

Piezoceramic transducers



Piezoceramic materials offer a good compromise between output sensitivity and bandwidth. Transducers made from a piezoceramic tend to require much lower drive signal voltages than PVDF, but are typically limited to bandwidths below 65% of centre frequency. When higher transmit sensitivity is required, lower damped backings can be applied to the ceramic. As damping is reduced, output sensitivity increases, but bandwidth decreases.

Precision Acoustics Ltd supplies a range of Piezoceramic transducers, all of which are designed for immersion use. Piezoceramic transducers can be made as unfocussed devices or with a spherical (point) focus. Please consult us to confirm current stock levels of focussed ceramic.

Piezoceramic transducers are useful in a wide range of applications: imaging (medical or NDT), therapeutic ultrasound, materials characterisation, fundamental metrology and calibration. All Precision Acoustics Ltd transducers are designed specifically for each customer's applications.

FEATURES OF PIEZOCERAMIC TRANSDUCERS FROM PRECISION ACOUSTICS LTD:

- Centre frequency 0.5 MHz to 10 MHz.
- -6 dB bandwidth (10% to 65% of centre frequency, depending on design)
- Active element diameter 5mm to 60 mm
- Output impedance $50\ \Omega$ ($\pm 10\%$)
- Output power up to 120 W (depending on design)
- Designed for immersion use.
- Focal length (if focussed) 15 mm to 100 mm
- A 1.5 metre co-axial cable with BNC connector is supplied as standard. Other options (e.g. UHF, SMA, MCX, LEMO etc) are available on request.
- Each transducer receives an in-house calibration including frequency response transverse beam profiles (and for focussed probes, axial profile) (IEC, 2013)

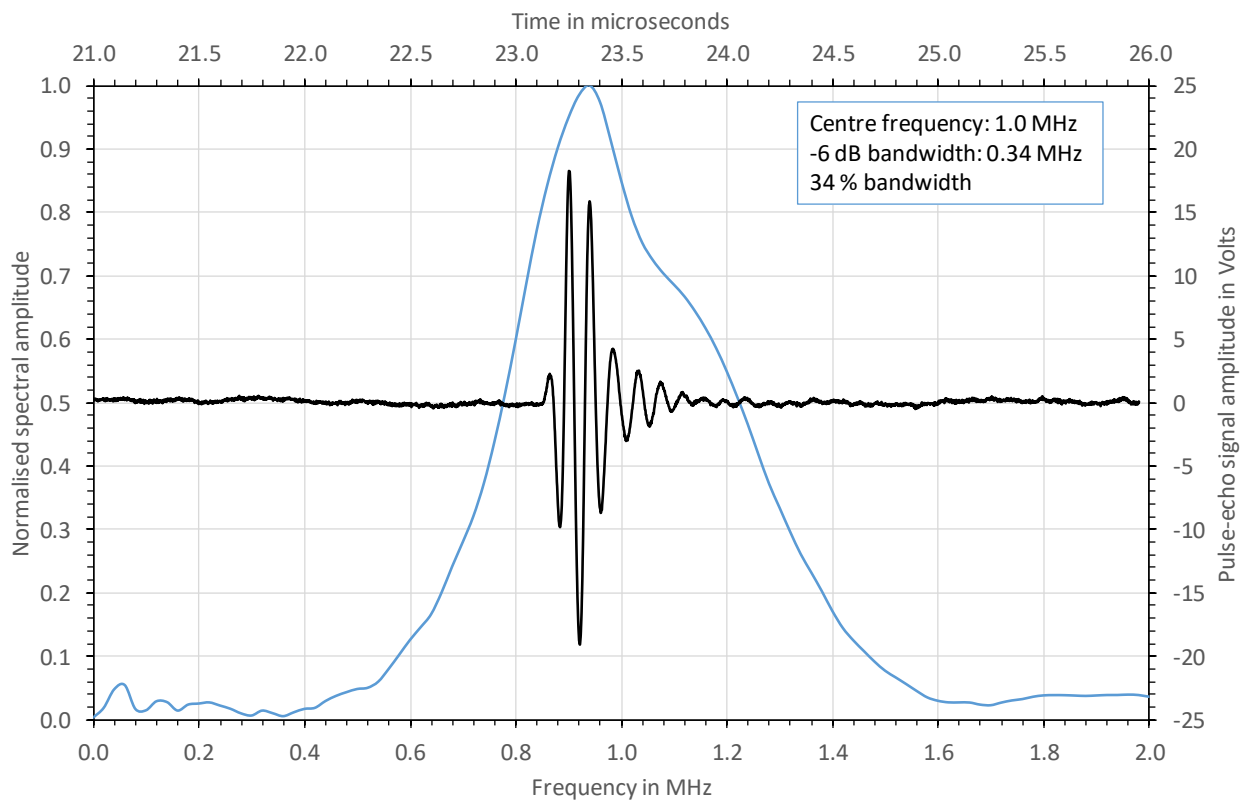


Figure 1 – Typical temporal and frequency responses for a piezoceramic transducer



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