Now available:
Printed copper metallizations

Metallizing – go for a dependable foundation

CeramTec is one of the leading manufacturers internationally of metallized substrates on aluminum oxide (Rubalit®) and aluminum nitride (Alunit®) bases.

Over 30 years of experience in metallizing, and a worldwide presence with manufacturing and laser facilities in Europe, North America and Asia make us the qualified partner for the hybrid industry, electronic component manufacturers and the power electronics industry.

We metallize our ceramic substrates in our specialist facilities using CeramTec developed pastes.

Good to know

CHARACTERISTICS OF CERAMTEC'S METALLIZED SUBSTRATES WITH THEIR SUPERIOR MECHANICAL, ELECTRICAL AND THERMAL PROPERTIES:

- High adhesive strength
- Good flux
- Excellent solderability
- All wire materials bondable (Au, Al)
- No silver migration
- Superior leaching resistivity
- Good for thermo compression welding

Good to know

METALLIZED CERAMICS FOR:

- Power electronics, Power modules, rectifiers, thyristors, ignition elements
- Thermo-electrical applications, Peltier, heating and cooling elements
- Optoelectronics LED´s, optocouplers, photo diodes, photo transistors, reflex sensors, photo logic sensors
- Components: SMT-inductor cores, sensors
- Hybrids: Special single-layer, substrates for microelectronic, semiconductors

CeramTec
THE CERAMIC EXPERTS

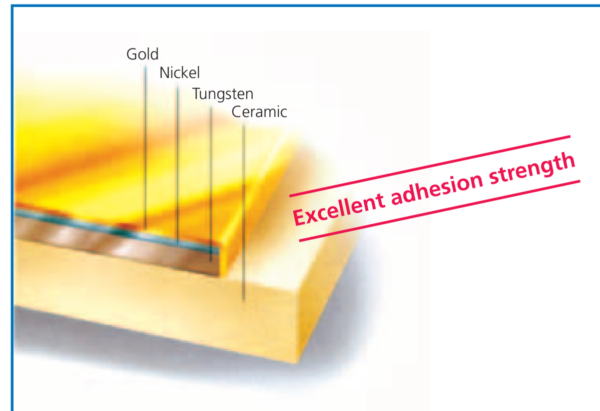
Metallizing

Layer Design:

The base layer is tungsten (W), screenprinted with a minimum layer thickness of 6 µm. Both electroless and electrolytic nickel (Ni) plating (min. 2 µm) ensure a good solder flow, and an additional gold flash (Au) layer (~ 0.1 mm) can be added to enhance corrision resistance. We can also supply a bondable electrolytic gold layer or lead free tin for solder finishes.

Standard metallization:

W/Ni/Au
Ag/Pd, Ag/Pd/Pt
Cu/Ni/Au, Cu/Ni/Pd/Au, Cu/Sn
Other metallizations available on request.



Refractory metallization system

Standard dimension for metallization:				
Rubalit®, Alunit®: 120 mm x 160 mm (4.7" x 6.3")				
Materials				
Rubalit® 708	**Rubalit® 708S**	**Rubalit® 708HP**	**Rubalit® HSS**	**Alunit®**

Specifications and parameters of ceramic substrates

	Standard	**Special**
Basic metallization	1. Tungsten ≥ 6 µm 2. Silver/Paladium ≥ 6 µm 3. Silver/Paladium/Platin ≥ 6 µm 4. Copper ≤ 200 µm	Other metallizations on demand
Metal layer	Nickel, electroless ≥ 2 µm	≥ 2 µm to 6 µm Sintering of nickel layer is feasible
	Goldflash, electroless, approx, 0.1 µm	Plated to 1.5 µm on demand
		2 µm to 3 µm galvanic solder coating
Options	Double side metallization Vias Viafilling Ni on ceramic NiCu on ceramic Dielectric layer	"Fine Line" AgPd on Ferrite Pins, Leads 6 sides on one part metallized
Individual segment size	Edge length min. 1.5 mm (0.06") for single parts	
Metallized edge to scribe line	min. 0.20 mm (0.008")	0.15 mm (0.006")
Edge tolerance, location tolerance	± 0.20 mm (0.008")	± 0.10 mm (0.004")
Metallization Adhesion	≥ 25N/mm² typically 40 N/mm²	
Solder wettability	≥ 95 %	

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Indexes and parameters for ceramic substances: In order to profile ceramic substances certain parameters are indicated. The crystalline nature of these substances, statistical fluctuations in the composition of the substances and in the factors that impact on the production processes indicate that the figures quoted are typically mean values and hence the substance parameters quoted in this brochure are only standard, recommended or guide values that might differ given dissimilar dimensions and production processes.