

Title (en)
PIEZOELECTRIC AIR-ULTRASOUND TRANSDUCER WITH BROADBAND CHARACTERISTICS

Publication
EP 0154706 B1 19900321 (DE)

Application
EP 84115390 A 19841213

Priority
DE 3409789 A 19840316

Abstract (en)
[origin: US4677337A] A piezoelectric ultrasonic transducer for radiating ultrasonic energy in the medium of air has a number of piezoceramic ultrasonic radiators disposed in registry within a dimensionally stable carrier block which has an intrinsic acoustic impedance which is lower by a factor of at least eight than that of the piezoceramic material and which has a high mechanical attenuation $1/Q_m$ greater than approximately 0.05. The carrier block is yieldable at at least one closed face thereof for emission and/or reception of ultrasonic energy. The piezoelectric transducer elements may be divided into a number of side-by-side elements which may be individually energized, or may have electrodes connected in series for energizing the individual transducer elements in common. The combined operation of the ultrasonic transducer elements within the carrier block results in an ultrasonic transducer having broadband characteristics matched for ultrasonic transmission in the medium of air of short ultrasonic waveforms and for receiving ultrasonic energy for near-distance detection.

IPC 1-7
G10K 11/02; H04R 17/10

IPC 8 full level
H04R 1/06 (2006.01); **G10K 9/122** (2006.01); **G10K 11/02** (2006.01); **H04R 1/20** (2006.01); **H04R 17/00** (2006.01); **H04R 17/10** (2006.01)

CPC (source: EP US)
G10K 9/122 (2013.01 - EP US); **G10K 11/02** (2013.01 - EP US)

Cited by
EP0451306A1; US5457353A; EP0181506A3; US5254900A; EP0292014A3; US4914565A; WO9100153A1

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