NCE59

Noliac piezoceramic material NCE59 has a very high sensitivity featuring extremely high permittivity, large coupling factor and piezoelectric constants.

SPECIFICATIONS

Properties	Symbol & unit	NCE59*
DIELECTRIC PROPERTIES (tolerances +/- 10%)		
Relative Dielectric Constant	$\varepsilon^{T}_{33} / \varepsilon_0$	2900
Dielectric Loss Factor	tgδ [10^{-4}]	190
Dielectric Loss Factor at 400V/mm	tgδ [10^{-4}]	
ELECTROMECHANICAL PROPERTIES (tolerances +/- 5%)		
Electromech. Coupling Factors**	k_p	0.64
	k_{31}	0.37
	k_{33}	0.75
	k_t	0.52
Piezoelectric Charge Constants	$-d_{31}$ [10^{-12} C/N]	240
	d_{33} [10^{-12} C/N]	575
Piezoelectric Voltage Constants	$-g_{31}$[10^{-3} Vm/N]	10
	g_{33} [10^{-3} Vm/N]	23
Frequency Constants	N^{E}_{p} [m/s]	1970
	N^{D}_{t} [m/s]	1960
	N^{E}_{1} [m/s]	1410
	N^{D}_{3} [m/s]	1500
PHYSICAL PROPERTIES (tolerances +/- 5%)		
Mechanical Quality Factor	Q_m	90
Density	ρ [10^{3} kg/m^3]	7.45
Elastic Compliances	s^{E}_{11} [10^{-12} m^2/N]	17
	s^{E}_{33} [10^{-12} m^2/N]	23
Curie Temperature	T_c[°C]	235

* For multilayer components only
** Measured in accordance with standard EN 50324

The values listed are for reference purposes only and cannot be applied unconditionally to all shapes and

dimensions. Values vary depending on the actual shape, surface finish, shaping process and post-processing of the product.