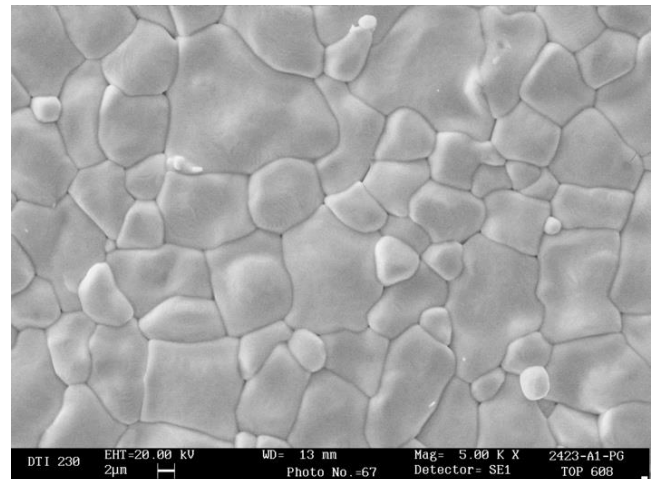


DATA SHEET

Very hard PZT

Type Pz24



Microstructure of Pz24 at a magnification of 5000 times

01 Description

Pz24 is a hard PZT material with very low dielectric constant, a very low dielectric loss, and high piezoelectric voltage constant. The low dielectric constant of this material can simplify the driving electronics for transducers. It is therefore for example a more sensitive alternative to Lead Titanate for single element medical transducers. Because of this high voltage constant, Pz24 has also gained popularity in accelerometer special applications.

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
- Very low dielectric constant
- Very low dielectric loss
- High piezoelectric voltage constant

03 Applications

- Single element medical transducers
- Shear-type accelerometers
- Compression mode accelerometers
- High power transducers

04 Contact

Meggitt A/S

Tel: +45 49 12 71 00

E-mail: pz@meggitt.com

www.meggittferroperm.com

DATA SHEET

Hard relaxor type PZT, Type Pz24

05 Material properties

Electrical

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

Electromechanical

Coupling factors

Piezoelectric charge coefficient

Mechanical

Mechanical Quality Factor
Density

Symbol

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

Pz24

400
 2×10^{-3}
330 °C
230 °C

k_p

0.50

k_t

0.52

d_{33}

190 pC/N

g_{33}

54×10^{-3} Vm/N

$Q_{m,p}$

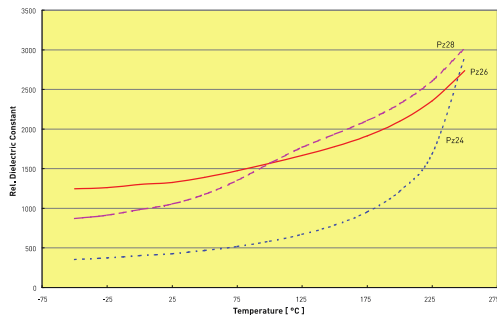
>1000

ρ

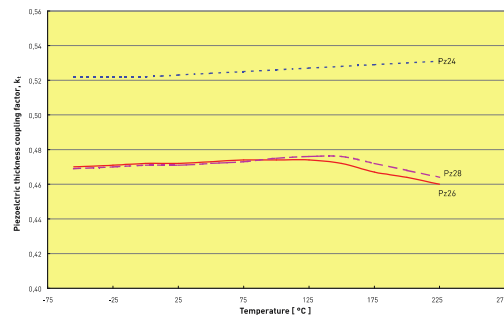
7.70 g/cm³

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 Pz24 in comparison with other hard PZT materials from Ferroperm.



Temperature dependence of the piezoelectric thickness coupling factor for Pz24 in comparison with other hard PZT materials from Ferroperm.