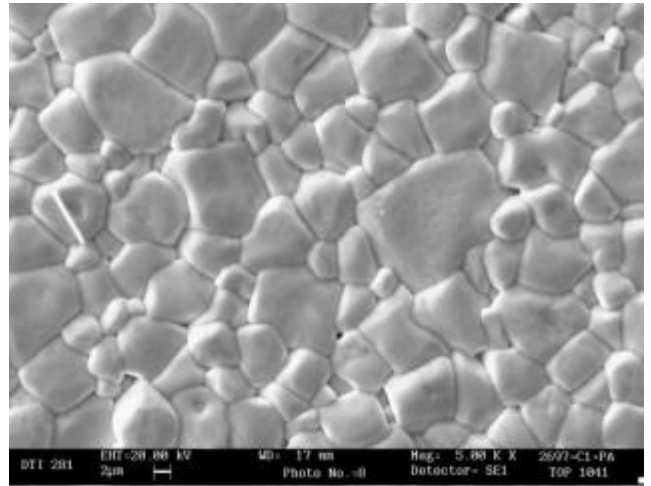


DATA SHEET

Hard PZT -low ageing rates

Type Pz26 (Navy I)



Microstructure of Pz26 (Navy I) at a magnification of 5000 times

01 Description

Pz26 is an all-round hard PZT material with good coupling factors, high Curie temperature, high mechanical quality factor, low dielectric loss and very good stability over time. Pz26 can be used as a direct replacement for all other Navy I materials. Benefits include strongly improved ageing rates, and extremely stable performance from orders ranging over several years

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 ageing 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
- High Curie temperature
- Low dielectric loss
- Good stability over time

03 Applications

- High-power underwater transducers
- Medical therapeutic transducers
- Dental cleaners
- Hydrophones
- Level sensors

04 Contact

CTS | Ferroperm

Tel: +45 49 12 71 00

E-mail: pz@ctscorp.com

www.ferropermpiezoceramics.com

DATA SHEET

Hard relaxor type PZT, Type Pz26 (Navy I)

05 Material properties

Electrical

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

Symbol

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

Pz26

1300
 3×10^{-3}
330 °C
230 °C

Electromechanical

Coupling factors

k_p
 k_t

0.56
0.47

Piezoelectric charge coefficient

d_{33}

300 pC/N

Mechanical

Mechanical Quality Factor

$Q_{m,t}^E$

>1000

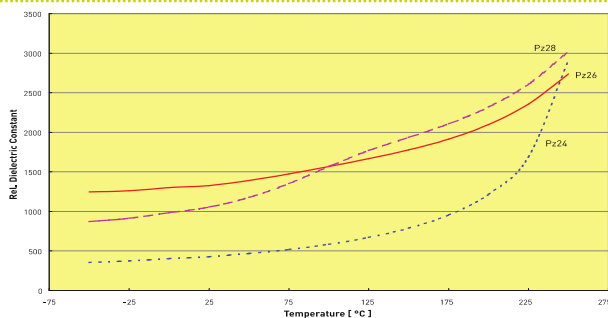
Density

ρ

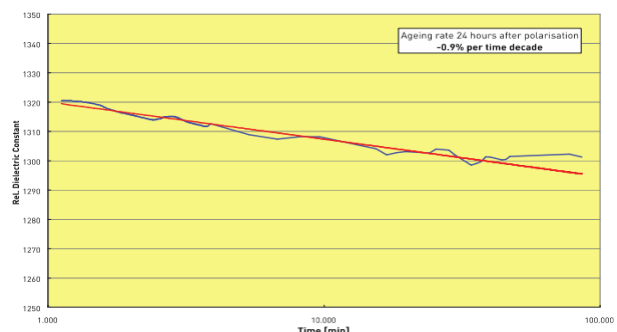
7.70 g/cm³

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.

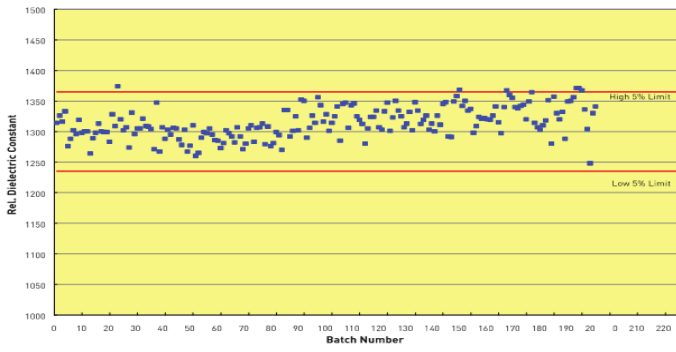
06 Technical performance



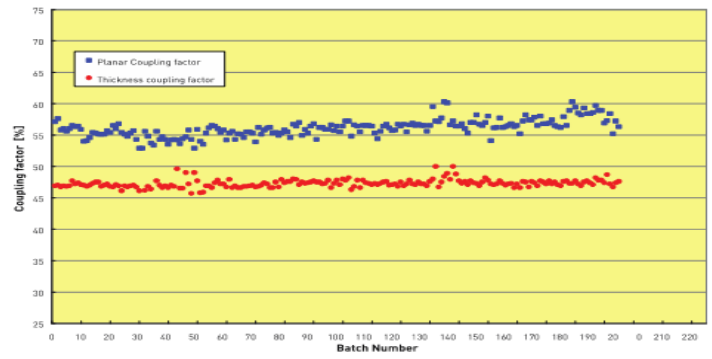
Temperature dependence of the free dielectric constant of Pz26 in comparison with other hard PZT materials from Ferroperm.



Ageing characteristics for the free dielectric constant of Pz26. After an initial burn-in period of 24 hours after poling, the ageing is less than 1% per time decade; Significantly lower than any other comparable material..



Free dielectric constant of Pz26 standard discs produced for approval of every new batch. Each point represents a new batch of 20 – 150 kg. The illustrated time-period is from 1996 to Nov 2001. Extremely small variations over time is observed, and excellent stability can therefore be obtained



Piezoelectric coupling constants for Pz26 standard discs produced for approval of every new batch. Each point represents a new batch of 20 – 150 kg. The illustrated time-period is from 1996 to Nov 2001. Extremely small variations over time are observed, and excellent stability can therefore be obtained.