

CeramTec Sonox® P5 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® P5 is a highly sensitive material characterized by dielectric constants in the 1000 to 4000 range and low Q factors that are < 100. It is used in a wide range of sensor applications, as well as for actuators. P5 is specifically used for sensor technology, materials testing, and medical diagnostics and treatment. It is also used to make impact type igniters.

Order this product through the following link:

http://www.lookpolymers.com/polymer_CeramTec-Sonox-P5-Piezoceramic.php

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

Electrical Properties	Metric	English	Comments
Curie Temperature	340 °C	644 °F	Tc
Dielectric Constant	865	865	e33 S/e?
	1220	1220	e11 S/e?
	1850	1850	e11 T/e?
	1850	1850	e33 T/e?
Dissipation Factor	0.020	0.020	tand
Piezoelectric Longitudinal Coupling Factor, k33	0.73	0.73	
Piezoelectric Transverse Voltage Coefficient, d31, 10 ⁻¹² m/V	-180	-180	
Piezoelectric Shear Charge Coefficient, d15, 10 ⁻¹² m/V	550	550	
Piezoelectric Longitudinal Voltage Coefficient, g33, 10 ⁻³ V-m/N	27.5	27.5	
Piezoelectric Planar Coupling Factor, kp	0.62	0.62	
Piezoelectric Mechanical Q	90	90	
Piezoelectric Shear Coupling Factor, k15	0.72	0.72	
Piezoelectric Longitudinal Charge Coefficient, d33, 10 ⁻¹² m/V	450	450	

Electrical Properties	Metric	English	Comments
Factor, k31			
Descriptive Properties			
Aging Rates (%/decade)		Value	Comments
		0.1	Ck
		0.3	Cf
		-2.3	Ce
Capacitance (pF)		30	CT-Type 39604
		32	CT-Type 39610
		39	CT-Type 39606
Elastic Compliance (10 ⁻¹² m ² /N)		17.1	s11 ^E
		19	s33 ^E
Elastic Rigidity (10 ¹⁰ N/m ²)		14.5	c33 ^D
		5.8	c55 ^D
Frequency Constants (kHz·mm)		1310	N3
		1380	N1
		1900	Nt
		2030	Np
Piezoelectric Coupling Coefficient, kt		0.49	
Piezoelectric Voltage Coefficient, e33 (C/m ²)		16.3	

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