

CeramTec Sonox® P504 Piezoceramic

Category : Ceramic , Oxide , Piezoelectric

Material Notes:

Piezoceramic devices are used to convert mechanical features such as pressure or acceleration into voltages, or conversely, to convert a voltage into mechanical motion or oscillation. Piezoceramics require very little energy and their shape potential is almost unlimited. Such properties allow this material to be used in wide-ranging apparatus and mechanical engineering applications. Sonox® P504 is designed specifically for sensors.

Order this product through the following link:

http://www.lookpolymers.com/polymer_CeramTec-Sonox-P504-Piezoceramic.php

Physical Properties	Metric	English	Comments
Density	7.65 g/cc	0.276 lb/in ³	

Electrical Properties	Metric	English	Comments
Curie Temperature	350 °C	662 °F	T _c
Dielectric Constant	835	835	e ₃₃ S/e?
	1085	1085	e ₁₁ S/e?
	1730	1730	e ₃₃ T/e?
	1920	1920	e ₁₁ T/e?
Dissipation Factor	0.012	0.012	tand
Piezoelectric Longitudinal Coupling Factor, k ₃₃	0.71	0.71	
Piezoelectric Transverse Voltage Coefficient, d ₃₁ , 10 ⁻¹² m/V	-157	-157	
Piezoelectric Shear Charge Coefficient, d ₁₅ , 10 ⁻¹² m/V	530	530	
Piezoelectric Longitudinal Voltage Coefficient, g ₃₃ , 10 ⁻³ V·m/N	25.5	25.5	
Piezoelectric Planar Coupling Factor, k _p	0.59	0.59	
Piezoelectric Mechanical Q	90	90	
Piezoelectric Shear Coupling Factor, k ₁₅	0.66	0.66	
Piezoelectric Longitudinal Charge Coefficient, d ₃₃ , 10 ⁻¹² m/V	390	390	
Piezoelectric Transverse Coupling Factor, k ₃₁	0.32	0.32	

Descriptive Properties	Value	Comments
Aging Rates (%/decade)	0.1	Ck
	0.4	Cf
	-0.4	Ce
Elastic Compliance ($10^{-12} \text{ m}^2/\text{N}$)	16.3	s11^E
	17.5	s33^E
Elastic Rigidity (10^{10} N/m^2)	14.9	c33^D
	4.4	c55^D
Frequency Constants (kHz·mm)	1250	N3
	1320	N1
	2020	Np
	2035	Nt
Piezoelectric Coupling Coefficient, kt	0.51	

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