

LF22 (Lead-Free)

KNN Piezoceramic Material

Description

LF22 is a lead-free piezoceramic formulation based on the potassium sodium niobate system (KNN). It is an alternative to soft-doped PZT ceramics, offering a higher Curie temperature than LF41.

Key Features and Benefits

- Lead-Free Product
- Candidate for Replacing Soft-Doped PZT

Ideal Applications

- Receivers, Hydrophones
- Implantable Devices
- Non-Destructive Testing (NDT)
- Flow and Level Transducers
- Actuators

Property	Symbol	Unit	Value
Relative Free Dielectric Constant (1 kHz)	K_{33}^{σ}	-	1400
Dielectric Dissipation Factor (1 kHz)	tanδ	-	0.013
Curie Temperature	T _c	°C	290
Density	ρ	g/cm³	4.55
Mechanical Quality Factor	Q _m	-	100
Coupling Coefficients	K _p	-	0.47
	k_{t}	-	0.39
	k ₃₁	-	0.27
	k ₃₃	-	0.50
Piezoelectric Charge Coefficient (Displacement Coefficient)	<i>d</i> ₃₁	pC/N	-95
	d ₃₃		180
	<i>d</i> ₁₅		260
Frequency Constants	N _p	Hz·m	3200
	N _t		2900
	N ₃₁		2200
	N ₃₃		2300

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