Joinchip™ (Hybrid ceramic components)

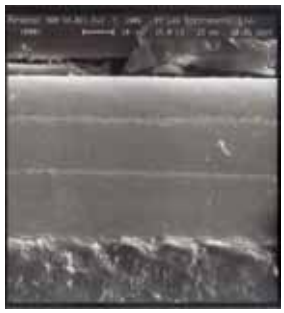
Patent Pending

"Joinchip™", which are worldly first developed, are the brand name of Hybrid ceramic electric components based on unique designs, process and materials with patents pending by Joinset. The "Joinchip™" are consisted of ceramic layers, electrodes and a ceramic substrate. The layers on the substrate provide electric functions and the substrate provide mechanical property for "Joinchip™". And, the layers are mechanically and chemically bonded well with the substrate having their own properties due to Joinset's know-how. Due to those ideal bonding well, "Joinchip™" have got both advantages of electric functions and mechanical strengths at a time. Those are what we want to find and are suitable for many applications at low price with various multi-functions.

At present, there are three technologies to produce most electronic ceramic components, those are "*Thin film*", "*Thick film*" and "*Multi-layer*". Even if aboves have their own strong points, also they have their own weak one. In order to solve those problems, "Joinchip™", have been developed and applied. The Joinchip could solved most of those problems due to their unique design, material and process. In fact "Joinchip™" are better than before in most and can meet customer's new requirements for future business.

Joinchip™ (Applications)

Mechanical	+	Electrical
Substrate		**Function Layer**
Alumina		Semicon Ceramic : Varistor, Thermistor
AIN		Magnetic Ceramic : Inductor, RF Absorbor
		Dielectric Ceramic : MLCC, ESC
		Piezo Ceramic : Sensor, Vibrator
		Metal Electrodes : Resistor, Fuse, Ant



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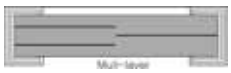
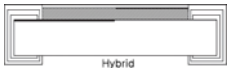
Comparison Table

EU-RoHS

Contents	Thin film	Thick film	Multi-layer	Joinchip™ (Hybrid)
Construction				
Main Process	Sputtering Etching	Printing Trimming	Casting Layering	Bonding Trimming
Industry	Semi-Conductor	Over Coating	Multi-Layer	Over-Layer
Precision	Best	Poor	Middle	Better
Raw Material	Limited	Limited	Various	Various
Price	High	Low	High	Low
Applications	Filter LED Etc.	Resistor Heater Etc.	Varistor Thermistor MLCC, Inductor	Varistor, Ant Thermistor Inductor, Piezo

Joinchip™'s representive constructions

If you have questions, please directly contact to Mr. Choi. (lights@joinset.com)