	93	68.3	1	63	1	121	3	2	29.65	8.51	32.55	1812
CACC-210	40	1.5	50	130	50	1	130	2	210	3	4	47.88	17.80	65.00	6119
CACC-245	16.5	1	38	74	60	1	71	1	107	3	2	27.24	8.81	28.12	1723
CACC-250	19	1	25	90	60	1	63	1	128	3	2	28.63	10.15	22.50	2085
CACC-270	20	1	30	70	60	1	70	1	110	3	2	25.94	10.68	21.00	1989
CACC-275	25	1	35	78	50	1	85	1	128	3	2	30.11	11.13	27.30	2405
CACC-276	21	1	35	105	40	1	77	1	147	3	2	34.25	7.48	36.75	1839

中研型号 CATECH P/N	叠厚 Core build (mm)		窗口宽度 Window width (mm) ref	窗口长度 Window length (mm) ref	铁芯高度 Core height (mm)		铁芯宽度 Core width (mm)		铁芯长度 Core length (mm)		内圆角 R angle	磁路长度 Magnetic path length (cm)	有效截面积 Effective cross section area(cm²)	窗口面积 Window area	重量 Weight (g)
	a	±	b	c	d	±	e	±	f	±	R	Le	Ae	Aw	m
CACC-276B	13	1	35	105	65	1	61	1	131	3	2	31.74	7.52	36.75	1714
CACC-320	22	1	35	85	50	1	79	1	129	3	3	30.40	9.79	29.75	2137
CACC-320B	22	1	35	105	50	1	79	1	149	3	3	34.40	9.79	36.75	2418
CACC-327	25	1	35	105	40	1	85	1	155	3	2	35.51	8.90	36.75	2269
CACC-367S	25.8	1	67	97.8	25	0.5	118.6	2	149.4	3	3	40.55	5.74	65.53	1671
CACC-385	20	1	35	90.5	70	1	75	1	130.5	3	3	30.87	12.46	31.68	2762
CACC-400	22	1	35	85	65	1	79	1	129	3	3	30.40	12.73	29.75	2778
CACC-455	17	1	40	84	90	1.5	74	1	118	3	2	29.80	13.62	33.60	2913
CACC-465	25	1	40	105	50	1	90	1	155	3	3	36.34	11.13	42.00	2903
CACC-500	25	1	40	85	55	1	90	1	135	3	3	32.34	12.24	34.00	2841
CACC-509B	23.7	1	25	78	40	1	72.4	1	125.4	3	2	27.70	8.44	19.50	1678
CACC-509D	24.7	1	25	78	40	1	74.4	1	127.4	2	3	27.84	8.79	19.50	1758
CACC-531	25	1	35	105	65	1	85	1	155	3	2	35.51	14.46	36.75	3687
CACC-549	42	1.5	35	105	40	1	119	2	189	3	4	40.51	14.95	36.75	4349
CACC-557	30	1	35	100	60	1	95	1	160	3	3	35.91	16.02	35.00	4130
CACC-570A	25	1	40	100	45	1	90	1	150	3	3	35.34	10.01	40.00	2541
CACC-570B	25	1	40	100	50	1	90	1	150	3	3	35.34	11.13	40.00	2823
CACC-630	25	1	40	85	70	1	90	1	135	3	3	32.34	15.58	34.00	3616
CACC-650	40	1.5	40	115	40	1	120	2	195	3	4	42.88	14.24	46.00	4384
CACC-660	40	1.5	80	80	40	1	160	2	160	3	4	43.88	14.24	64.00	4486
CACC-695	40	1.5	35	94	60	1	115	2	174	3	4	37.68	21.36	32.90	5779
CACC-787	40	1.5	40	85	65	1	120	2	165	3	4	36.88	23.14	34.00	6127
CACC-800A	25	1	40	85	85	1.5	90	1	135	3	4	32.17	18.91	34.00	4368
CACC-800B	30	1	40	95	85	1.5	100	2	155	3	4	35.74	22.70	38.00	5824
CACC-802	32	1	60	118	40	1	124	2	182	3	4	44.97	11.39	70.80	3678
CACC-836	25	1	50	126	60	1	100	2	176	3	4	42.37	13.35	63.00	4061
CACC-920	21.5	1	60	90	90	1.5	103	2	133	3	4	36.07	17.22	54.00	4460
CACC-1000	33	1	40	105	85	1.5	106	2	171	3	4	38.68	24.96	42.00	6933
CACC-1050	40	1.5	50	100	70	1	130	2	180	3	4	41.88	24.92	50.00	7493
CACC-1200	40	1.5	79	130	70	1	159	2	210	4	5	53.51	24.92	102.70	9574
CACC-1300	40	1.5	86	150	70	1	166	2	230	4	5	58.91	24.92	129.00	10540
CACC-1400	40	1.5	64	120	80	1.5	144	2	200	4	5	48.51	28.48	76.80	9919
CACC-1500	40	1.5	64	160	80	1.5	144	2	240	4	5	56.51	28.48	102.40	11555
CACC-1600	45	1.5	45	145	95	1.5	135	2	235	4	4	51.45	38.05	65.25	14055
CACC-1658	50	1.5	60	138	45	1	160	2	238	4	5	54.45	20.03	82.80	7829
CACC-1800	33	1	75	240	60	1	141	2	306	4	5	72.51	17.62	180.00	9174
CACC-2000	60	1.5	60	150	35	1	180	3	270	4	5	59.99	18.69	90.00	8050
CACC-2950	28	1	78	128	120	1.5	134	2	184	4	5	49.14	29.90	99.84	10550
CACC-3604	40	1.5	64	201	80	1	144	2	281	4	5	64.71	28.48	128.64	13232
CACC-10000	75	1.5	50	150	142	1.5	200	3	300	4	5	62.70	94.79	75.00	42673
CACC-18855	80	1.5	100	193	142	1.5	260	3	353	4	5	82.87	101.10	193.00	60161
CACC-25000	80	1.5	60	180	80	1.5	220	3	340	4	5	72.27	56.96	108.00	29558
CACC-30000	75	1.5	72	385	75	1	222	3	535	4	5	114.10	50.06	277.20	41014

备注：*表中性能仅供客户初步设计选型用，具体性能参数以承认书为准。 *可根据客户要求制作各种环形、矩形、钳表形及其它形状的铁芯。

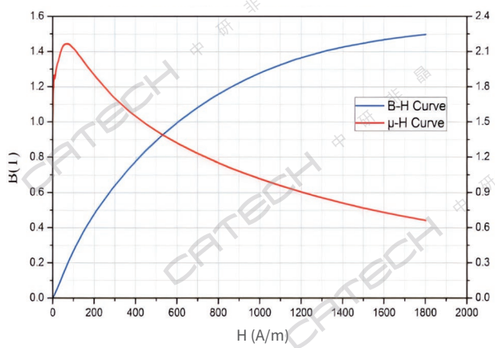
*The provided data is for customer's initial design guidelines only, please check the approval data sheet before ordering. *Toroidal, Oval, Clamp Shape or other customized designs are available.

非晶 CACC 系列铁芯典型电磁性能曲线 Typical electromagnetic performance curve for CACC core in Iron-based Amorphous



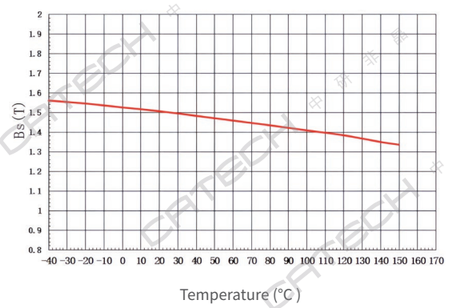
图一：非晶 CACC 系列铁芯磁导率与频率曲线的关系

The Permeability Curve With Frequency Of Amorphous CACC Core



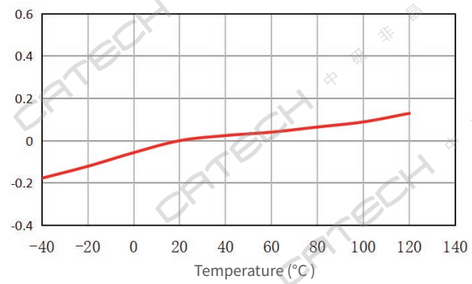
图二：非晶 CACC 系列铁芯静态磁化曲线与磁导率曲线

The B-H Curve And μ-H Curve Of Amorphous CACC Core



图三：非晶 CACC 系列铁芯饱和磁密与温度变化曲线

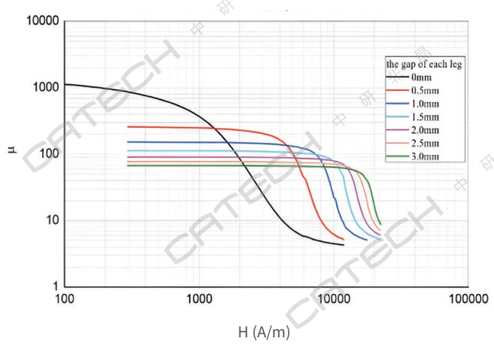
The Relative Change For BS VS Temperature Of Amorphous CACC Core



图四：非晶 CACC 系列铁芯的磁导率与温度的曲线变化

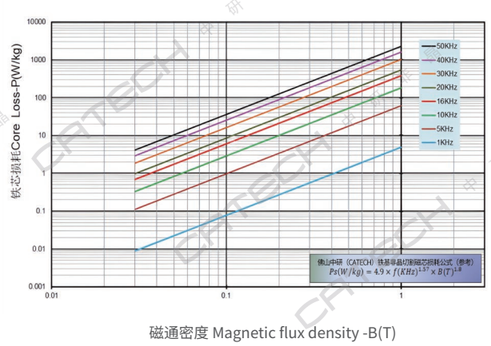
The Relative Change For μ vs Temperature Of Amorphous CACC Core

(Test @ 1K101 10K)



图五：非晶 CACC 系列铁芯直流偏置特性曲线

The DC-Bias Curve Of Amorphous CACC Core



图六：非晶 CACC 系列铁芯损耗曲线

The Core Loss Of Amorphous CACC Core

铁基纳米晶C型铁芯

Fe-based Nanocrystalline C Core

应用领域 Application

- 中频变压器
  Ntermediate frequency transformer
- 轨道交通的辅助电源变压器
  Auxiliary power transformer for rail transit
- 新能源汽车中的电感
  Inductor for new energy vehicles
- 取电变压器
  Power transformer

