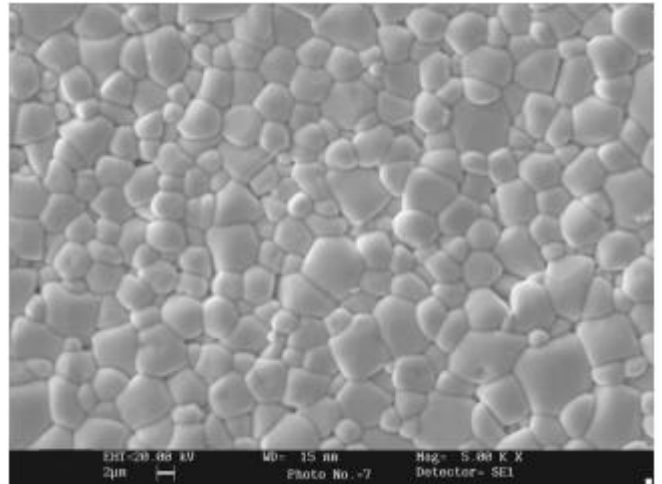


**DATA SHEET**

## Soft PZT

### Type Pz23



Microstructure of Pz23 at a magnification of 5000 times

#### 01 Description

Pz23 is a soft PZT material characterized by very low temperature coefficients and low ageing rates as well as a high Curie temperature and low mechanical quality factor. This material is developed for sensor applications requiring very good stability over decades of operation.

##### 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.

#### 02 Key features and benefits

- Lowest batch to batch variation in the industry
- Stable material with consistent performance
- Customised or standard designs
- Low temperature coefficients
- Low ageing rates
- High Curie temperature
- Low mechanical quality factor

#### 03 Applications

- Shear-type accelerometers
- Compression mode accelerometers
- Doppler flow meters

#### 04 Contact

CTS | Ferroperm

Tel: +45 49 12 71 00

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

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

## DATA SHEET

# Soft relaxor type PZT, Type Pz23

## 05 Material properties

### Electrical

Relative dielectric permittivity at 1 kHz  
Dielectric dissipation factor at 1 kHz  
Curie temperature  
Recommended working range

### Symbol

$K_{33T}$   
 $\tan\delta$   
 $T_C >$   
<

### Pz23

1500  
 $15 \times 10^{-3}$   
350 °C  
250 °C

### Electromechanical

Coupling factors

$K_p$

0.51

$K_t$

0.43

$K_{33}$

0.65

Piezoelectric charge coefficient

$d_{33}$

330 pC/N

$d_{15}$

420 pC/N

### Mechanical

Mechanical Quality Factor  
Density

$Q_{m,t}$

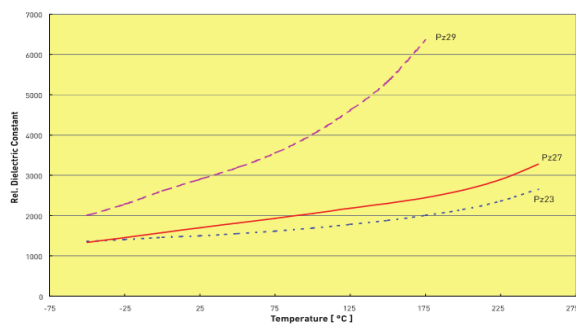
100

$\rho$

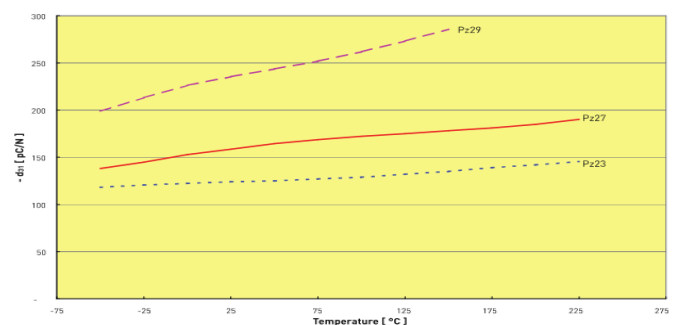
7.70 g/cm<sup>3</sup>

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.

## 06 Technical performance



Temperature dependence of the free dielectric constant of Pz23 in comparison with other soft PZT materials from Ferroperm.



Temperature dependence of the piezoelectric charge coefficient,  $d_{31}$ , for Pz23 in comparison with other soft PZT materials from Ferroperm.