

NCE57



Piezoelectric materials NCE51 and NCE57 are standard soft materials, particularly suitable for actuators and low power non-resonant applications in which high coupling factor and /or high charge sensitivity are requested.

SPECIFICATIONS

Properties	Symbol & unit	NCE57*
DIELECTRIC PROPERTIES (tolerances +/- 10%)		
Relative Dielectric Constant	$\epsilon_{T33} / \epsilon_0$	1800
Dielectric Loss Factor	$\text{tg}\delta [10^{-4}]$	170
Dielectric Loss Factor at 400V/mm	$\text{tg}\delta [10^{-4}]$	
ELECTROMECHANICAL PROPERTIES (tolerances +/- 5%)		
Electromech. Coupling Factors**	k_p	0.59
	k_{31}	0.33
	k_{33}	0.70
	k_t	0.47
Piezoelectric Charge Constants	$-d_{31} [10^{-12} \text{ C/N}]$	170
	$d_{33} [10^{-12} \text{ C/N}]$	425
Piezoelectric Voltage Constants	$-g_{31} [10^{-3} \text{ Vm/N}]$	11
	$g_{33} [10^{-3} \text{ Vm/N}]$	27
Frequency Constants	$N_p^E [\text{m/s}]$	2010
	$N_t^D [\text{m/s}]$	1950
	$N_1^E [\text{m/s}]$	1400
	$N_3^D [\text{m/s}]$	1500
PHYSICAL PROPERTIES (tolerances +/- 5%)		
Mechanical Quality Factor	Q_m	80
Density	$\rho [10^3 \text{ kg/m}^3]$	7.7
Elastic Compliances	$s_{11}^E [10^{-12} \text{ m}^2/\text{N}]$	17
	$s_{33}^E [10^{-12} \text{ m}^2/\text{N}]$	23
Curie Temperature	$T_c [^\circ\text{C}]$	350

* 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.