性能特点 Features

- 低损耗(20kHz，0.05T P≤0.5W/kg)
  Low core loss (20kHz，0.05T P≤0.5W/kg)
- 高磁导率(10000-15000 Gs/Oe)
  High permeability (10000-15000 Gs/Oe)
- 低磁滞噪音
  Low hysteresis noise

产品规格编码说明	CA	CC	100	NR
CATECH P/N Description	中研磁电 CATECH	C 型铁芯 C-core	规格序列号 Serial No.	纳米晶 Nanocrystalline

中研型号 CATECH P/N	叠厚 Core build (mm)		窗口宽度 Window width (mm) ref	窗口长度 Window length (mm) ref	铁芯高度 Core height (mm)		铁芯宽度 Core width (mm)		铁芯长度 Core length (mm)		内圆角 R angle	磁路长度 Magnetic path length (cm)	有效截面积 Effective cross section area(cm²)	窗口面积 Window area	重量 Weight (g)
	a	±	b	c	d	±	e	±	f	±	R	Le	Ae	Aw	m
CACC-4NR	9	0.5	10	32.8	15	0.5	28	1	50.8	1.5	1	11.22	1.07	3.28	87
CACC-6.3NR	10	0.5	11	33	20	0.5	31	1	53	2	1	11.77	1.58	3.63	135
CACC-8NR	11	0.8	13	30	20	0.5	35	1	52	2	1	11.88	1.74	3.90	150
CACC-10NR	11	0.8	13	40	20	0.5	35	1	62	2	2	13.71	1.74	5.20	173
CACC-12NR	8	0.5	14	31	40	1	30	1	47	1.5	2	11.17	2.53	4.34	205
CACC-16ANR	11	0.8	13	40	25	0.5	35	1	62	2	2	13.71	2.17	5.20	216
CACC-16BNR	11	0.8	13	50	25	0.5	35	1	72	2	2	15.71	2.17	6.50	247
CACC-20NR	11	0.8	13	50	30	0.5	35	1	72	2	2	15.71	2.61	6.50	297
CACC-25NR	13	0.8	15	56	25	0.5	41	1	82	2	2	17.94	2.57	8.40	334
CACC-26NR	16	1	40	45	20	0.5	72	1	77	2	2	21.68	2.53	18.00	397
CACC-32NR	13	0.8	15	56	30	0.5	41	1	82	2	2	17.94	3.08	8.40	401
CACC-40NR	13	0.8	15	56	35	1	41	1	82	2	2	17.94	3.59	8.40	468
CACC-50NR	16	1	20	70	25	0.5	52	1	102	3	2	22.68	3.16	14.00	520
CACC-63NR	16	1	20	70	30	0.5	52	1	102	3	2	22.68	3.79	14.00	624
CACC-64NR	16	1	20	43	45	1	52	1	75	2	2	17.28	5.69	8.60	713
CACC-65NR	16	1	20	58	45	1	52	1	90	2	2	20.28	5.69	11.60	836
CACC-66NR	15	0.8	29	60	40	1	59	1	90	2	2	22.17	4.74	17.40	762

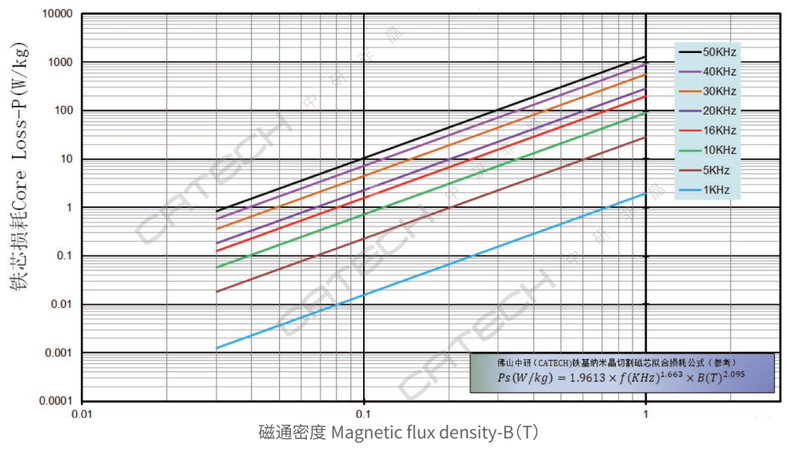
中研型号 CATECH P/N	叠厚 Core build (mm)		窗口宽度 Window width (mm) ref	窗口长度 Window length (mm) ref	铁芯高度 Core height (mm)		铁芯宽度 Core width (mm)		铁芯长度 Core length (mm)		内圆角 R angle	磁路长度 Magnetic path length (cm)	有效截面积 Effective cross section area(cm²)	窗口面积 Window area	重量 Weight (g)
	a	±	b	c	d	±	e	±	f	±	R	Le	Ae	Aw	m
CACC-70NR	20	1	40	60	30	0.5	80	1	100	3	2	25.94	4.74	24.00	891
CACC-80NR	16	1	20	70	40	1	52	1	102	3	2	22.68	5.06	14.00	831
CACC-84NR	12	0.8	30	60	20	0.5	54	1	84	2	2	21.43	1.90	18.00	295
CACC-100NR	16	1	20	70	45	1	52	1	102	3	2	22.68	5.69	14.00	935
CACC-110NR	16	1	25	75	45	1	57	1	107	3	2	24.68	5.69	18.75	1018
CACC-117NR	20	1	35	77	20	0.5	75	1	117	3	2	28.34	3.16	26.95	649
CACC-125NR	19	1	25	83	35	1	63	1	121	3	2	27.23	5.25	20.75	1037
CACC-128NR	22	1	35	84	25	0.5	79	1	128	3	2	30.37	4.35	29.40	957
CACC-140NR	26	1	45	88	30	0.5	97	1	140	3	3	34.25	6.16	39.60	1530
CACC-140ANR	26	1	45	88	40	1	97	1	140	3	3	34.25	8.22	39.60	2040
CACC-160NR	19	1	25	83	40	1	63	1	121	3	2	27.23	6.00	20.75	1185
CACC-200NR	19	1	25	83	50	1	63	1	121	3	2	27.23	7.51	20.75	1481
CACC-210NR	40	1.5	50	130	50	1	130	2	210	3	4	47.88	15.80	65.00	5485
CACC-250NR	19	1	25	90	60	1	63	1	128	3	2	28.63	9.01	22.50	1869
CACC-275NR	25	1	35	78	50	1	85	1	128	3	2	30.11	9.88	27.30	2156
CACC-320NR	22	1	35	85	50	1	79	1	129	3	3	30.40	8.69	29.75	1915
CACC-320BNR	22	1	35	105	50	1	79	1	149	3	3	34.40	8.69	36.75	2167
CACC-327NR	25	1	35	105	40	1	85	1	155	3	2	35.51	7.90	36.75	2034
CACC-385NR	20	1	35	90.5	70	1	75	1	130.5	3	3	30.87	11.06	31.68	2475
CACC-400NR	22	1	35	85	65	1	79	1	129	3	3	30.40	11.30	29.75	2490
CACC-455NR	17	1	40	84	90	1.5	74	1	118	3	2	29.80	12.09	33.60	2611
CACC-465NR	25	1	40	105	50	1	90	1	155	3	3	36.34	9.88	42.00	2602
CACC-500NR	25	1	40	85	55	1	90	1	135	3	3	32.34	10.86	34.00	2547
CACC-509BNR	23.7	1	25	78	40	1	72.4	1	125.4	3	2	27.70	7.49	19.50	1504
CACC-509DNR	24.7	1	25	78	40	1	74.4	1	127.4	2	3	27.84	7.81	19.50	1576
CACC-531NR	25	1	35	105	65	1	85	1	155	3	2	35.51	12.84	36.75	3305
CACC-549NR	42	1.5	35	105	40	1	119	2	189	3	4	40.51	13.27	36.75	3898
CACC-557NR	30	1	35	100	60	1	95	1	160	3	3	35.91	14.22	35.00	3702
CACC-570ANR	25	1	40	100	45	1	90	1	150	3	3	35.34	8.89	40.00	2277
CACC-570BNR	25	1	40	100	50	1	90	1	150	3	3	35.34	9.88	40.00	2530
CACC-630NR	25	1	40	85	70	1	90	1	135	3	3	32.34	13.83	34.00	3241
CACC-650NR	40	1.5	40	115	40	1	120	2	195	3	4	42.88	12.64	46.00	3929
CACC-660NR	40	1.5	80	80	40	1	160	2	160	3	4	43.88	12.64	64.00	4021
CACC-695NR	40	1.5	35	94	60	1	115	2	174	3	4	37.68	18.96	32.90	5179
CACC-787NR	40	1.5	40	85	65	1	120	2	165	3	4	36.88	20.54	34.00	5492
CACC-800ANR	25	1	40	85	85	1.5	90	1	135	3	4	32.17	16.79	34.00	3915
CACC-800BNR	30	1	40	95	85	1.5	100	2	155	3	4	35.74	20.15	38.00	5220
CACC-802NR	32	1	60	118	40	1	124	2	182	3	4	44.97	10.11	70.80	3297
CACC-836NR	25	1	50	126	60	1	100	2	176	3	4	42.37	11.85	63.00	3640
CACC-920NR	21.5	1	60	90	90	1.5	103	2	133	3	4	36.07	15.29	54.00	3997
CACC-1000NR	33	1	40	105	85	1.5	106	2	171	3	4	38.68	22.16	42.00	6214
CACC-1050NR	40	1.5	50	100	70	1	130	2	180	3	4	41.88	22.12	50.00	6716
CACC-1200NR	40	1.5	79	130	70	1	159	2	210	4	5	53.51	22.12	102.70	8581

