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(54) **METHOD OF MAKING A MULTILAYER PIEZOELECTRIC SUBSTRATE FOR ACOUSTIC WAVE DEVICE**

(71) Applicant: **Skyworks Solutions, Inc.**, Irvine, CA (US)

(72) Inventors: **Rei Goto**, Osaka-Shi (JP); **Keiichi Maki**, Suita-Shi (JP); **Gong Bin Tang**, Moriguchi-Shi (JP)

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(57) **ABSTRACT**

A method of manufacturing a surface acoustic wave resonator includes forming or providing a support substrate layer, forming or providing piezoelectric layer of lithium niobate over the support substrate layer, and forming or providing an interdigital transducer electrode including a plurality of fingers over the piezoelectric layer. The piezoelectric layer formed or provided having a cut angle (e.g., the piezoelectric angle is cut so as to have a crystal orientation) that allows the surface acoustic wave device to operate as a longitudinally leaky surface acoustic wave device that confines the acoustic wave energy within the piezoelectric substrate and that has less propagation attenuation and a higher electromechanical coupling coefficient k^2.