

CeramTec Sonox® P88 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® P88 is designed to withstand high electrical control voltages and intense mechanical (pressure) loads. It features low dielectric loss, dielectric constants between 1000 and 1600, and high Q values (between 500 and 2000). It is well suited for high-performance ultrasonic applications in the 20 kHz to several MHz range.

Order this product through the following link:

http://www.lookpolymers.com/polymer_CeramTec-Sonox-P88-Piezoceramic.php

Physical Properties	Metric	English	Comments
Density	7.83 g/cc	0.283 lb/in ³	

Electrical Properties	Metric	English	Comments
Curie Temperature	320 °C	608 °F	T _c
Dielectric Constant	630	630	e ₃₃ S/e?
	760	760	e ₁₁ S/e?
	1250	1250	e ₃₃ T/e?
	1320	1320	e ₁₁ T/e?
Dissipation Factor	0.0040	0.0040	tand
Piezoelectric Longitudinal Coupling Factor, k ₃₃	0.70	0.70	
Piezoelectric Transverse Voltage Coefficient, d ₃₁ , 10 ⁻¹² m/V	-135	-135	
Piezoelectric Shear Charge Coefficient, d ₁₅ , 10 ⁻¹² m/V	395	395	
Piezoelectric Longitudinal Voltage Coefficient, g ₃₃ , 10 ⁻³ V-m/N	29	29	
Piezoelectric Planar Coupling Factor, k _p	0.60	0.60	
Piezoelectric Mechanical Q	1600	1600	
Piezoelectric Shear Coupling Factor, k ₁₅	0.65	0.65	
Piezoelectric Longitudinal Charge Coefficient, d ₃₃ , 10 ⁻¹² m/V	325	325	

Electrical Properties	Metric	English	Comments
Electrical Piezoelectric Coupling Factor, k31	0.34	0.34	

Descriptive Properties	Value	Comments
Aging Rates (%/decade)	0.4	Cf
	-1	Ck
	-1.4	Ce
Elastic Compliance ($10^{-12} \text{ m}^2/\text{N}$)	14.3	s11^E
	19.5	s33^E
Elastic Rigidity (10^{10} N/m^2)	16.4	c33^D
	5.5	c55^D
Frequency Constants (kHz·mm)	1280	N3
	1490	N1
	2050	Nt
	2200	Np
Piezoelectric Coupling Coefficient, kt	0.46	
Piezoelectric Voltage Coefficient, e33 (C/m ²)	13.9	

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