

CeramTec Sonox® P502 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® P502 is designed specifically for sensors.

Order this product through the following link:

http://www.lookpolymers.com/polymer_CeramTec-Sonox-P502-Piezoceramic.php

Physical Properties	Metric	English	Comments
Density	7.74 g/cc	0.280 lb/in ³	

Electrical Properties	Metric	English	Comments
Curie Temperature	335 °C	635 °F	T _c
Dielectric Constant	875	875	e33 S/e?
	1260	1260	e11 S/e?
	1850	1850	e33 T/e?
	1950	1950	e11 T/e?
Dissipation Factor	0.0125	0.0125	tand
Piezoelectric Longitudinal Coupling Factor, k ₃₃	0.72	0.72	
Piezoelectric Transverse Voltage Coefficient, d ₃₁ , 10 ⁻¹² m/V	-185	-185	
Piezoelectric Shear Charge Coefficient, d ₁₅ , 10 ⁻¹² m/V	560	560	
Piezoelectric Longitudinal Voltage Coefficient, g ₃₃ , 10 ⁻³ V-m/N	26.9	26.9	
Piezoelectric Planar Coupling Factor, k _p	0.62	0.62	
Piezoelectric Mechanical Q	80	80	
Piezoelectric Shear Coupling Factor, k ₁₅	0.74	0.74	
Piezoelectric Longitudinal Charge Coefficient, d ₃₃ , 10 ⁻¹² m/V	440	440	
Piezoelectric Transverse Coupling Factor, k ₃₁	0.33	0.33	

Descriptive Properties	Value	Comments
Aging Rates (%/decade)	0.15	Cf
	0.2	Ck
	-0.3	Ce
Elastic Compliance (10^{-12} m ² /N)	18.5	s11 ^E
	20.7	s33 ^E
Elastic Rigidity (10^{10} N/m ²)	15.7	c33 ^D
	6.5	c55 ^D
Frequency Constants (kHz·mm)	1260	N3
	1325	N1
	2020	Np
	2030	Nt
Piezoelectric Coupling Coefficient, kt	0.48	
Piezoelectric Voltage Coefficient, e33 (C/m ²)	16.7	

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