中研型号 CATECH P/N	叠厚 Core build (mm)		窗口宽度 Window width (mm) ref	窗口长度 Window length (mm) ref	铁芯高度 Core height (mm)		铁芯宽度 Core width (mm)		铁芯长度 Core length (mm)		内圆角 R angle	磁路长度 Magnetic path length (cm)	有效截面积 Effective cross section area(cm²)	窗口面积 Window area	重量 Weight (g)
	a	±	b	c	d	±	e	±	f	±	R	Le	Ae	Aw	m
CACC-1300NR	40	1.5	86	150	70	1	166	2	230	4	5	58.91	22.12	129.00	9447
CACC-1400NR	40	1.5	64	120	80	1.5	144	2	200	4	5	48.51	25.28	76.80	8891
CACC-1500NR	40	1.5	64	160	80	1.5	144	2	240	4	5	56.51	25.28	102.40	10357
CACC-1600NR	45	1.5	45	145	95	1.5	135	2	235	4	4	51.45	33.77	65.25	12598
CACC-1658NR	50	1.5	60	138	45	1	160	2	238	4	5	54.45	17.78	82.80	7017
CACC-1800NR	33	1	75	240	60	1	141	2	306	4	5	72.51	15.64	180.00	8223
CACC-2000NR	60	1.5	60	150	35	1	180	3	270	4	5	59.99	16.59	90.00	7216
CACC-2950NR	28	1	78	128	120	1.5	134	2	184	4	5	49.14	26.54	99.84	9456
CACC-3604NR	40	1.5	64	201	80	1	144	2	281	4	5	64.71	25.28	128.64	11860
CACC-25000NR	80	1.5	60	180	80	1.5	220	3	340	4	5	72.27	50.56	108.00	26493
CACC-30000NR	75	1.5	72	385	75	1	222	3	535	4	5	114.10	44.44	277.20	36761

备注：*表中性能仅供客户初步设计选型用，具体性能参数以承认书为准。 *可根据客户要求制作各种环形、矩形、钳表形及其它形状的铁芯。

*The provided data is for customer's initial design guidelines only, please check the approval data sheet before ordering. *Toroidal, Oval, Clamp Shape or other customized designs are available.

典型损耗曲线 Typical core loss curve



纳米晶 CACC 系列铁芯损耗曲线

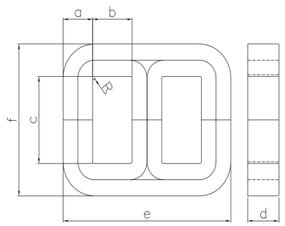
The Core Loss Curve of Nano-crystalline Cacc Cores

三相E型铁芯
Three Phase E-core

产品规格编码说明	CA	CC	(E)	47
CATECH P/N Description	中研磁电 CATECH	C 型铁芯 C-core	E 型铁芯 E core	规格序列号 Serial No.

a- 铁芯叠厚　b- 铁芯窗宽　c- 铁芯窗高　d- 铁芯高度
e- 铁芯外宽　f- 铁芯外长　Weight- 重量

a-core build　b-window width　c-window height　d-core height
e-core width　f-core length　Weight-weight in grams



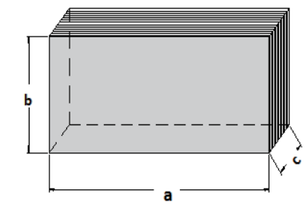
中研型号 CATECH P/N	叠厚 Core build (mm)		窗口宽度 Window width (mm) ref	窗口长度 Window length (mm) ref	铁芯高度 Core height (mm)		铁芯宽度 Core width (mm)		铁芯长度 Core length (mm)		内圆角 R angle	有效截面积 Effective cross section area(cm²)	重量 Weight (g)
	a	±	b	c	d	±	e	±	f	±	R	Ae	m
CACC(E)-47	15	0.8	25	47	30	0.5	95	1	77	2	2	4.01	891
CACC(E)-51	12	0.8	20	36	25	0.5	76	1	60	2	2	2.67	464
CACC(E)-52	16	0.8	20	30	15	0.5	88	1	62	2	2	2.13	374
CACC(E)-200	22	1	25	70	30	0.5	116	2	114	3	2	5.87	1743
CACC(E)-273	24	1	38	85	40	1	148	2	133	3	3	8.54	3139
CACC(E)-300	25	1	25	78	40	1	125	2	128	3	2	8.9	2889
CACC(E)-305	28.6	1	30	48	30	0.5	145.8	2	105.2	2	2	7.63	2192
CACC(E)-330	25	1	30	86	30	0.5	135	2	136	3	2	6.67	2365
CACC(E)-331	22	1	40	87	50	1	146	2	131	3	3	9.79	3643
CACC(E)-350	22	1	30	60	50	1	126	2	104	2	2	9.79	2834
CACC(E)-413	27	1	36	130	35	1	153	2	184	3	2	8.41	3997
CACC(E)-418	29	1	30	95	30	0.5	147	2	153	3	2	7.74	3017
CACC(E)-484	25	1	68	113	30	0.5	211	2	163	3	3	6.67	3482
CACC(E)-552	25	1	30	86	50	1	135	2	136	3	2	11.12	3942
CACC(E)-659	25	1	30	86	60	1	135	2	136	3	2	13.35	4730
CACC(E)-703	38	1	34	68	40	1	182	2	144	3	3	13.52	5046
CACC(E)-734	30	1	35	90	50	1	160	2	150	3	3	13.35	5297
CACC(E)-879	38	1	42	100	40	1	198	2	176	3	3	13.52	6314
CACC(E)-900	25	1	40	118	50	1	155	2	168	3	3	11.12	5016
CACC(E)-950	32	1	40	64	50	1	176	2	128	3	3	14.24	5132
CACC(E)-1200	30	1	55	120	35	1	200	2	180	3	5	9.34	4832
CACC(E)-1395	40	1.5	90	130	40	1	300	2	210	3	5	14.24	9604
CACC(E)-1406	35	1.5	45	120	85	1	195	2	190	3	3	26.47	13435
CACC(E)-2800	56	2	56	172	55	1	280	3	284	3	5	27.41	19843
CACC(E)-3000	50	1.5	64	100	80	1	278	3	200	3	5	35.6	20311
CACC(E)-5000	60	2	60	184	60	1	300	3	304	3	5	32.04	24843

铁基非晶块铁芯
Fe-based Amorphous Blocked Core

产品规格编码说明	CA	BC	0000	0000	0000
CATECH P/N Description	中研磁电 CATECH	块状铁芯 Blocked core	长 length	带宽 strip width	叠厚 core build

a- 铁芯长度　b- 铁芯宽度　c- 铁芯叠厚
Ae- 有效截面积　Weight- 重量

a-core length　b-core width　c-core build
Ae-Effective cross section area



中研型号 CATECH P/N	铁芯尺寸 Bare core dimension Length-Width-Core build (mm)						有效截面积 Effective cross section area (cm²)	重量 Weight (g)
	a	±	b	±	c	±	Ae	m
CABC-090002000300	90	1	20	0.5	30	0.5	5.4	349
CABC-098002800660	98	1	28	0.3	66	1	16.63	1170
CABC-082502500250	82.5	0.5	25	0.5	25	0.5	5.62	333
CABC-127002500250	127	1	25	0.5	25	0.5	5.62	513
CABC-130002500250	130	1.5	25	0.5	25	0.5	5.62	525
CABC-160002500600	160	1.5	25	0.5	60	1	13.5	1551
CABC-085003000700	85	1	30	0.5	70	1	18.9	1153
CABC-090003000800	90	1	30	0.5	80	1	21.6	1396
CABC-100003000850	100	1	30	0.5	85	1	22.95	1648
CABC-050802000480	50.8	0.5	20	0.5	48	0.5	8.64	315
CABC-110003000290	110	1	30	0.5	29	0.5	7.83	618
CABC-110003000350	110	1	30	0.5	35	0.5	9.45	746
CABC-110003000850	110	1	30	0.5	85	1	22.95	1813
CABC-140003000350	140	1.5	30	0.5	35	0.5	9.45	950
CABC-160003000850	160	1.5	30	0.5	85	1	22.95	2636
CABC-180003000700	180	1.5	30	0.5	70	1	18.9	2443
CABC-150035000950	150	1.5	35	0.5	95	1	29.92	3223
CABC-285003500850	285	1.5	35	0.5	85	1	26.77	5479
CABC-230005000700	230	1.5	50	1	70	1	31.5	5202
CABC-360008001300	360	1.5	80	1	130	1.5	93.6	24194
CABC-029008001300	29	0.5	80	1	130	1.5	93.6	1949
CABC-048002500850	48	0.5	25	0.5	85	1	19.12	659
CABC-036002500850	36	0.5	25	0.5	85	1	19.12	494
CABC-239001500550	239	1.5	15	0.5	55	1	7.42	1274
CABC-110002500600	110	1	25	0.5	60	1	13.5	1066
CABC-020002500600	20	0.5	25	0.5	60	1	13.5	194
CABC-032005000320	32	0.5	50	1	32	0.5	14.4	331
CABC-025002500250	25	0.5	25	0.5	25	0.5	5.62	101
CABC-380012002000	380	1.5	120	1	200	1.5	216	58933
CABC-320006000650	320	1.5	60	1	65	1	35.1	8065
CABC-630007000700	630	2	70	1	70	1	44.1	19948

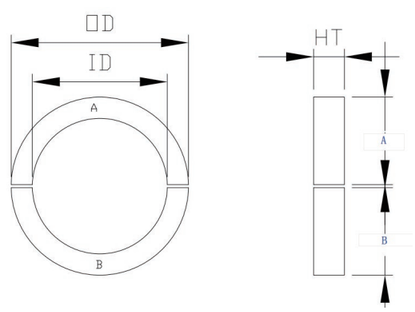
铁基纳米晶环形切割铁芯
Fe-based Nanocrystalline Toroidal Split Core

应用领域 Application

- 开启式电流互感器
  Current Transformer
- 传感器
  Current Sensor
- 功率电感及变压器
  Power Inductor and Transformer core

性能特点

- 切割后磁导率可达到 10000 以上，有效提高开启式互感器的精度
  The permeability can reach more than 10000 After cutting , Effectively improve the precision of the current transformer
- 低损耗，减少电感的发热量及提高使用寿命
  Low loss，Reduce the heat of the component and prolong the life time
- 优异的线性度，比相同规格的硅钢片铁芯线性提高 20%
  Excellent Linearity，20% higher than the same size of silicon steel core
- 优异的性价比，价格比坡莫合金低
  Excellent cost-effective，half price compare with permalloy core



产品规格编码说明	NF	0000	c	01
CATECH P/N Description	开启式互感器 Split CT Core Series	规格序号 Serial No.	喷涂产品 Coating	特征码 Feature No.

