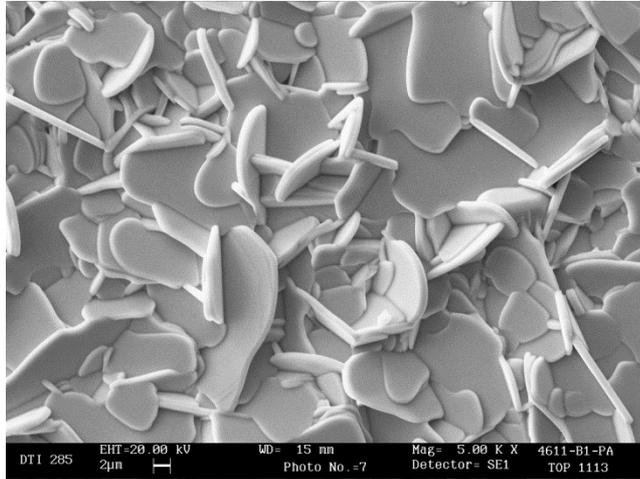




Ferroperm™ Piezoelectric

## Pz46 High temperature PZT



Microstructure of Pz46 at a magnification of 5000 times

### Bismuth Titanate for operation above 500°C

Pz46 is a material with very high Curie temperature and a working temperature of up to 550 °C. It has a low dielectric constant, low dielectric loss and stable properties up to very high temperatures.

### 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

### Applications

- High temperature accelerometers
- High temperature flow meters
- High temperature pressure sensors

### Contact

#### CTS Ferroperm

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

e-mail: [pz@ctscorp.com](mailto:pz@ctscorp.com)

[www.ferropermpiezoceramics.com](http://www.ferropermpiezoceramics.com)

## CTS Ferroperm

Our product competencies and services:  
Piezoelectric ceramics | Multilayer | Thick-film | InSensor® | PiezoPaint™

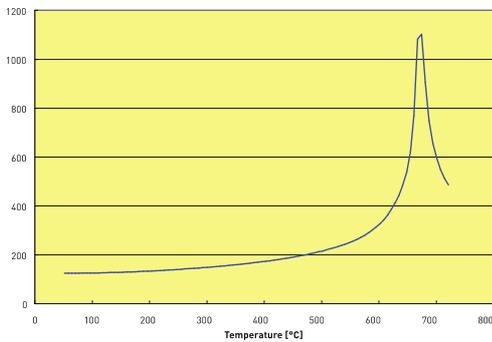


# Ferroperm™ Piezoelectric Pz46 High temperature PZT

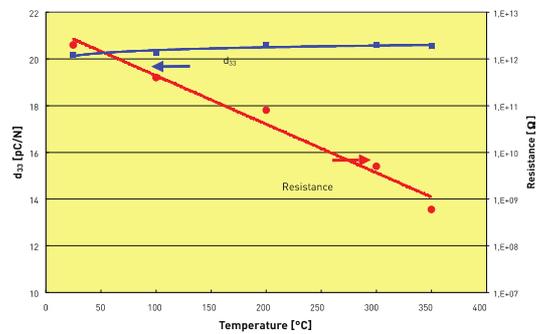
## Material properties

Electrical	Symbol	Pz28
Relative dielectric permittivity at 1 kHz	$K_{33}^T$	220
Dielectric dissipation factor at 1 kHz	$\tan\delta$	$4 \times 10^{-3}$
Curie temperature	$T_C$	650 °C
Recommended working range	>	500-550 °C
Electromechanical		
Coupling factors	$k_p$	0.03
	$k_t$	0.20
Piezoelectric charge coefficient	$d_{33}$	18 pC/N
Mechanical		
Mechanical Quality Factor	$Q_{m,t}^E$	>2000
Density	$\rho$	6.55 g/cm <sup>3</sup>

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.



Free dielectric constant for Pz46 as a function of temperature. The Curie point is above 650°C



Piezoelectric charge constant and an example of the resistance in a standard disc as a function of temperature. Very low temperature dependencies can be observed.

## CTS Ferroperm

Our product competencies and services:  
 Piezoelectric ceramics | Multilayer | Thick-film | InSensor® | PiezoPaint™