

Item	Unit	Material Testing Method	Oxide Ceramics						
			Al2O3						
			A995	A995LD	A995S	A999	AHPF / AJPF		
Color	-	-	White	White	White	Milky White	White		
Density	g/cm ³	Water displacement method	3.9	3.9	3.9	3.9	4.0		
Water Absorption Rate	%	Water displacement method	0	0	0	0	0		
Mechanical Feature	Hardness	Vickers	GPa	JIS R 1610	17	17	15	18	20
	Bending Strength	20°C	MPa	JIS R 1601	410	410	230	480	550
		1000°C	MPa	JIS R 1601	-	-	-	-	550
		1200°C	MPa	JIS R 1601	-	-	-	300	400
	Fracture Toughness		MPa√m	JIS R 1607	5	4	-	4	3
	Young's Module		GPa	JIS R 1602	380	365	370	400	400
Poisson's Ratio		-	JIS R 1602	0.23	0.23	0.24	0.24	0.24	
Thermal Feature	CTE	23±3°C	1/K(X10 ⁻⁶)	Laser coefficient of thermal expansion	-	-	-	-	-
		25~200°C	1/K(X10 ⁻⁶)	JIS R 1618	6.5	5.9	6.2	5.3	5.6
		25~500°C	1/K(X10 ⁻⁶)	JIS R 1618	7.6	7.3	7.1	7.5	7.7
		25~1000°C	1/K(X10 ⁻⁶)	JIS R 1618	8.3	8.3	8.0	8.6	8.6
	Thermal Conductivity (20°C)		W/m·K	JIS R 1611	30	28	30	33	35
	Specific Heat		J/kg·K	JIS R 1611	730	770	840	800	800
	Thermal Fatigue (ΔT)		K	Water quenching method	-	-	500	200	200
Electronic Feature	Insulation Strength		kV/mm	Bias voltage applied LB technique	14	15	-	12	12
	Volume Resistivity (20°C)		Ω·cm	3 probes method	> 10 ¹⁴	> 10 ¹⁴	> 10 ¹⁴	> 10 ¹⁴	> 10 ¹⁴
	Dielectric constant (25°C)	1MHz	-	Bridge method	10	10	10	10	10
		3GHz	-	Dielectric resonator method	10	10	10	10	10
	Dielectric constant (25°C)	1MHz	X10 ⁻⁴	Voltammeter method	<300	<5	<300	7	1
3GHz		X10 ⁻⁴	Dielectric resonator method	<30	1	<30	-	<1	
Feature				Possible for huge size, Relatively low cost	Low dielectric constant, Possible for huge size, Relatively low cost	High fracture toughness, High thermal shock resistance, Possible for huge size, Relatively low cost	Possible for huge size	Pore free (Dense), High chemical resistance, Low dielectric constant	
				High strength, High wear resistance, High chemical resistance, High electric insulation					

The values in the table are reference values, not guaranteed values.