中研型号 CATECH P/N	铁芯尺寸 Bare core dimension (mm)			成品尺寸 Finished core dimension (mm)			磁路长度 Magnetic path length (cm)	截面积 Cross section area (cm^2)	体积 Volume (cm^3)	铁芯重量 Weight (g)
	OD	ID	HT	OD	ID	HT	Le	Ae	Ve	m
NF-0001-C	40	20	15	42	18	16	9.42	1.20	11.30	82
NF-0002-C	115	80	35	117	78	36	30.62	4.90	150.01	1088
NF-0004-C	70	50	10	72	48	11	18.84	0.80	15.07	109
NF-0019-C	58	46	10	60	44	11	16.33	0.48	7.84	57
NF-0032-C	74	50	35	76	48	36	19.49	3.36	65.41	474
NF-0035-C	86	60	20	88	58	21	22.92	2.08	47.68	346
NF-0044-C	44	32	10	46	30	11	11.93	0.48	5.73	42
NF-0047-C	73	53	5	75	51	6	19.78	0.40	7.91	57
NF-0048	173	143	35	175	141	36	49.61	4.20	208.37	1511
NF-0049	173	143	50	175	141	51	49.61	6.00	297.67	2158
NF-0051-C	45	33	10	47	31	11	12.25	0.48	5.88	43
NF-0054	102	70	40	104	68	41	27.00	5.12	138.26	1002
NF-0060	120	105	10	122	103	11	35.33	0.60	21.20	154
NF-0063-C	86	66.5	15	88	64.5	16	23.94	1.17	28.01	203
NF-0064-C	45	33	5	47	31	6	12.25	0.24	2.94	21
NF-0065-C	59	47	5	61	45	6	16.64	0.24	3.99	29
NF-0067-C	70	58	5	72	56	6	20.10	0.24	4.82	35
NF-0071-C	142	122	12	144	120	13	41.45	0.96	39.79	288
NF-0072-C	116	96	10	118	94	11	33.29	0.80	26.63	193
NF-0079	145	75	35	147	73	36	34.54	9.80	338.49	2454
NF-0081-C	136	120	10	138	118	11	40.19	0.64	25.72	186
NF-0083-C	71	57	8	73	55	9	20.10	0.45	9.00	65
NF-0084-C	92	78	8	94	76	9	26.69	0.45	11.96	87
NF-0090-C	34	18	12	36	16	13	8.16	0.77	6.27	45
NF-0092-C	53	43	5	55	41	6	15.07	0.20	3.01	22
NF-0094	65	25	25	67	23	26	14.13	4.00	56.52	410
NF-0096-C	75	55	10	77	53	11	20.41	0.80	16.33	118
NF-0099	48	38	10	50	36	11	13.50	0.40	5.40	39
NF-0101-C	90	75	30	92	73	31	25.91	1.80	46.63	338
NF-0105-C	24	15	8	26	13	9	6.12	0.29	1.76	13
NF-0107-C	208	178	20	210	176	21	60.60	2.40	145.44	1054
NF-0109-C	111	102	10	113	100	11	33.44	0.36	12.04	87
NF-0110-C	119	101	15	121	99	16	34.54	1.08	37.30	270
NF-0113-C	145	123	15	147	121	16	42.08	1.32	55.54	403
NF-0114-C	98	80	12	100	78	13	27.94	0.86	24.15	175
NF-0116-C	74	53	12	76	51	13	19.94	1.01	20.10	146
NF-0119-C	80	60	20	82	58	21	21.98	1.60	35.17	255
NF-0124-C	120	90	15	122	88	16	32.97	1.80	59.35	430

备注：*表中性能仅供客户初步设计选型用，具体性能参数以承认书为准。 *可根据客户要求制作各种环形、矩形、钳表形及其它形状的铁芯。
*The provided data is for customer's initial design guidelines only, please check the approval data sheet before ordering. *Toroidal, Oval, Clamp Shape or other customized designs are available.

中研型号 CATECH P/N	铁芯尺寸 Bare core dimension (mm)			成品尺寸 Finished core dimension (mm)			磁路长度 Magnetic path length (cm)	截面积 Cross section area (cm^2)	体积 Volume (cm^3)	铁芯重量 Weight (g)
	OD	ID	HT	OD	ID	HT	Le	Ae	Ve	m
NF-0131-C	70	40	25	72	38	26	17.27	3.00	51.81	376
NF-0134-C	47	33	7	49	31	8	12.56	0.39	4.92	36
NF-0141-C	138	118	10	140	116	11	40.19	0.80	32.15	233
NF-0142-C	161	137	12	163	135	13	46.78	1.15	53.90	391
NF-0146-C	127	116	10	129	114	11	38.15	0.44	16.79	122
NF-0149-C	65	40	45	67	38	46	16.48	4.50	74.18	538
NF-0152-C	85	68	18	87	66	19	24.02	1.22	29.40	213
NF-0137	80	50	20	82	48	21	20.41	2.40	48.98	355
NF-0158	44.6	34.8	6.5	46.6	32.8	7.5	12.46	0.25	3.18	23
NF-0162-C	90	70	10	92	68	11	25.12	0.80	20.10	146
NF-0164	100	74	35	102	72	36	27.31	3.64	99.44	721
NF-0185-C	86	61	12	88	59	13	23.07	1.20	27.69	201
NF-0192	125	113	10	127	111	11	37.36	0.48	17.94	130
NF-0194	107	70	45	109	68	46	27.78	6.66	185.07	1342
NF-0200-C	42	28	18	44	26	19	10.99	1.01	11.08	80
NF-0202	106	86	15	108	84	16	30.14	1.20	36.17	262
NF-0204-C	50	30	20	52	28	21	12.56	1.60	20.10	146
NF-0207-C	89	79	15	91	77	16	26.37	0.60	15.83	115
NF-0211	74	57	18	76	55	19	20.56	1.22	25.17	183
NF-0213-C	80	40	30	82	38	31	18.84	4.80	90.43	656
NF-0215-C	83	59	13	85	57	14	22.29	1.25	27.82	202
NF-0217	110	78	35	112	76	36	29.51	4.48	132.23	959
NF-0219-C	85	68	18	87	66	19	24.02	1.22	29.40	213
NF-0220-C	62	52	8	64	50	9	17.89	0.32	5.73	42
NF-0232-C	107	80	30	109	78	31	29.35	3.24	95.12	690
NF-0233-C	112	80	25	114	78	26	30.14	3.20	96.46	699
NF-0237-C	86	58	15	88	56	16	22.60	1.68	37.98	275
NF-0238-C	100	50	35	102	48	36	23.55	7.00	164.85	1195

备注：*表中性能仅供客户初步设计选型用，具体性能参数以承认书为准。 *可根据客户要求制作各种环形、矩形、钳表形及其它形状的铁芯。
*The provided data is for customer's initial design guidelines only, please check the approval data sheet before ordering. *Toroidal, Oval, Clamp Shape or other customized designs are available.

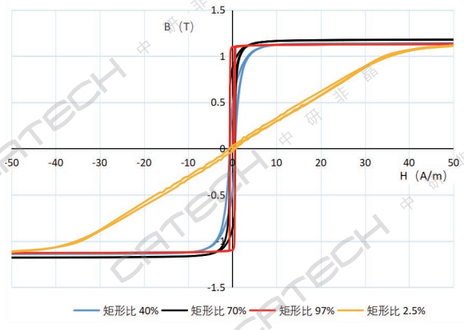
铁基纳米晶电流互感器铁芯
Fe-based Nanocrystalline Current Transformer Core

应用领域 Application

- 精密电流互感器
  Precision Current Transformer
- 零序电流互感器 ZCT
  Zero Sequence Current Transformer
- 高中低压电器测量互感器
  Measuring transformers for high and low voltage appliances
- A 型、AC 型、B 型漏电开关
  Leakage switch for Type A, Type AC, Type B
- 新能源电动汽车充电桩
  Charging piles for EV
- 新能源电动汽车（OBC、BMS 系统）
  OBC and BMS applications for EV system

性能特点 Features

- 高饱和磁感应强度——体积小
  High saturation magnetic induction —— Small in size
- 高磁导率、低剩磁——互感器精度高、线性度好
  High permeability and low remanence —— Excellent in precision and linearity of the transformer performance
- 良好的温度稳定性——可在 -40°C~120°C工作
  Good temperature stability at -40°C~120°C



不同矩形比产品磁滞回线图
Hysteresis loop diagram of products with different squareness ratios

产品规格编码说明	NR	0001	w	01
CATECH P/N Description	互感器铁芯 CT Core Series	规格序号 Serial No.	封装方式：w- 白色护盒 /b- 黑色护盒 c- 喷涂 /t- 不锈钢护盒 Encapsulation method: w-white plastic case b-black plastic case, c-coating t-stainless steel case	特征码 Feature No.

