



ANCeram – Technical Data

Aluminium Nitride			AIN 140	AIN 180
ρ_{th}	Density (theoretical)	(g/cm ³)	3,26	3,32
ρ_m	Density (as measured)	(g/cm ³)	3,24	3,31
σ_B	Flexural strength	(MPa)	350	> 300
σ_D	Compressive strength	(GPa)	2,1	> 2,0
K_{IC}	Fracture toughness	(MPa m ^{1/2})	3,35 ± 0,2	3,35 ± 0,2
E	Young's modulus	(GPa)	310	310
λ	Thermal conductivity	(W/mK)	140 ± 10	180 ± 10
α	Coeff. of thermal expansion	(10 ⁻⁶ K ⁻¹)		
	RT - 100 °C		3,6	3,6
	RT - 300 °C		4,6	4,6
	RT - 500 °C		5,2	5,2
	RT - 1000 °C		5,6	5,6
c_p	Specific heat	(J/kgK)	738 ± 20	738 ± 20
	Volume resistivity	(Ω cm)	> 10 ¹²	> 5 x 10 ¹²
	Dielectric strength	(kV/mm)	≥ 25	> 20
ϵ_r	Dielectric constant (at 1 Mhz)		8,6	8,6
$\tan \delta$	Loss tangent (at 1 MHz)		0,5 x 10 ⁻³	0,5 x 10 ⁻³
	Resistance to thermal shock		excellent	excellent
	α - radiation	(Imp/cm ² h)	≤ 0,07	
	$\alpha + \beta$ - radiation	(Imp/cm ² h)	≤ 0,5	

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