Product Samples

ATP1007: Polyimide Supported Bridges

Applied Thin-Film Products (ATP) is pleased to provide ceramic thin-film samples for your evaluation.

TaN/TiW/Au metalization on Aluminum Oxide (Al_2O_3) with polyimide supported Lange coupler interconnects. This process provides a consistent Lange coupler interconnect, which reduces test and tune time and eliminates wire bonding. Since the interconnects are supported by 3 to 4 microns of polyimide there is virtually no risk of collapsing or damaging the bridge during shipment or assembly.

Material Specifications

Asfired High Density 996 Aluminum Oxide SuperStrate 996

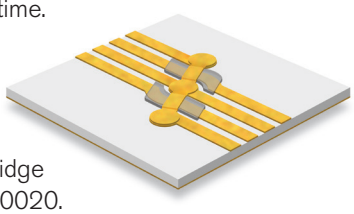
Properties	Values
Chemical Composition	Al_2O_3
Purity	99.6%
Color	White
Nominal Density	3.88g/cm^3
Surface Finish (Asfired)	3µ"(76.2nm)
Camber	0.002" (0.0508mm)
Thickness	0.015" (0.381mm)*
Thickness Tolerance (±)	0.001" (0.0254mm)
Coefficient of Thermal Expansion (CTE)	7.0–8.3 x 10^{-6} (25–1000°C)
Thermal Conductivity 100°C	26.9 Watts/m°K
Dielectric Constant 1 MHz	9.9 @ 1 MHz ±0.1
Dielectric Constant 10 GHz	9.7 @ 10 GHz ±0.1
Dissipation Factor (Loss Tangent)	0.0001 @ 1 MHz
Hardness (Rockwell)	87
Flexural Strength	90K (10^3) lbs/in^2 (620Mpa)
Compressive Strength	54 x 10^3 M lbs/in^2
Grain Size	< 1.0µm

Material specifications provided by Coors Ceramic Company

* Additional thicknesses and tolerances available upon request.

ATP offers build-to-print service for a wide range of materials and metalization schemes. ATP fabricates circuits on substrates from As-Fired Alumina to Beryllium Oxide to Fused Silica, even Silicon. Metalizations range from the standard Tan/TiW/Au to films including Nickel, Palladium, or Titanium.

Polyimide supported bridges are used instead of wire bonding. Bridge heights and lengths are consistent, which will eliminate test and tune time.

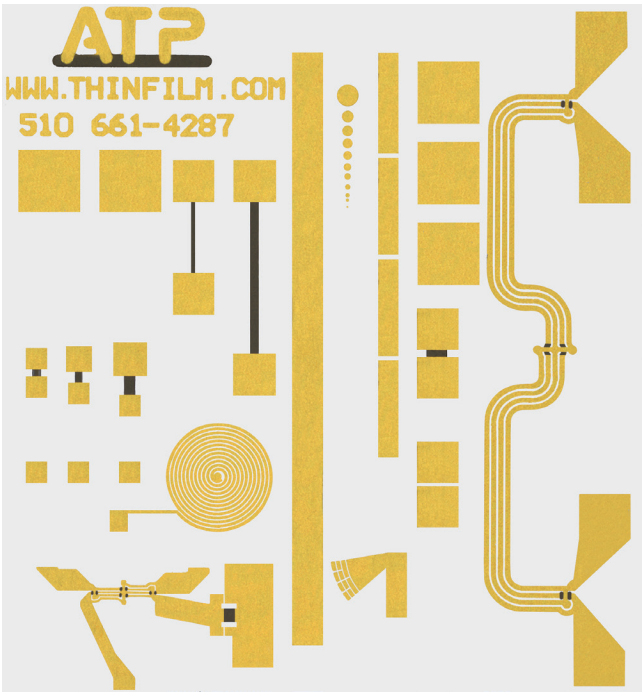


Let ATP add these to your new or existing designs.

Please ask for Polyimide Bridge Design Rules document #50020.

ATP1007: Material is 15 mil As-Fired Al_2O_3
TaN Resistors = 50 Ohms per Square
TiW = 400–800 Ångströms
Au = 120µ" minimum
With Polyimide Supported Bridgest

Sample Provided



At ATP, we constantly evolve our processing and material capabilities to reflect our customer's changing needs. If you have a circuit requirement that is out of the "normal" thin-film type, please contact ATP at 1.510.661.4287 or visit our website at www.thinfilm.com. ATP would enjoy discussing your application with you and working to develop a solution.

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