中研型号 CATECH P/N	铁芯尺寸 Bare core dimension (mm)			成品尺寸 Finished core dimension (mm)			磁路长度 Magnetic path length (cm)	截面积 Cross section area (cm^2)	铁芯重量 Weight (g)	电感 AL (μH) Min
	OD	ID	HT	OD	ID	HT	Le	Ae	m	1kHz/0.25V
NR-0863-c	13	9	5	13.9	8.5	5.5	3.46	0.08	2.00	25
NR-1779-w	13.5	10	2.5	14.96	8.75	4.2	3.69	0.04	0.94	9.2
NR-0664-w	17.5	12.7	6.5	19	11	7.8	4.74	0.12	4.29	50
NR-1461-w	17.5	13	6.5	19	11	7.8	4.79	0.12	4.06	20.4
NR-0083-w-04	17.8	13	5	20.2	11.5	6.9	4.84	0.10	3.37	30
NR-0731-c	18.5	13.8	4.2	19	13.3	4.7	5.07	0.08	2.90	1.5
NR-0555-w	19	14	6.5	22.2	12	9	5.18	0.13	4.89	23
NR-1543-c	20.5	16	10	21.5	15	11	5.73	0.18	7.48	30
NR-0600-w	21	16	10	23.5	13	13	5.81	0.20	8.43	69
NR-0604-L-b	21	15	10	23.8	12.5	12.7	5.65	0.24	9.84	38
NR-1213-w	23	16	8	25	14	11	6.13	0.22	9.95	35
NR-0384-b	26	19.5	6.5	28.5	17.4	8.5	7.15	0.17	8.76	21
NR-0007-w	21	16	10	23.8	14.5	12.5	5.81	0.20	8.43	55
NR-0006-w-02	20	14	5	22.5	12.5	6.5	5.34	0.12	4.65	20
NR-0008-w	20	14	10	23.5	12.5	12.5	5.34	0.24	9.29	40
NR-0704-w-02	34	28	5	36.8	25	7.5	9.74	0.12	8.47	13
TSNR-1630-b	36.8	35.8	3.2	39.6	33	5.4	11.40	0.01	1.06	/
NR-0631-b	37.6	32	6.5	39.8	29.9	8.5	10.93	0.15	11.54	12
NR-0565-w-01	39.5	34	9	41.2	32.4	10.7	11.55	0.20	16.57	20
NR-0084-w	40	30	10	43	27	13.5	11.00	0.38	29.89	32
NR-0027-b	70	40	25	75	35	30	17.28	2.81	352	154
NR-0028-w	82	45	50	87	40	55	19.95	6.94	1003	327
NR-1288	82	60	35	87	55	40	22.31	2.89	467	122
NR-0688-w	90	80	10	95	75	15	26.70	0.38	73	13.5
NR-0131-w	100	75	20	105	70	25	27.49	1.88	374	64
NR-0231-w	105	75	25	110	70	30	28.27	2.81	577	94
NR-0130-w	110	90	45	115	85	50	31.42	3.38	769	101
NR-0715-w	110	70	18	115	65	23	28.27	2.70	553	90
NR-1201-t	110	70	30	115	65	35	28.27	4.50	922	150
NR-1229-w	110	91	45	115	86	50	31.57	3.21	734	96
NR-0038-w-01	115	85	20	120	80	25	31.42	2.25	512	68
NR-0810-t	115	80	55	120	75	60	30.63	7.22	1603	185
NR-1136-w	115	80	30	120	75	35	30.63	3.94	874	122
NR-1137-w	115	80	35	120	75	40	30.63	4.59	1020	141
NR-0062-w	120	90	30	125	85	35	32.99	3.38	807	96
NR-0121-w	120	95	20	125	90	25	33.77	1.88	459	53
NR-0138-w	120	95	15	125	90	20	33.77	1.41	344	40
NR-0139-w	120	85	20	125	80	25	32.20	2.63	613	77
NR-0164-w	120	90	25	125	85	30	32.99	2.81	673	80
NR-1200-t	125	80	30	130	75	35	32.20	5.06	1182	149
NR-1287-t	125	105	8	130	100	13	36.13	0.60	157	14.7
NR-0852-t	127	110	35	132	105	40	37.23	2.23	602	53
NR-0046-c	130	115	15	133	112	18	38.48	0.84	235	19.5
NR-0063-b	130	100	30	135	95	35	36.13	3.38	884	83
NR-1314-t	135	95	25	140	90	30	36.13	3.75	982	92
NR-0906-w	140	100	20	145	95	25	37.70	3.00	820	70
NR-1048-c	140	100	30	143	97	33	37.70	4.50	1230	105
NR-0165-w-01	145	105	15	150	100	20	39.27	2.25	641	51
NR-0451-w	149	105	25	154	100	30	39.90	4.13	1193	91
NR-0985-w	160	115	10	165	110	15	43.20	1.69	528	34.5
NR-0986-w	160	130	10	165	125	15	45.55	1.13	372	21.8
NR-0831-t	180	100	40	185	95	45	43.98	12.00	3826	240
NR-1154-w	200	175	15	206	170	20	58.90	1.41	601	21
NR-1207-t	365	305	10	372	298	18	105.24	2.25	1717	19
NR-1006-t	374	286	10	381	279	18	103.67	3.30	2480	28
NR-1310-t	424	368	10	431	360	18	124.41	2.10	1894	15
NR-1299-t	756	667	40	766	657	50	223.52	13.35	21634	53
NR-1301-t	867	707	95	877	697	105	247.24	57.00	102173	203

备注：*表中性能仅供客户初步设计选型用，具体性能参数以承认书为准。 *可根据客户要求制作各种环形、矩形、钳表形及其它形状的铁芯。

*The provided data is for customer's initial design guidelines only, please check the approval data sheet before ordering. *Toroidal, Oval, Clamp Shape or other customized designs are available.

纳米晶互感器铁芯 BH 磁化曲线数据参考表 Nanocrystalline CT Core BH magnetization cuves data sheet

H(mA/cm)	B(Gs)	ψ°	H(mA/cm)	B(Gs)	ψ°
0.39	50	1.01	11.97	6800	42.75
0.77	100	1.13	12.51	7100	42.81
1.39	200	2.34	12.85	7200	42.81
1.85	300	4.4	13.31	7400	42.73
2.27	400	6.05	13.79	7600	42.59
2.62	500	7.7	14.36	7800	42.33
2.87	600	8.82	14.98	8000	41.96
3.16	700	10.1	15.66	8200	41.46
3.38	800	11.1	16.43	8400	40.79
3.61	900	12.31	17.2	8600	40.03
3.81	1000	13.21	18.31	8800	38.83
4.01	1100	14.16	19.47	9000	37.49
4.38	1300	16.34	20.15	9100	36.68
4.75	1500	18.51	20.98	9200	35.69
5.06	1700	20.1	21.8	9300	34.72
5.35	1900	22.01	22.74	9400	33.64
5.57	2100	22.92	23.68	9500	32.59
5.86	2300	24.65	24.73	9600	31.50
6.11	2500	25.37	25.95	9700	30.32
6.34	2700	26.4	27.43	9800	29.05
6.57	2900	27.42	29	9900	27.89
6.82	3100	29.02	30.7	10000	26.85
7.05	3300	29.83	32.63	10100	25.89
7.28	3500	30.78	35.3	10200	24.86
7.56	3700	31.99	38.17	10300	23.96
7.85	4000	33.12	41.47	10400	22.97
8.22	4300	35.02	45.36	10500	21.68
8.64	4600	36.34	50.25	10600	19.88
9.04	4900	38.15	53.67	10700	18.71
9.41	5200	39.89	58.59	10800	17.37
9.84	5500	41.28	62.5	10900	16.55
10.29	5800	41.99	68	11000	15.39
10.74	6100	42.3	75	11080	14.00
11.06	6300	42.37	80	11150	13.00
11.43	6500	42.56	85	11208	12.00

铁基非晶滤波电感铁芯

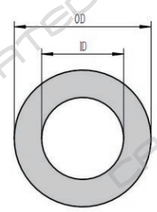
Fe-based Amorphous Core for Filtering Inductor

应用领域 Application

- 汽车音响用扼流圈
  Chokes for car audio
- PFC 校正电感
  PFC correction inductor
- 差模滤波器及平滑输出滤波器
  Differential mode filter and out-put smoother
- DC/DC 转换器滤波线圈
  DC/DC converter filter coil
- 常规滤波线圈及适配器滤波线圈
  General filter coil and adapter filter coil

性能特点 Features

- 高饱和磁感应强度、低矫顽力、低损耗
  High saturation magnetic induction, low coercivity, low loss
- 优良的抗直流偏置特性
  Excellent in anti-DC bias
- 导磁率范围 40~2000
  Permeability range 40~2000



产品规格编码说明	AC/PFC	0001	w	01
CATECH P/N Description	非晶恒电感 (无气隙) 功率因数校正 (有气隙)磁芯系列 AC (without gap) PFC (with gap) Core Series	规格序号 Serial No.	封装方式：w- 白色护盒 /b- 黑色护盒 c- 喷涂 /t- 不锈钢护盒 Encapsulation method: w-white plastic case b-black plastic case, c-coatingt-stainless steel case	特征码 Feature No.

