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Abstract

A surface acoustic wave device 1 has a substrate 2 made of quartz, a pair of inter digital transducer-shape electrode 3 made of an aluminum layer, an electrode pad 4, and a pair of lattice-shaped reflectors 5 made of the same material as the electrode 3. The crystal structure of the aluminum layer composing the electrode 3 is a twin crystal structure, where crystal grains of the (-1 1 1) plane and the (0 0 2) plane and crystal grains of the (1 -1 -1) plane and the (0 0 -2) plane are in a twin crystal relationship with the (-1 1 -1) plane and the (1 -1 1) plane of aluminum as the twin boundaries. Also, the {1 1 1} plane of the aluminum layer is oriented to an 8° inclination relative to the {0 1 0} plane of quartz composing the substrate 2.

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