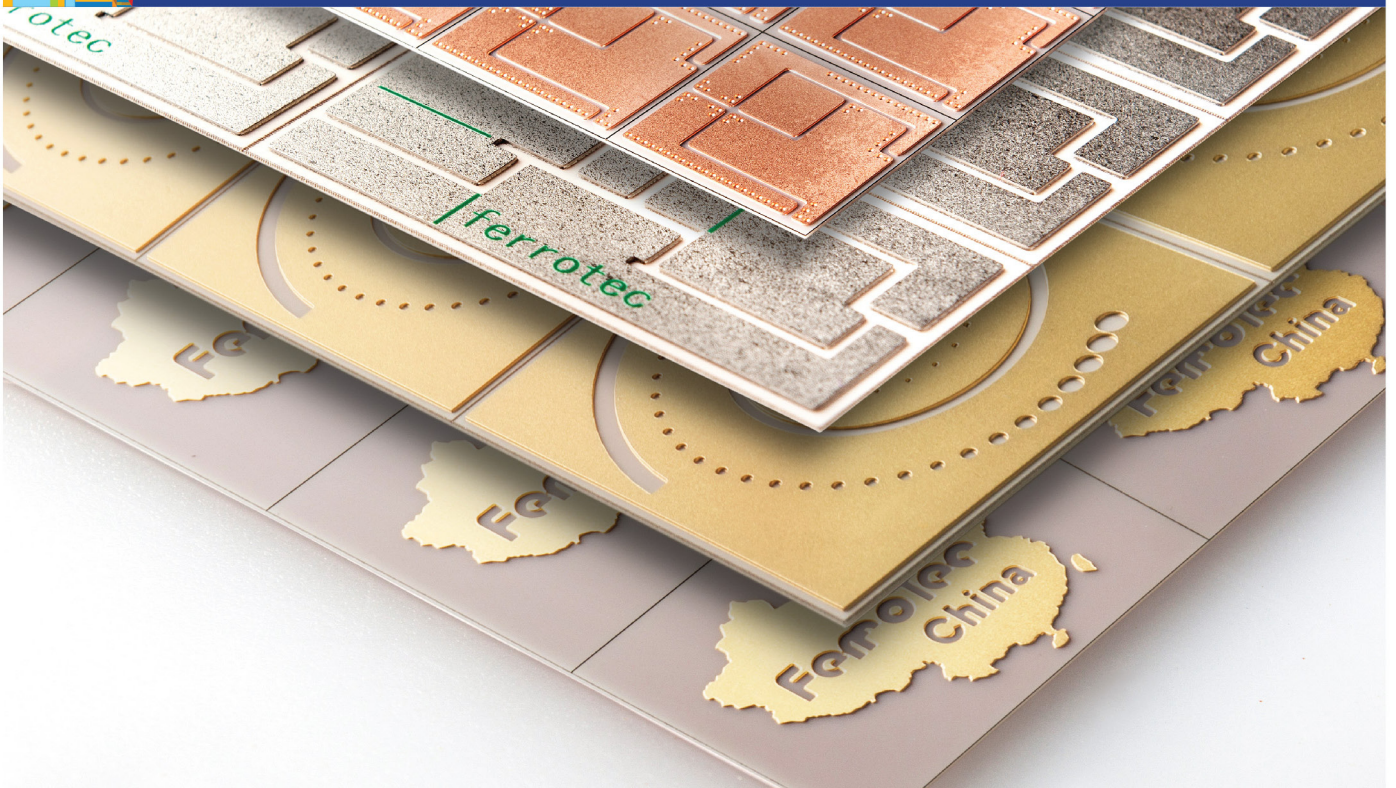


# FerroTec



覆铜陶瓷基板  
DCB Substrate



上海申和热磁电子有限公司  
Shanghai Shenhe Thermo-Magnetics Electronics Co.,Ltd.

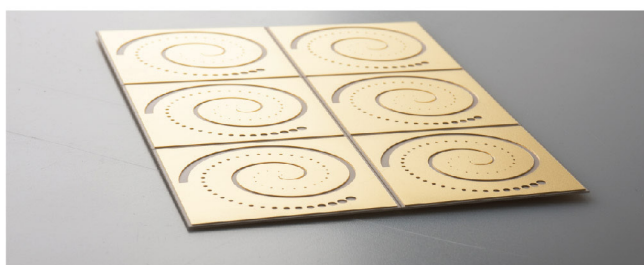
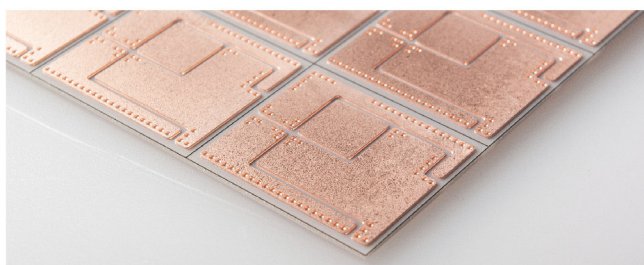
## 公司简介 / Company Profile