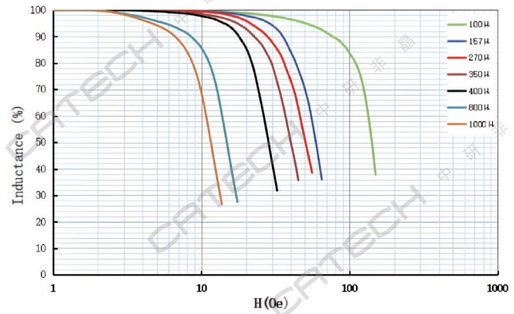
中研料号 CATECH P/N	铁芯尺寸 Bare core dimension (mm)			成品尺寸 Finished core dimension (mm)			截面积 Cross section area (cm^2)	磁路长度 Magnetic path length (cm)	铁芯重量 Weight (g)	磁导率 Permeability (μ)	额定安匝数 Rated ampere turns (ref)
	OD	ID	HT	OD	ID	HT	Ae	Le	m	10KHz	AT
AC-0036-w	13	8	8	15	6	10	0.17	3.30	4.07	1000	22
AC-0093-w	15	9	5	17.5	7.5	7	0.13	3.77	3.49	300	65
AC-0142-w	15	9.5	8	17	7.5	10	0.19	3.85	5.23	800	36
AC-0091-w	16	10	8	18.5	8	10.5	0.21	4.08	6.05	950	25
AC-0152-w	18	11	8	20.8	8.3	10.7	0.24	4.56	7.88	600	47
AC-0082-w	18	11	10	21	8.3	13	0.30	4.56	9.84	300	85
AC-0167-w	20	10	5	24	7.5	7.5	0.22	4.71	7.27	1050	26
AC-0163-w	20	12	10	23	10.2	12.6	0.34	5.03	12.42	800	41
AC-0014-w	22	13	10	26	9.5	14	0.39	5.50	15.28	170	200
AC-0181-b	28	16	25	33	12	29	1.29	6.91	64	600	70
TSAC-0218-w	28	19	12	30.5	16.5	13.5	0.46	7.38	25	550	110
AC-0240-b	35	20	30	39	17	34	1.94	8.64	120	400	130
AC-0225-c	37	25.5	15	38.5	24	16.2	0.74	9.82	52	250	220
AC-0259-b	40	25	15	44	21	19	0.97	10.21	71	550	110
AC-0154-b	50	32	20	54	27.5	24	1.55	12.88	143	250	300
AC-0062-b	58	38	20	62.5	34	24	1.72	15.08	186	5000	17
AC-0260	120	30	40	123	28	43	15.48	23.56	2619	400	250
AC-0256	150	40	40	153	37	42	18.92	29.85	4054	600	500
AC-0203-b	160	130	25	165.5	124.5	30.5	3.23	45.55	1055	4000	65
PFC-0011-w	18	11	10	21	9	13	0.30	4.56	10	100	290
PFC-0054-w	25	15	10	28	13	13	0.43	6.28	19	100	400
PFC-0009-b	26	16	10	29	14	13	0.43	6.60	20	100	420
PFC-0131-w	26	16	10	29	14	13	0.43	6.60	20	100	420
PFC-0030-b	30	20	15	35	17	18	0.65	7.85	36	100	500
PFC-0019-b	40	25	15	44	21	19	0.97	10.21	71	100	650
PFC-0027-b	40	25	10	45	21	13	0.65	10.21	47	100	650
PFC-0043-b-02	46	27	20	50	23	23	1.63	11.47	135	210	348
PFC-0020-b	50	32	15	53	28	19	1.16	12.88	107	100	820
PFC-0003-b	50	32	20	54	28	24	1.55	12.88	143	100	820
PFC-0128-b	58	38	20	63	34	24	1.72	15.08	186	100	960
PFC-0143-b	60	32	25	65	30	30	3.01	14.45	312	100	920
PFC-0146-b-02	64	40	20	68	36	25	2.06	16.34	242	120	867
PFC-0130-b	68	40	25	73	34	31	3.01	16.96	367	120	900
PFC-0061-b	70	40	25	74	37	29	3.23	17.28	400	100	1100
PFC-0004-b	80	50	25	84	47	29	3.23	20.42	473	100	1300
PFC-0002-b-03	80	50	40	85	46	45	5.16	20.42	757	100	1300
PFC-0017-b-02	100	60	20	105	53	27	3.44	25.13	621	120	1311
PFC-0210	100	50	40	102	48	42	8.60	23.56	1455	100	1500
PFC-0038	120	82	100	122	80	102	16.34	31.73	3723	160	1303
PFC-0127	123	80	130	125	78	132	24.04	31.89	5503	60	3383

备注：*表中性能仅供客户初步设计选型用，具体性能参数以承认书为准。 *可根据客户要求制作各种环形、矩形、钳表形及其它形状的铁芯。
*The provided data is for customer's initial design guidelines only, please check the approval data sheet before ordering. *Toroidal, Oval, Clamp Shape or other customized designs are available.

典型电磁性能曲线 Typical magnetic performance curve for AC/PFC cores

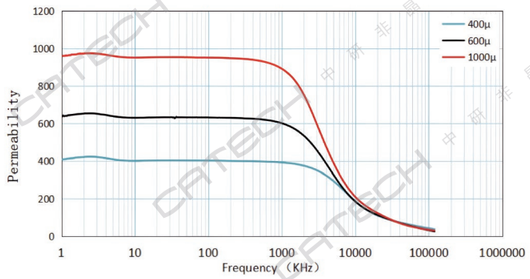
图一：铁基非晶铁芯磁导率直流偏置曲线

Fig.1 Fe-based Amorphous Choke cores Permeability vs DC Bias Curves



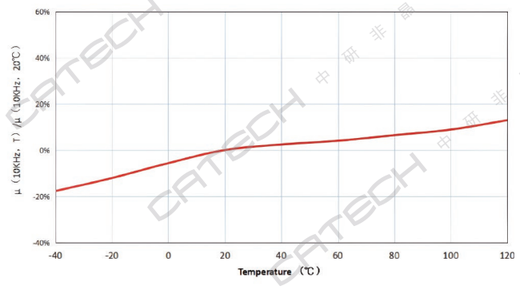
图二：磁导率频率特性曲线

Fig.2 Frequency response of the permeability



图三：铁基非晶磁导率与温度曲线

Fig.3 Reanlitive change of μ vs temperature



铁基纳米晶高频变压器铁芯

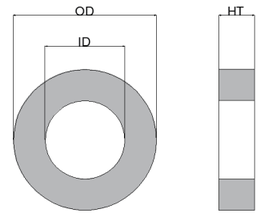
Fe-based Nanocrystalline High Frequency Voltage Transformer Core

应用领域 Application

- 逆变焊机电源变压器
  Inverter welding power transformer
- X 光电源变压器、激光电源变压器、通讯设备电源变压器 PFC
  X ray power transformer, laser power transformer, communication equipment power transformer
- 不间断电源 (UPS) 和高频感应加热电源变压器
  UPS and high frequency induction heating power transformer
- 充电电源变压器
  Charging power transformer
- 电解电镀电源变压器
  Power plus transformer
- 变频调速电源变压器
  Frequency control transformer
- 等离子切割机变压器
  Cutting machine transformer

性能特点 Features

- 高饱和磁感应强度及高导磁性—有效缩小器件体积，减轻器件质量
  High saturation magnetic induction intensity and high magnetic conductivity: effectively helps to reduce the size and the weight of the components.
- 高导磁率低矫顽力—提高变压器效率，减少激磁功率
  High permeability and low coercivity: helps to improve transformer efficiency and reduce excitation power.
- 低剩磁—获得更大的磁感应增量，得到更大的输出功率
  Low remanence: obtain greater magnetic induction increment, resulting in greater output power.
- 低损耗—降低变压器温升，提高变压器效率
  Low loss: reduce transformer temperature rise, improve transformer efficiency
- 良好的温度稳定性—可在 -40°C~130°C工作
  Good temperature stability: -40°C~130°C

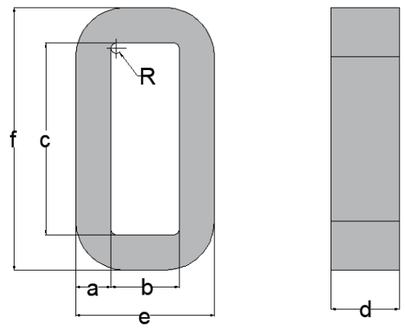


产品规格编码说明	NH	0001	w	01
CATECH P/N Description	逆变器铁芯系列 Transformer core series	规格序号 Serial No.	封装方式：w- 白色护盒 /b- 黑色护盒 c- 喷涂 /t- 不锈钢护盒 Encapsulation method: w-white plastic case b-black plastic case, c-coating t-stainless steel case	特征码 Feature No.

中研料号 CATECH P/N	铁芯尺寸 Bare core dimension (mm)			成品尺寸 Finished core dimension (mm)			截面积 Cross section area (cm²)	磁路长度 Magnetic path length (cm)	铁芯重量 Weight (g)	电感 AL nominal (μH)	损耗 Core loss P (W/kg)
	OD	ID	HT	OD	ID	HT	Ae	Le	m	1kHz/0.3V	20kHz,0.5T
NH0577-w	30	20	10	32.5	18.3	14.5	0.40	7.85	23	AL=34-65 @ 20kHz	/
NH0449-C	35	22	15	37	20.5	17	0.74	8.95	48	22-65	≤30
NH0002-b	50	32	20	55	27	25	1.37	12.87	128	34-62	≤25
NH0456	50	32	30	51	31	31	2.05	12.87	191	≥48	≤30
NH0586-C	54	39	55	57	36	58	3.14	14.61	333	≥67	≤30
NH0004-b	70	40	20	76	39	26	2.28	17.27	285	≥44	≤25
NH0286-f	70	40	25	73	37	28	2.85	17.27	357	≥42	≤25
NH0309-f	80	50	25	83	37	28	2.85	20.41	422	≥52	≤25
NH0393-f	90	60	50	93	57	53	5.71	23.55	975	≥75	≤30
NH0008-f	93	60	20	96	57	23	2.28	23.55	389	≥34	≤25
NH0009	93	60	25	96	57	28	2.85	23.55	487	≥40	≤25
NH0099-f	93	60	45	96	57	48	5.13	23.55	876	≥70	≤25
NH0648-f	93	60	70	96	57	73	7.98	23.55	1362	80-140	≤25
NH0011-b2	100	60	20	107	52	28	3.04	25.12	554	38-68	≤25
NH0475-f	100	75	45	103	72	48	4.28	27.48	853	≥50	≤30
NH0493-b	103	75	30	108	70	35	3.19	27.95	646	≥35	≤25
NH0017	107	70	25	109	68	27	3.52	27.79	709	≥40	≤25
NH0685-f	107	70	45	110	67	28	6.33	27.79	1275	70-120	≤25
NH0706-f	108	80	95	110	78	97	10.11	29.52	2164	110-220	≤30
NH0414-f	115	72	55	118	69	58	8.99	29.36	1914	≥210	≤30
NH0021-b4	120	60	30	126	55	36	6.84	28.26	1401	≥72	≤25
NH0733-b4	120	70	20	126	65	26	3.80	29.83	822	AL≥35 @10kHz	≤25
NH0284-b4	120	70	30	126	65	36	5.71	29.83	1235	≥80	≤25
NH0042-f	120	80	45	123	77	48	6.84	31.42	1558	≥63	≤25
NH0026-b8	130	80	40	137	75	47	7.61	32.97	1819	≥72	≤25
NH0027-b8	130	80	50	138	77	56	9.51	32.97	2273	≥90	≤25
NH0037-b8	130	80	60	138	76	71	11.41	32.97	2727	≥108	≤25
NH0029-b	130	90	50	137	84	56	7.62	34.54	1908	≥69	≤25
NH0448-f	154	105	45	157	102	48	8.38	40.66	2470	≥104	≤30

备注：*表中性能仅供客户初步设计选型用，具体性能参数以承认书为准。 *可根据客户要求制作各种环形、矩形、钳表形及其它形状的铁芯。

*The provided data is for customer's initial design guidelines only, please check the approval data sheet before ordering. *Toroidal, Oval, Clamp Shape or other customized designs are available.

