99.6% Alumina Specification Chart

Specifications are offered as assistance to Engineers and Purchasing professionals in the design and procurement of thin and thick film circuit substrates.

*Centerline Technologies makes no certification as to the suitability of materials for any application.

(Basis for specifications available upon request.)

Properties	Units	Polished High Density 996 Alum. Oxide	As-Fired High Density 996 Alum Oxide Hi-rel Grade
Chemical Composition		AI2O3	AI2O3
Purity	%	99.6	99.6
Color		White	White
Nominal Density	g/cm3	3.87	3.87
Surface Finish (Polished)	µ-inches	<1.0	n/a
Surface Finish (Lapped)	µ-inches	8-15*	n/a
Surface Finish (As fired)	µ-inches	n/a	2-3
Camber	inch/inch	.0003/.0005	0.002
Thickness	inches	0.004-.040*	0.005-0.025*
Thickness Tolerance	inches	±0.0005	±0.001*
Process Sizes	inches		
(L/W)	1.0/6.0	1.0/6.0	
Coefficient of Thermal Expansion (CTE)	10-6	7.0-8.3 (25-1000°C)	7.0-8.3 (25-1000°C)
Thermal Conductivity	Watts/m°K	26.9	26.9
Dielectric Constant	@1 MHz	9.9	9.9
Dielectric Constant	@4 MHz	9.9	9.9
Dielectric Constant	@10 MHz	9.7	9.7
Dissipation Factor (Loss Tangent)	@1 MHz	0.0001	0.0001
Dissipation Factor (Loss Tangent)	@10 MHz	0.0002	0.0002
Q	@1 GHz	5000	5000
Hardness	Rockwell	87	87
Flexural Strength	K(10-3) lbs/sq.in.	90	90
Compressive Strength	M(10-3) lbs/sq.in.	54	54

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