上海申和热磁电子有限公司是由日本磁性流体技术株式会社（Ferrotec Corporation）投资于上海市宝山城市工业园区的全资公司。公司创立于1995年5月，注册资本90.8亿日元，建筑面积44,151m<sup>2</sup>，下设TE事业部、太阳能硅片事业部、半导体硅片事业部和表面处理四个事业部，现有员工近2000人。

公司主要产品：覆铜陶瓷基板，半导体热电材料，太阳能单、多晶硅片及硅锭，半导体研磨片及抛光片，精密零部件清洗再生和电镀服务。

Shanghai Shenhe Thermo-Magnetics Electronics Co., Ltd. is a flagship subsidiary of Ferrotec Corporation in China. It was established in 1995, our nominal capital is JPY9.08 billion and building area covers 44,151m<sup>2</sup>. It comprises four departments, namely TE (thermoelectronics), PV wafer, Semiconductor wafer and surface treatment. Now we have almost 2000 employees.

Main products: DCB Substrates, Semiconductor refrigeration materials, Solar single/multi crystal silicon wafers/ingots, Semiconductor silicon wafers, Cleaning and refurbishment of precision parts, and Plating service.



## 产品简介 / Product Introduction

覆铜陶瓷基板是一种通过热熔式粘合法，在高温下将铜箔直接烧结到Al<sub>2</sub>O<sub>3</sub>和AlN陶瓷表面而制成的一种复合基板。Ferrotec上海申和热磁电子有限公司拥有20年的DCB生产经验，产品接近国际领先水平，可以根据客户需求，提供不同参数的优质产品。

DCB Substrates are composed of a ceramic insulator, Al<sub>2</sub>O<sub>3</sub> or AlN onto which pure copper metal is attached by a high temperature eutectic melting process and thus tightly and firmly joined to the ceramic. Shanghai Shenhe Thermo-Magnetics Electronics Co., Ltd. with 20 years experiences in producing DCB substrates, could manufacture products close to international first class level. Also, we accept orders against customers' requirements.

## 性能优势 / Advantages

- 1、良好的机械强度
- 2、良好的绝缘性
- 3、良好的热传导性
- 4、良好的热稳定性
- 5、热膨胀系数接近硅
- 6、像PCB板一样可以时刻各种图形

- 1、Excellent mechanical strength
- 2、Excellent electrical insulation
- 3、High thermal conductivity
- 4、High thermal stability
- 5、Thermal expansion coefficient is close to that of silicon
- 6、Can be structured like printed circuit boards



## 覆铜陶瓷基板参数 / Parameters of DCB Substrates

材料	项目	Item	数值(Value)	单位(Unit)
氮化铝陶瓷 AlN Ceramic	厚度	Thickness	0.635,0.5,0.38	mm
	密度	Density	3.3	g/cm <sup>3</sup>
	导热系数(25°C)	Thermal Conductivity(25°C)	170	W/m.k
	抗弯强度	Bending Strength	400	Mpa
	介电常数(1MHz)	Dielectric Constant (1MHz)	9.0	
	介电损耗(1MHz, 25°C)	Dielectric Loss (1MHz, 25°C)	0.0003	
	击穿电压	Dielectric Strength	20	kV/mm
	体积电阻率(25°C)	Volume Resistivity (25°C)	1*10 <sup>14</sup>	Ωcm
氧化铝陶瓷 Al <sub>2</sub> O <sub>3</sub> Ceramic	成分	Al <sub>2</sub> O <sub>3</sub> Content	>96	%
	厚度	Thickness	1.00,0.76,0.63,0.5,0.38,0.32,0.25	mm
	密度	Density	3.78	g/cm <sup>3</sup>
	导热系数(25°C)	Thermal Conductivity(25°C)	24	W/m.k
	抗弯强度	Bending Strength	400	Mpa
	介电常数(1MHz)	Dielectric Constant (1MHz)	9.8	
	介电损耗(1MHz, 25°C)	Dielectric Loss (1MHz, 25°C)	0.0003	
	击穿电压	Dielectric Strength	15	kV/mm
	体积电阻率(25°C)	Volume Resistivity (25°C)	1*10 <sup>14</sup>	Ωcm
铜 Copper	材质	Material	无氧铜 OFHC	mm
	厚度	Copper Thickness	0.40,0.30,0.25,0.20,0.127	
DCB基板性能 DCB Substrate	最大尺寸	Master Card Size(Max)	138*190	mm
	最大可用面积	Max.Useable area(Max)	127*178	mm
	线距	Spacing Between Conductors(Min)	0.5	mm
	线宽	Width of Conductors(Min)	0.5	mm
	热膨胀系数	Thermal Expansivity(Normally)	7.4*10 <sup>-6</sup>	K <sup>-1</sup>
	铜层剥离强度(最小值)	Peeling Strength(Min)	>5	N/mm
	可焊性	Solderability	>95%	
	表面状态	Surface Options	裸铜/阻焊/镀镍/镀金 Bare Copper/Solder Stop/Ni-Plating/Au-Plating	