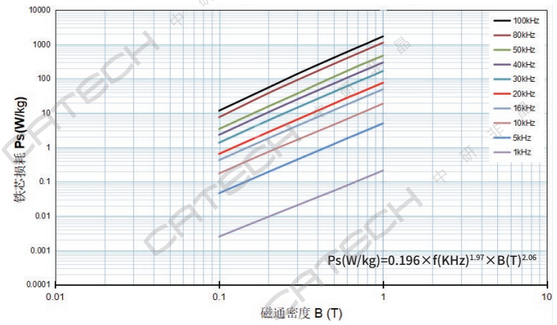


中研料号 CATECH P/N	铁芯尺寸 Bare core dimension	叠厚 Stacked thickness (mm)	窗口宽度 Window Width (mm)	窗口长度 Window Length (mm)	铁芯高度 Core Height (mm)	铁芯宽度 Core width (mm)	铁芯长度 Core Length (mm)	内圆角 R Angle	截面积 Cross section area (cm²)	磁路长度 Magnetic path length (cm)	重量 Weight (g)	电感 AL nominal (μH)	损耗 Core loss P (W/kg)
	c * b / a * d	a	b	c	d	e	f	R	Ae	Le	m	1kHz/0.3V	20kHz,0.5T
NH0666-f	76*55/10*60	10	55	76	60	75	96	10	4.80	27.79	973	58-130	≤30
NH0635-f	76*55/16*50	16	55	76	50	87	108	5	6.40	30.77	1440	50-150	≤30
NH0619-f	76*55/16*70	16	55	76	70	87	108	5	8.96	30.77	2010	85-180	≤30
NH0804-f	95*55/12*60	12	55	95	60	79	119	10	5.76	32.34	1360	50-140	≤30
NH0567	130*50/20*25	20	50	130	25	90	170	10	4.00	40.89	1210	≥88	≤30
NH0779	160*60/15*90	15	60	160	90	90	190	30	10.80	43.96	3466	50kHz/0.3V,AI≥80	50kHz/0.23T,P≤35
NH0782	146*66/27*35	27	66	146	35	120	200	2	7.56	51.13	2846	≥135	15kHz/0.36T,P≤35
NH0588	130*50/40*50	40	50	130	50	130	210	3	16.00	48.67	5685	≥280	20kHz/0.2T,P≤2.5
NH0712	140*95/45*30	45	95	140	30	185	230	10	10.80	57.97	4780	≥160	≤30
NH0715	184*47/25*80	25	47	184	80	97	234	5	16.00	53.85	6465	100-170	20kHz/0.3T,P≤10
NH0795	155*60/40*40	40	60	155	40	140	235	2	12.80	55.65	5300	≥200	15kHz/0.4T,P≤15
NH0679	160*35/40*75	40	35	160	75	115	240	3	24.00	51.57	9095	≥420	40kHz/0.3T,P≤35
NH0410	168*90/40*40	40	90	168	40	170	248	10	12.80	63.11	5925	≥180	≤20
NH0450	160*60/45*50	45	60	160	50	150	250	10	18.00	57.93	7700	20kHz/0.3V,AI≥120	≤30
NH0780	200*150/45*50	45	150	200	50	240	290	20	18.00	81.49	10825	≥65	40kHz/0.3T,P≤35
NH0674	210*115/45*50	45	115	210	50	205	300	20	18.00	76.15	10000	≥210	40kHz/0.3T,P≤28
NH0725	234*170/35*30	35	170	234	30	240	304	15	8.40	90.03	5560	≥82	≤30
NH0599-f	215*195/50*60	50	195	215	60	295	315	15	24.00	95.93	16975	≥240	≤30
NH0694	230*115/50*40	50	115	230	40	215	330	10	16.00	83.83	9890	≥170	7.4kHz/0.7T,P≤9 7.4kHz/0.8T,P≤11
NH0761	240*120/50*50	50	120	240	50	220	340	20	20.00	85.09	12548	≥210	≤35
NH0697	240*140/50*50	50	140	240	50	240	340	20	20.00	89.01	13126	≥200	7.4kHz/0.63T,P≤11
NH0430	260*160/50*50	50	160	260	50	260	360	20	20.00	98.91	14440	≥180	≤30
NH0246	280*150/45*50	45	150	280	50	240	370	20	18.00	97.02	13050	≥165	40kHz/0.3T,P≤35
NH0354-f	250*250/70*70	70	250	250	70	390	390	20	39.20	119.79	34525	≥290	≤30
NH0486-02	273*170/60*60	60	170	273	60	290	393	20	28.80	105.19	22300	≥245	20kHz/50mT,P≤0.26
NH0771	330*150/45*50	45	150	330	50	240	420	20	18.00	107.86	14330	≥150	40kHz/0.3T,P≤35
NH0702	320*170/60*60	60	170	320	60	290	440	10	28.80	116.33	24665	≥220	20kHz/0.34T,P≤20 50kHz/0.1T,P≤12
NH0486-01	360*210/50*50	50	210	360	50	310	460	15	20.00	127.79	18660	65-125	20kHz/50mT,P≤0.26

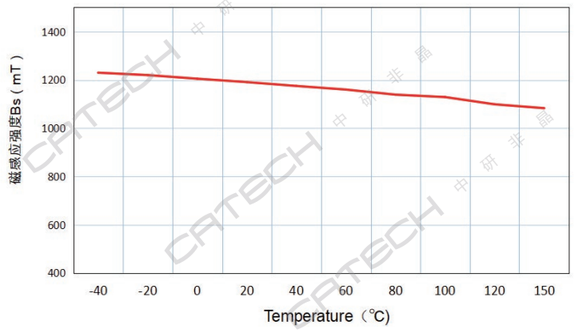
备注：*表中性能仅供客户初步设计选型用，具体性能参数以承认书为准。 *可根据客户要求制作各种环形、矩形、钳表形及其它形状的铁芯。

*The provided data is for customer's initial design guidelines only, please check the approval data sheet before ordering. *Toroidal, Oval, Clamp Shape or other customized designs are available.

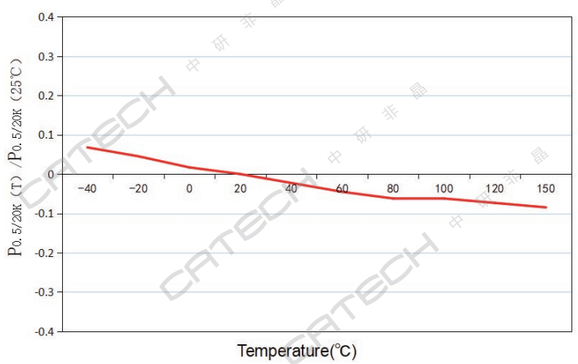
1K107A 逆变器铁芯曲线参考 Reference curve for transformer core with 1K107A material



图一：逆变变压器磁芯损耗参考曲线图
FIg1 LOSS curve diagram of transfrmer magnetic core



图二：饱和磁感应强度与温度变化曲线
FIg2 Realitive change of Bs vs Temperature



图三：逆变变压器磁芯损耗与温度变化曲线图
FIg3 Realitive change of Ps vs Temperature

钴基非晶铁芯 CACO-01

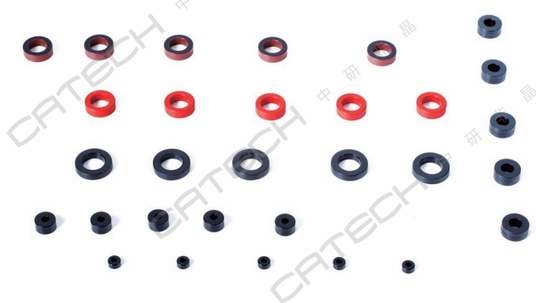
CACO-01 Co-based Amorphous Core

应用领域 Application field

- 磁放大器 Magnetic Amplifier
- 漏电流互感器 Leakage Current Transformer
- 磁传感器 Magnetic Sensor
- 尖峰抑制器 Spike Suppressor

性能特点 Features

- 低 Hc，低损耗，高矩形比
  Low Hc, low loss, high squareness ratio
- 当电流为零时具有非常大的电感量，有效的阻挡了由二极管产生的反向复位电流，可用于尖峰抑制器具有非常高的矩形比，在很小的电流下就可以达到饱和，可用于漏电保护非常低的磁致伸缩系数，可在极端条件下稳定工作
  When the current is zero, it has a very large inductance, effectively blocking the reverse reset current generated by the diode, it can be used as peak suppressor With a very high squareness ratio, it can reach saturation at a very small current and can be used for leakage protection
  Very low magnetostriction coefficient, stable work under extreme conditions



性能指标 performance index

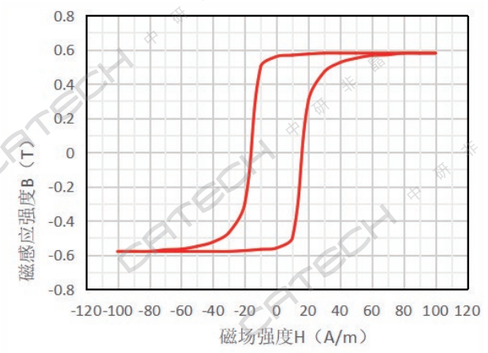
项目 Description	项目符号 Item-symbol	参考值 Refer Value
饱和磁通密度(25°C) Saturate Magnetic Flux Density(25°C)	T	0.55
饱和磁致伸缩(25°C) Saturate Magnetostriction (25°C)	λs	$<0.2\times10^{-6}$
居里温度 (°C) Curie Temperature	Tc	255
双级磁通密度△Bss(25°C) Two-stage Magnetic Flux Density △Bss (25°C)	T	1.14
双级磁通密度△Bss(90°C) Two-stage Magnetic Flux Density △Bss (90°C)	T	1.0
双级磁通密度△Bss(120°C) Two-stage Magnetic Flux Density △Bss (120°C)	T	0.8
矩形比 Square Ratio Br/Bm	%	94
连续工作温度 (°C) Continuous Working Temperature	/	90

产品规格编码说明	CACO	01	0001	H	47
CATECH P/N Description	中研钴基非晶铁芯代号 CATECH Co-based Amorphous Core Series	钴基类别 Co-based Category	规格序号 Serial No.	高矩形比 High Square Ratio	特征码 Feature No.

