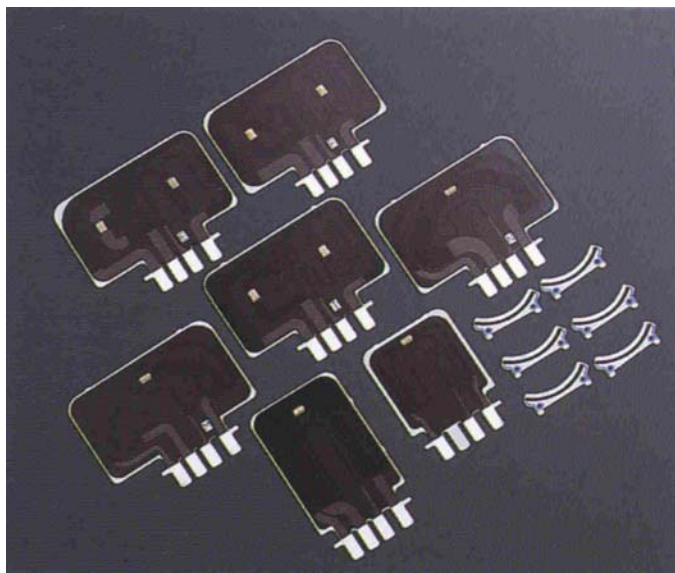


Fujimetax

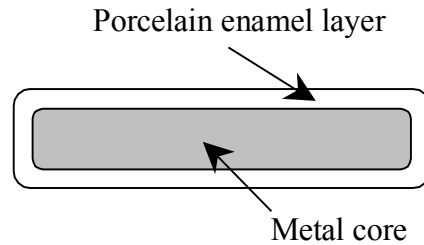
Features

- Good heat dissipation
- High mechanical strength
- High heat & thermal shock resistance
- Complex shaped substrates
- Non-combustibility
- Electro-magnetic shielding



Specification & Properties

Construction	Metal core		Decarburised steel
	Insulation layer		Alkali-free crystallised porcelain enamel
Dimensions	Maximum size		300×300mm
	Thickness	Core	0.4~1.6mm
		Insulation	0.1~0.2mm
	Meniscus		<50μm
	Hole diameter		$f(\text{core thickness})-0.1\text{mm}$
Hole-to-hole pitch		$f2.5\text{mm}$	
Mechanical properties	Permissible bending radius		400mm (core 0.7mm, insulation 0.15mm)
	Micro Vickers hardness		Hv700 (200g load)
Thermal properties	Maximum re-firing temperature		850°C
	Thermal expansion coefficient (linear)		$11\sim14\times10^{-6}/^{\circ}\text{C}$
	Thermal conductivity	Core	0.7W/cm.°C
		Insulation	0.014W/cm.°C
Electrical properties (25°C, in dry air)	Bulk resistivity		$>10^{15}\Omega\cdot\text{cm}$
	Surface resistivity		$>10^{15}\Omega/\text{cm}^2$
	Dielectric strength		>1kV
	Dielectric constant		7.5~8.5 (100Hz~10MHz)
	Dissipation factor		0.005~0.01 (100Hz~10MHz)
Surface roughness	Ra		0.2~0.4μm (@c=0.25mm)
	Meniscus		<50μ



Cross-section of Fujimetax

- Good heat dissipation compared with conventional resin or ceramic substrates, the porcelain enamelled steel board has higher heat dissipation properties due to the outstanding heat transfer characteristics of the metal core
- High mechanical strength the metal core supplies high mechanical strength to the board, with increased shock and torsion resistance. Furthermore, it is possible to mount the board directly, e.g. to a housing
- High heat & thermal shock resistance consisting of crystallised enamel, the enamel layer demonstrates a much higher melting temperature than usual thick film firing temperatures. A combination of metal core and thin porcelain enamel layer provides a high thermal shock resistance
- Complex shaped substrates with the metal core punched or bent by means of a press, it is possible to manufacture any substrate whose configuration is too complicated and difficult to make with a ceramic board
- Non-combustibility both the metal core and enamel insulation layers are made of non-combustible inorganics
- Electro-magnetic shielding the metal core serves as an electrostatic shield and, if the core is made with magnetic materials (typically low carbon steel) it may also be used as a magnetic shield or circuit