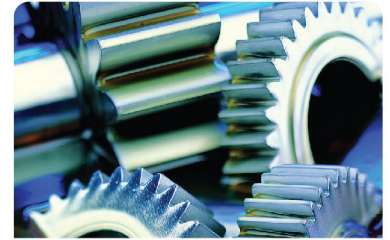
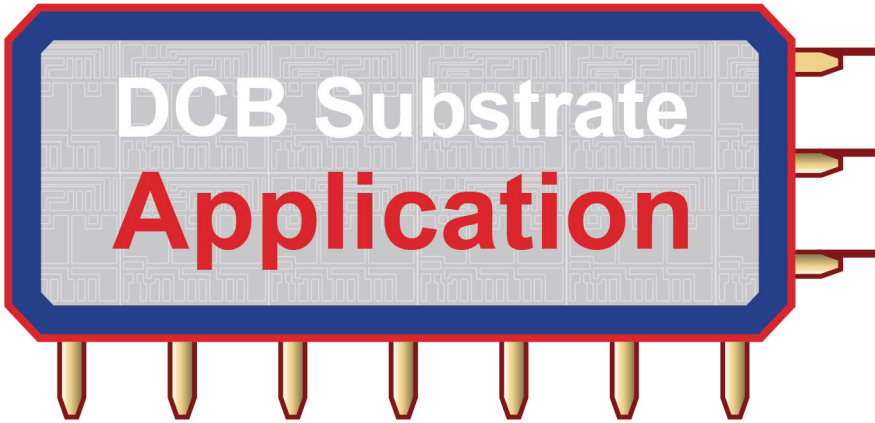
\* 可以根据客户要求定制。

\* 根据实际情况，一些参数可能会略有不同。

\* We accept custom-made orders according to specific requests.

\* Some value maybe a little bit different from the table according to specific conditions.

应用领域 / Application



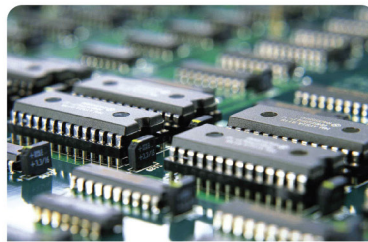
工业  
Industry

热电制冷器 Thermoelectric Coolers  
空调 Air Conditioning  
电源 Power Supplies



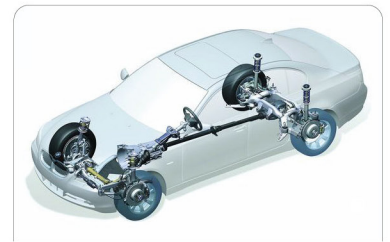
环保技术  
Environmental Technology

聚焦太阳能电池  
Concentrator Photovoltaic(CPV)  
太阳能转换器 Solar Converters  
风力发电站 Wind Power Plants  
LED 照明 LED Lighting



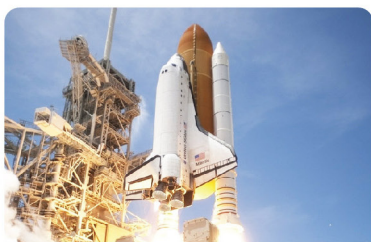
电力电子技术  
Power Electronics

IGBT模块 IGB Modules  
IPM模块 IPM Modules  
MOS模块 MOS Modules  
其他半导体组件  
Power Construction Semiconductor  
Elements



汽车  
Automotive

ABS  
电子传动 Electrical Power Steering  
LED车灯 LED Lighting  
混合动力汽车 Hybrid Vehicles  
电动汽车 Electric Vehicles



