

CeramTec Sonox® P8 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® P8 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. P8 is specifically used for ultrasonic welding and drilling.

Order this product through the following link:

http://www.lookpolymers.com/polymer_CeramTec-Sonox-P8-Piezoceramic.php

Physical Properties	Metric	English	Comments
Density	7.70 g/cc	0.278 lb/in ³	

Electrical Properties	Metric	English	Comments
Curie Temperature	305 °C	581 °F	T _c
Dielectric Constant	540	540	e33 S/e?
	800	800	e11 S/e?
	1000	1000	e33 T/e?
	1250	1250	e11 T/e?
Dissipation Factor	0.0020	0.0020	tand
Piezoelectric Longitudinal Coupling Factor, k ₃₃	0.68	0.68	
Piezoelectric Transverse Voltage Coefficient, d ₃₁ , 10 ⁻¹² m/V	-95.0	-95.0	
Piezoelectric Shear Charge Coefficient, d ₁₅ , 10 ⁻¹² m/V	380	380	
Piezoelectric Longitudinal Voltage Coefficient, g ₃₃ , 10 ⁻³ V-m/N	27.1	27.1	
Piezoelectric Planar Coupling Factor, k _p	0.55	0.55	
Piezoelectric Mechanical Q	1000	1000	
Piezoelectric Shear Coupling Factor, k ₁₅	0.60	0.60	
Piezoelectric Longitudinal Charge Coefficient, d ₃₃ , 10 ⁻¹² m/V	240	240	

Electrical Properties	Metric	English	Comments
Electrical Piezoelectric Coupling Factor, k31	U.S.U	U.S.U	

Descriptive Properties	Value	Comments
Aging Rates (%/decade)	1	Cf
	-1.8	Ce
	-2.2	Ck
Elastic Compliance (10^-12 m²/N)	11.4	s11^E
	13.7	s33^E
Elastic Rigidity (10^10 N/m²)	16.2	c33^D
Frequency Constants (kHz·mm)	1490	N3
	1600	N1
	2020	Nt
	2280	Np
Piezoelectric Coupling Coefficient, kt	0.48	
Piezoelectric Voltage Coefficient, e33 (C/m²)	13.3	

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