

LF41 (Lead-Free)

KNN Piezoceramic Material

Description

LF41 is a lead-free piezoceramic formulation based on the potassium sodium niobate system (KNN). Its high piezoelectric coefficients make it an alternative to soft-doped PZT ceramics.

Key Features and Benefits

- Lead-Free Product
- Low Mechanical Quality Factor
- High Piezoelectric Coefficients

Ideal Applications

- Receivers, Hydrophones
- Diagnostics (Imaging, IVUS)
- Combined, Doppler
- Implantable Devices
- Non-Destructive Testing (NDT)
- Shock/Acceleration Sensors
- Acoustic Emission
- Actuators

Property	Symbol	Unit	Value
Relative Free Dielectric Constant (1 kHz)	K_{33}^{σ}	-	2200
Dielectric Dissipation Factor (1 kHz)	$\tan\delta$	-	0.019
Curie Temperature	T_c	°C	250
Density	ρ	g/cm ³	4.45
Mechanical Quality Factor	Q_m	-	50
Coupling Coefficients	k_p	-	0.53
	k_t	-	0.47
	k_{31}	-	0.30
	k_{33}	-	0.59
Piezoelectric Charge Coefficient (Displacement Coefficient)	d_{31}		-148
	d_{33}	pC/N	300
	d_{15}		370
Frequency Constants	N_p		2990
	N_t	Hz·m	2560
	N_{31}		2130
	N_{33}		2120