中研型号 CATECH P/N	铁芯尺寸 Core Dimension				截面积 Cross section area	平均磁路长度 Magnetic Iron Path Length	铁芯 重量 Weight
	铁芯规格 Bare Core Dimension OD X ID X H (mm)	成品尺寸 Finished Core Dimension					
		OD(mm) (max)	ID(mm) (min)	H(mm) (max)	Ae (cm^2)	Le (cm)	m (g)
CACO-01-0001-H	10x8x4	12.1	5.9	6.1	0.032	2.83	0.69
CACO-01-0002-H	10.1x6.9x4.5	12.1	4.8	6.6	0.057	2.67	1.17
CACO-01-0004-H	12x8x4.5	14.1	6.5	6.6	0.07	3.14	1.72
CACO-01-0005-H	12.5x10x5	14.6	7.9	7.1	0.05	3.50	1.34
CACO-01-0003-H	12.8x9.5x3.2	14.9	7.4	5.5	0.04	3.50	1.12
CACO-01-0023-H	14x10x4.5	16.1	7.9	6.6	0.07	3.77	2.06
CACO-01-0007-H	15x10x4.5	17.1	7.9	6.6	0.09	3.92	2.69
CACO-01-0008-H	15x10x6	17.1	7.9	8.1	0.12	3.92	3.58
CACO-01-0009-H	16x10x6	18.1	7.9	8.1	0.14	4.01	4.47
CACO-01-0010-H	17.5x12.5x6	19.6	10.4	8.1	0.12	4.67	4.3
CACO-01-0011-H	19x15x5	21.5	12.5	7.5	0.08	5.34	3.25
CACO-01-0012-H	19x15x10	21.5	12.5	12.5	0.16	5.34	6.49
CACO-01-0027-H	19x17x5	21.5	12.5	7.5	0.04	5.64	1.72
CACO-01-0013-H	20x12.5x8	22.6	10.2	10.6	0.24	5.10	9.31
CACO-01-0088-H	21x14x5	23.4	11.8	6.4	0.12	5.50	5.26
CACO-01-0108-H	22x18x3.2	25.2	14.8	6.5	0.05	6.28	2.45
CACO-01-0075-H	22.8x17x3	25.2	14.6	5.4	0.07	6.25	3.31
CACO-01-0017-H	23x16.5x3	25.3	14.0	6.2	0.08	6.20	3.68
CACO-01-0053-C	23x17x3	24.5	15.5	4.2	0.07	6.28	3.44
CACO-01-0015-H	25x16x10	28.0	13.3	13.0	0.36	6.44	17.62
CACO-01-0014-H	25x20x10	28.0	17.7	13.4	0.20	7.06	10.74
CACO-01-0026-H	25x23x5	28.1	17.9	9.9	0.04	7.54	2.29
CACO-01-0139-H	25.5x19.5x10	28.6	16.6	13.2	0.24	7.06	12.89
CACO-01-0016-H	30x20x10	32.1	17.9	12.1	0.40	7.85	23.88
CACO-01-0097-H	36x32x5	39.8	29.8	8.5	0.08	10.67	6.49
CACO-01-0020-H	40x25x10	44.0	22.0	14.8	0.60	10.20	46.56
CACO-01-0021-H	40x32x15	45.2	28.3	19.2	0.48	11.30	41.25
CACO-01-0019-H	45x30x15	48.5	26.8	18.3	0.90	11.77	80.58

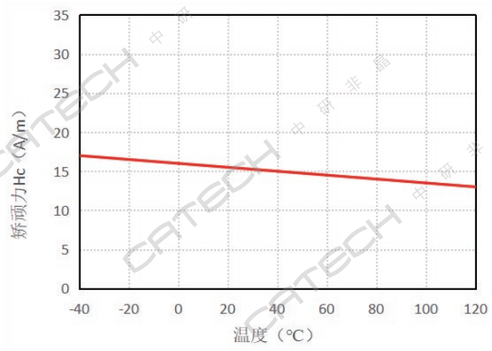
备注：*表中性能仅供客户初步设计选型用，具体性能参数以承认书为准。 *可根据客户要求制作各种环形、矩形、钳表形及其它形状的铁芯。
*The provided data is for customer's initial design guidelines only, please check the approval data sheet before ordering. *Toroidal, Oval, Clamp Shape or other customized designs are available.

100KHz 性能曲线 Performance Curve



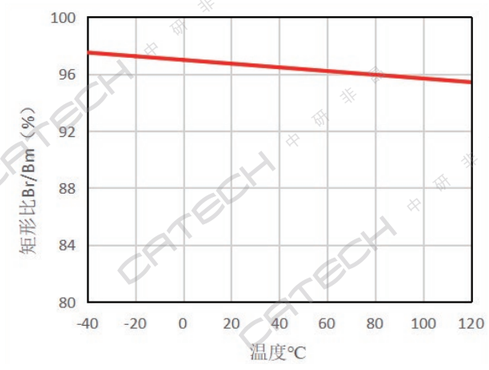
图一：交流 B-H 磁滞回线

fig1 AC B-H Magnetic Hysteresis Loop



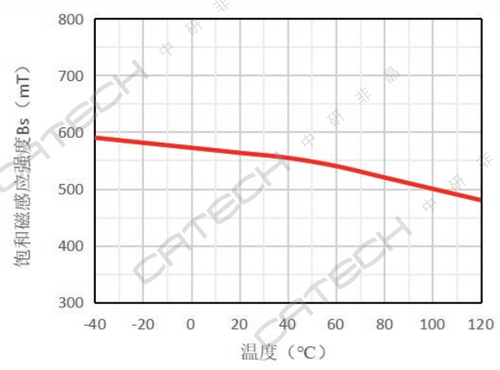
图二：矫顽力 Hc 与温度的关系

fig2 Realitive Change of Coercivity Hc vs Temperature



图三：矩形比(Br/Bm)与温度的关系

fig3 Realitive Change of Squareness Ratio (Br/Bm) vs Temperature



图四：饱和磁感应强度(Bs)与温度的关系

fig4 Realitive Change of Saturate Magnetic Flux Density (Bs) vs Temperature

钴基非晶铁芯 CACO-02

CACO-02 Co-based Amorphous Core

应用领域 Application field

- 单体抗直流分量互感器
  DC Immune Single CT Core
- 网络变压器
  Network Transformer
- 栅极驱动变压器
  Gate Drive Transformer

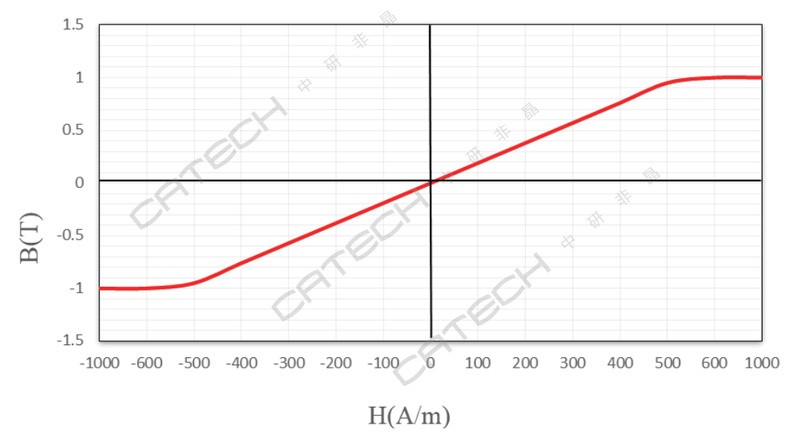
性能特点 Features

- 闭环磁路：对干扰源的低灵敏性，通常不需要屏蔽罩
  Closed loop magnetic circuit: low sensitivity to interference sources, no shield required in generally.
- 极低的线性相位误差，高线性度易于补偿
  Very low linear phase error, high linearity and easy to compensate
- 特别低的温度依赖性
  Very low temperature dependence

性能指标 Performance Index

项目 Description	项目符号 Item-symbol	参考值 Refer Value
饱和磁通密度(25°C) Saturate Magnetic Flux Density(25°C)	T	0.9
饱和磁致伸缩(25°C) Saturate Magnetostriction (25°C)	λs	$<0.2\times10^{-6}$
居里温度(°C) Curie Temperature	Tc	485
双级磁通密度(25°C) Two-stage Magnetic Flux Density (25°C)	△Bss	1.8
双级磁通密度(90°C) Two-stage Magnetic Flux Density (90°C)	△Bss	1.7
双级磁通密度(120°C) Two-stage Magnetic Flux Density (120°C)	△Bss	1.35
连续最高工作温度(°C) Continuous maximum working temperature	/	90

产品规格编码说明	CACO	02	0001	f	01
CATECH P/N Description	中研钴基非晶铁芯代号 CATECH Co-based Amorphous Core Series	钴基类别 Co-based Category	规格序号 Serial No.	高线性 High Square Ratio	特征码 Feature No.

中研型号 CATECH P/N	铁芯尺寸 Core Dimension				截面积 Cross section area	磁路长度 Magnetic Iron Path Length	铁芯重量 Weight	电感 Inductance 10kHz/ 0.1V, 1Ts
	铁芯规格 Bare Core Dimension OD X ID X H (mm)	成品尺寸 Finished Core Dimension						
		OD(mm) (max)	ID(mm) (min)	H(mm) (max)	Ae (cm^2)	Le (cm)	m (g)	AL (μH)
CACO-02-0013-f	7.8x3.8x3.8	8.5	3.4	4.4	0.064	1.82	0.89	0.65
CACO-02-0017-f	22x17x6.6	24.0	15.8	8.4	0.138	6.12	6.43	0.42
CACO-02-0016-f	24.5x15.5x7	25	14.8	7.8	0.297	6.12	13.85	0.80
CACO-02-0015-f	25x20x6.5	28.1	17.9	9.9	0.138	7.06	7.42	0.36
CACO-02-0019-f	25.5x19x9	28.8	16.4	13.3	0.248	6.98	13.21	0.65
CACO-02-0018-f	30.4x22.4x8	32	22.7	8.8	0.272	8.29	17.14	0.6
CACO-02-0014-f	40x30x15	43.6	28.0	18.7	0.60	10.99	50.14	0.9

性能曲线 Performance Curve