



Ferroperm™ Piezoelectric ceramics

Pz189 (Navy III) Hard relaxor type PZT

A very hard PZT with low ageing rates and low loss

Pz189 is an dedicated high-power hard PZT material with good coupling factors, high Curie temperature, high mechanical quality factor, low dielectric loss. Because of the crystallographic structure in Pz189, it is able to withstand higher mechanical stresses than Pz26. This makes it suitable for applications where output power must be maximised.

Repeatable performance

The main focus through our entire production process is to provide materials and components with the highest possible reproducibility of properties and parameters and to obtain the lowest aging rates in the industry.

Our materials have a variation of $\pm 5\%$ for all parameters. This reduces the requirements for impedance matching, frequency tuning and dimensioning of the housing meaning fewer rejects and lower costs.

Customised solutions

We have more than 60 years of experience in the production of advanced piezoelectric ceramics. Our team has extensive expertise in customising designs to match the customer's needs.

Please contact us to discuss your requirements in further detail.

Key benefits

- Lowest batch to batch variation in the industry
- Stable material with consistent performance
- Customised or standard designs

Key features

- High Curie temperature
- Low dielectric loss
- Good coupling factors

Applications

- High-power underwater transducers
- HIFU medical

Contact

CTS Ferroperm

Porthusvej 4, DK-3490
Kvistgaard
Denmark
Tel: +45 49 12 71 00

e-mail: pz@ctscorp.com

www.ferropermpiezoceramics.com



Ferroperm™ Piezoelectric ceramics

Pz189 (Navy III) Hard relaxor type PZT

Material properties

Electrical	Symbol	Pz189
Relative dielectric permittivity at 1 kHz	K_{33}^T	1150
Dielectric dissipation factor at 1 kHz	$\tan \delta$	5×10^3
Curie temperature	T_c	320 °C
Max. Recommended working range	<	220 °C
Electromechanical		
Coupling factors	k_p	0.51
	k_t	0.44
Piezoelectric charge coefficient	d_{33}	240 pC/N
Mechanical		
Mechanical Quality Factor	$Q_{m,t}^E$	>1000
Density	ρ	7.70 g/cm ³

Note: Due to continuous process improvement, specifications are subject to change without notice.

Please be aware that extreme dimensions and geometries can lead to exaggeration in tolerances in all materials.

P189 and P194 are a part of a full technology transfer of the Quartz & Selice programme from Saint-Gobain Quartz in 2010