

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)	$\tan\delta$	-	0.013
Curie Temperature	T_C	°C	290
Density	ρ	g/cm ³	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)	d_{31}		-95
	d_{33}	pC/N	180
	d_{15}		260
Frequency Constants	N_p		3200
	N_t	Hz·m	2900
	N_{31}		2200
	N_{33}		2300