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ABSTRACT

An acoustic wave device including: a POI structure including: a material layer where a high acoustic velocity layer and a low acoustic velocity layer are alternate, a substrate is a lowermost high acoustic velocity layer; a first piezoelectric layer located above the material layer, wherein a layer adjacent to the first piezoelectric layer is referred to as a surface low acoustic velocity layer; wherein an acoustic velocity of a bulk wave propagated in the high acoustic velocity layer and the low high acoustic velocity layer is higher than and lower than an acoustic velocity of a bulk wave of the first piezoelectric layer, respectively. The POI structure includes at least two regions, a first device having a resonance of a first vibration mode is manufactured in the first region, and a second device having a resonance of a second vibration mode is manufactured in a second region.

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