



## TF2100

### PZT thick film based on Ferroperm Pz26

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.

The material is compatible with thick film technology and the properties are almost fully conserved in the change from bulk to thick film. The change in properties is mainly attributed to increased porosity in the thick film compared to the bulk material.

Typical applications are:

- High frequency medical imaging
- Miniaturised accelerometers
- Integrated miniaturised phased array ultrasound scanners

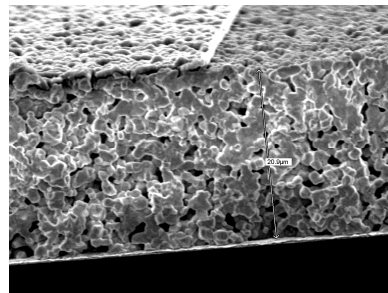


FIG. 1 SEM picture of TF2100

#### Main characteristics of TF2100

	Symbol	Unit	TF2100
<b>Electrical properties</b>			
Relative dielectric constant at 1 kHz	$K_{33}^T$		520
Dielectric dissipation factor at 1 kHz	$\tan \delta$	$10^{-3}$	8
<b>Electromechanical properties</b>			
Coupling coefficients	$k_p$		29
	$k_t$		49
Piezoelectric charge coefficients	$d_{33}$	pC/N	200
	$d_{31}$	pC/N	-50
Piezoelectric voltage coefficients	$g_{33}$	$10^{-3}$ Vm/N	50
	$g_{31}$		-10
<b>Mechanical properties</b>			
Acoustic impedance	$Z_a$	MRayl	~15
Mechanical Quality Factor	$Q_{m,t}$		100