

Product Samples

ATP1009: Polyimide Filled Vias

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

TaN/TiW/Au metalization with polyimide filled, conductive, plated-thru-CO₂ laser drilled via holes in Aluminum Oxide (Al₂O₃). Polyimide is used as a non-conductive plug for via hole assemblies. Will prevent epoxy and eutectic solders from reaching the surface of the circuit while keeping continuity between back side and front side surfaces.

Material Specifications

Asfired Superstrate 996 Aluminum Oxide

Properties	Values
Chemical Composition	Al ₂ O 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 ² 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

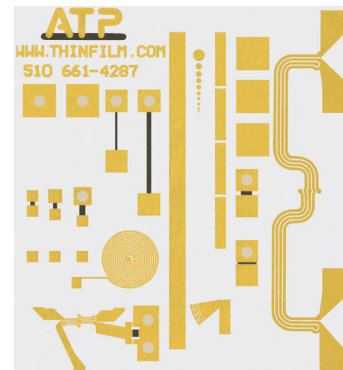
Material specifications provided by Coors Ceramic Company

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.

ATP1009: Material is 15 mil As-Fired Al₂O₃
 TaN Resistors = 50 Ohms per Square
 TiW = 400–800 Ångströms
 Au = 120μ" minimum



Sample Provided



Physical Properties of Polyimide

Manufactured according to Mil Spec Mil-I-45208

Properties	Value
Max. Use Temp.	2800°F (1500°C)
Base	Alumina Oxide
Compressive Strength	4200 psi
Flexural Strength	1900 psi
Dielectric Strength	125 Volts/mil
Volume Resistance	10 ⁹ Ohm cm
Thermal Conductivity	15 BTU in/hr/°F ft ²
Thermal Expansion	4.0 x 10 ⁻⁶ /°F
Components	2.0
Mix Ratio	100 to 30 (by weight)
Consistency	Paste

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.