

Silicon Nitride SiN80 : Technical Data Sheet

Silicon Nitride		Method	SiN 80
ρ_{th}	Density (theoretical) (g/cm ³)	calculated	3,25
ρ_m	Density (as measured) (g/cm ³)	buoancy	3,22
σ_B	Flexural strength (MPa)	Ball on ring	> 800
σ_D	Compressive strength (GPa)		> 2
K_{IC}	Fracture toughness (MPa m ^{1/2})	n.n.	
E	Young's modulus (GPa)	Ultrasonic	336
λ	Thermal conductivity (W/mK)	Laser flash	80 ± 10
α	Coeff. of thermal expansion (10 ⁻⁶ K ⁻¹) RT - 1000 °C	Dilatometric	3,0 - 3,5
c_p	Specific heat (J/kgK)	Calorimetric	632 ± 20
	Volume resistivity (Ωcm)	at 5 kV	> 10 ¹²
	Dielectric strength (kV/mm)	in Fluorintert	> 15
ϵ_r	Dielectric constant (at 1 MHz)	LCR meter	8,3.
tan δ	Loss tangent (at 1 MHz)	LCR meter	1,2·10 ⁻³
	Thermal shock resistance		excellent

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