優良高導熱/高強度銅合金複合材
Excellent high thermal conductivity/high strength copper alloy composite
CU-01P

■ **隨著科技日新月異與半導體晶片發展速度，新進科技已將各電子通訊與電裝產品帶往更輕更薄更快速的領域。傳輸速度愈快，使用的散熱元件數量、面積等都要增加，單一的散熱材料已難以滿足高速傳輸的散熱需求，應用碳系材料開發出新型複合型散熱材料，CU-01P為因應各科技產業更新的需求發展，可望解決高速傳輸元件的散熱需求。**

With the rapid development of technology and the development speed of semiconductor chips, advanced technology has brought various electronic communication and electrical products to the field of lighter, thinner and faster. The faster the transmission speed, the larger the number and area of heat dissipation components used. It is difficult for a single heat dissipation material to meet the heat dissipation requirements of high-speed transmission. A new type of composite heat dissipation material has been developed using carbon-based materials. CU-01P is designed for various technology industries. The development of newer requirements is expected to solve the heat dissipation requirements of high-speed transmission components.

■ **CU-01P為新型銅合金獨特壓延複合技術生產， 加入石墨稀成為高導熱與高強度機能的銅合金複合材料。有良好的耐應力性及熱負荷性，具有高效熱傳及薄型化的優勢，為因應各高階電子及高導熱產品與高頻化的設計要求。**

CU-01P is produced by the unique rolling composite technology of new copper alloy, adding graphene to become a copper alloy composite material with high thermal conductivity and high strength. It has good stress resistance and thermal load resistance, and has the advantages of efficient heat transfer and thinning, in order to meet the design requirements of various high-end electronic and high thermal conductivity products and high frequency.

●化學組成/ Chemical Composition

成份 Element	含有(mass%) Content
鎳(Ni)	0.01~0.05
鐵(Fe)	0.01~0.2
銅(Cu)	≧97
石墨稀(SP^2)	0.01~0.1
奈米碳管(CNT)	0.01~0.1

●彎曲特性/Bending Workability

GOOD-way(R/t)	90°	1.5T
	180°	2.0T

●物理特性/Physical Properties

熱膨張係數(10^{-6}/K) Coefficient of Thermal Expansion	17.7
熱傳導率(W/m· K) Thermal Conductivity	≧800
導電率(%IACS) Electrical Conductivity	≧80
縱彈性系數(GPa) Modulus of Longitudinal Elasticity	130
比重密度(g/cm^3) Specific Gravity	8.9

●機械特性/Mechanical Properties

抗拉強度(MPa) Tensile Strength	屈服強度(MPa) Yield Strength	伸長率(%) Elongation	維氏硬度 HV
400~550	≧400	≧6	130~180

● **CU-01P 優點:結合石墨稀炭材可加速散熱並減薄、減重與大幅降低成本的優勢。**