

## NCE56



Noliac piezoceramic material NCE56 has a very high sensitivity featuring extremely high permittivity, large coupling factor and piezoelectric constants.

### SPECIFICATIONS

Properties	Symbol & unit	NCE56
DIELECTRIC PROPERTIES (tolerances +/- 10%)		
Relative Dielectric Constant	$\epsilon_{T33}^T / \epsilon_0$	2900
Dielectric Loss Factor	$\text{tg}\delta [10^{-4}]$	140
Dielectric Loss Factor at 400V/mm	$\text{tg}\delta [10^{-4}]$	
ELECTROMECHANICAL PROPERTIES (tolerances +/- 5%)		
Electromech. Coupling Factors**	$k_p$	0.64
	$k_{31}$	0.37
	$k_{33}$	0.74
	$k_t$	0.50
Piezoelectric Charge Constants	$-d_{31} [10^{-12} \text{ C/N}]$	250
	$d_{33} [10^{-12} \text{ C/N}]$	580
Piezoelectric Voltage Constants	$-g_{31} [10^{-3} \text{ Vm/N}]$	9
	$g_{33} [10^{-3} \text{ Vm/N}]$	20
Frequency Constants	$N_p^E [\text{m/s}]$	2000
	$N_t^D [\text{m/s}]$	2030
	$N_1^E [\text{m/s}]$	1530
	$N_3^D [\text{m/s}]$	1400
PHYSICAL PROPERTIES (tolerances +/- 5%)		
Mechanical Quality Factor	$Q_m$	80
Density	$\rho [10^3 \text{ kg/m}^3]$	7.65
Elastic Compliances	$s_{11}^E [10^{-12} \text{ m}^2/\text{N}]$	18
	$s_{33}^E [10^{-12} \text{ m}^2/\text{N}]$	20
Curie Temperature	$T_c [^\circ\text{C}]$	242

\*\* 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.