

**TITLE: ELASTIC SURFACE WAVE DEVICE HAVING ELECTRODES
EMBEDDED IN A PIEZOELECTRIC LAYER, AND DESIGN AND
PRODUCTION THEREOF**

5

Abstract

The invention relates to an elastic surface wave device (100) comprising a piezoelectric layer (120), electrodes (150A, 150B) embedded in the piezoelectric layer, and a substrate (130) carrying the piezoelectric layer and
10 the electrodes, the substrate satisfying both of the following conditions: an attenuation of an elastic mode having an electrode in the piezoelectric layer is less than 0.1 dB/ λ ; and a speed ratio between a volumetric elastic mode for cutting the substrate and a fundamental elastic mode for cutting the piezoelectric layer is smaller than a predetermined speed ratio having a value
15 equal to 1, the substrate being chosen from among gallium arsenide and a glass having a Young's modulus of between 60 GPa and 180 GPa, a Poisson's ratio of between 0.15 and 0.35, and a density of between 2000 kg/m³ and 6000 kg/m³.

20 Fig. 2