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Custom Services for Magnetic Components

Acal BFi kOr

Specification for Soft Magnetic Material

Material: **kOr 118**

Nominal data:

	Symbol	Unit		Conditions	
Chemical composition		at%	$Fe_{73,5}Cu_1Nb_3Si_{15,5}B_7$		
Saturation flux density (saturation induction)	B_{sat}	mT	1180 1100	H > 100 A/m H > 100 A/m	25°C 100°C
Curie temperature	T_c	°C	600		
Resistance	ρ	µΩm	1,15		
Density	d	g / cm³	7,3	annealed	
Saturation magnetostriction	λ_S	ppm	<1	annealed	
Permeability	μ_i μ_{max}		80.000 - 150.000 100.000 - 250.000	50 Hz, adjustable[1)]	
Remanence	B_r	mT	60 100	μ_{max} = 100.000, static μ_{max} = 200.000, static	
Tape thickness[2)]	d	µm	20-25		
Tape width	b	mm	3 - 50		
Filling factor (stacking factor)	FF	%	>80 >76	b ≤ 25 mm b > 25 mm	
recommended max. storage and operational temperature		°C	120		

Remarks:

1) Permeability µ can be adjusted in the range of about 80.000 - 250.000 (nominal value at 50 Hz).

A_L-values are calculated according to $A_L = \mu_r \mu_0 \frac{A_{Fe}}{l_{Fe}}$

(A_L in mH, A_{Fe} in mm², l_{Fe} in mm, $\mu_0 = 4\pi \cdot 10^{-7}$ Vs/Am)

A_{Fe} and l_{Fe} depend on the core dimensions and are indicated in the core datasheets.

2) Effective tape thickness, calculated from length, width and density of a tape sample.
Geometrical tape thickness (measured with a tape stack using a gauge) is higher by 10% - 15% due to roughness.

Material data of specific product specifications may differ due to geometry and dimension.