航空航天  
Aerospace

热电制冷器 Thermoelectric Coolers  
激光 Laser  
电源 Power Supplies



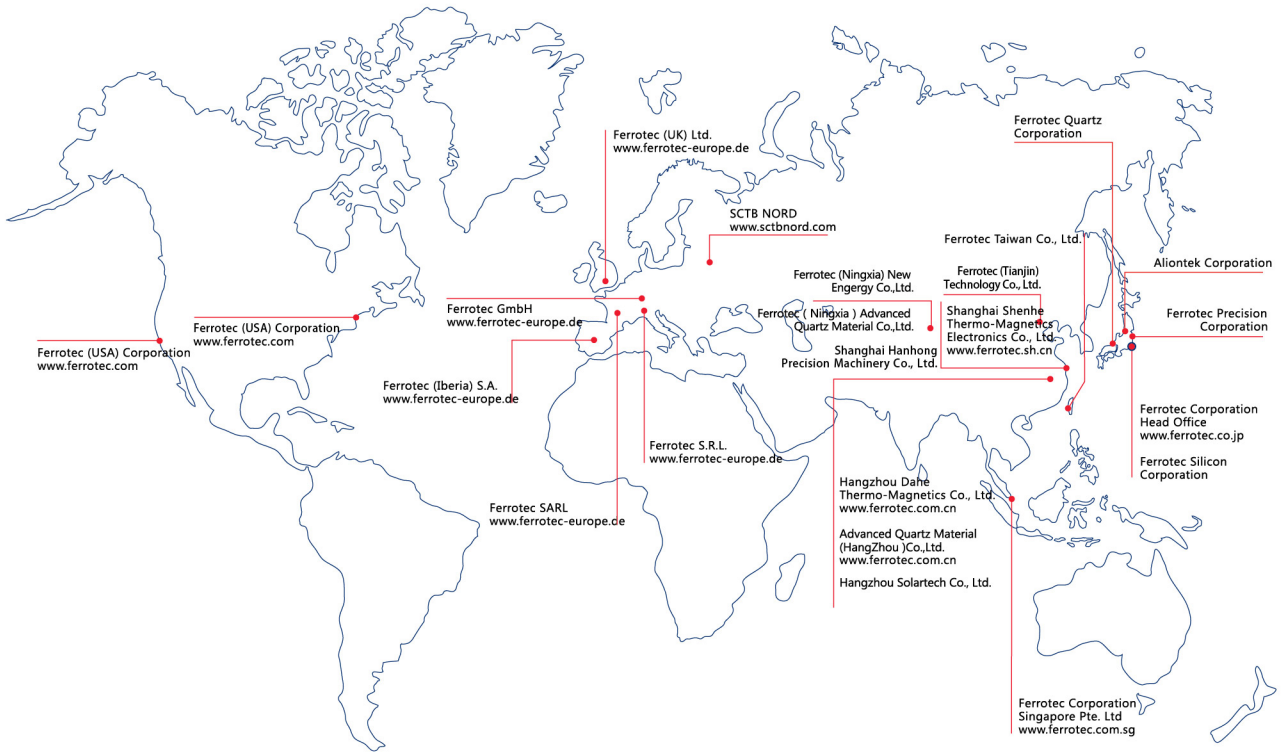
家电  
Home Appliances

白色家电 White Goods  
热电制冷器 Thermoelectric Coolers



铁路  
Railway

高铁 High-speed Rail  
动车 Bullet Trains



Ferrotec是具有多元化技术的跨国集团。在诸多终端产品、制造设备和很多行业中，Ferrotec都有出众的市场表现。我们能提供给客户各种先进材料、零部件和系统解决方案，从而让客户的产品能有更好、更精准可靠的市场表现。

以磁性流体技术和磁流体密封技术为基石，Ferrotec不断探索新的技术领域。在产品研发、制造和市场开拓方面，Ferrotec具有强大的持续发展的动力。Ferrotec正快速成长为一个具有多元化的集团公司，以满足日益增长的客户需求。

Ferrotec is a diversified technology company with a worldwide presence in a broad array of end products, manufacturing systems, and industries. We provide our customers with advanced material, component, and assembly solutions that make their products work better, more precisely, and more reliably.

Founded on a technology core of Ferrofluid magnetic liquid and Ferrofluidic sealing products, our company and our product portfolio have grown to meet the evolving needs of our customers. Ferrotec is now a global enterprise characterized by substantial intercompany cooperation in research, manufacturing and marketing of products.



With ISO 9001, ISO14001, TS16949 accreditations, you can be assured of high quality with all Ferrotec products.



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DCB 销售二维码