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Plesski et al.(10) **Pub. No.: US 2022/0407498 A1**(43) **Pub. Date: Dec. 22, 2022**(54) **FILM BULK ACOUSTIC RESONATORS IN THIN LN-LT LAYERS****Publication Classification**(51) **Int. Cl.****H03H 9/205** (2006.01)**H03H 9/56** (2006.01)**H03H 9/02** (2006.01)**H03H 9/13** (2006.01)(52) **U.S. Cl.**CPC **H03H 9/205** (2013.01); **H03H 9/564** (2013.01); **H03H 9/0211** (2013.01); **H03H 9/131** (2013.01); **H03H 9/02015** (2013.01)(21) Appl. No.: **17/515,333**(22) Filed: **Oct. 29, 2021****Related U.S. Application Data**

- (63) Continuation of application No. 17/125,779, filed on Dec. 17, 2020, now Pat. No. 11,251,775, which is a continuation of application No. 17/090,599, filed on Nov. 5, 2020, now Pat. No. 10,944,380, which is a continuation of application No. 16/932,719, filed on Jul. 18, 2020, now Pat. No. 10,862,454.
- (60) Provisional application No. 62/875,855, filed on Jul. 18, 2019, provisional application No. 62/958,851, filed on Jan. 9, 2020.

(57) **ABSTRACT**

Acoustic resonator devices, filter devices, and methods of fabrication. A resonator device includes a piezoelectric plate having a front surface and a back surface opposite the front surface, a back-side conductor pattern formed on the back surface, and a first front-side conductor pattern and a second front-side conductor pattern formed on respective portions of the front surface opposite the back-side conductor pattern. A portion of the piezoelectric plate between the first front-side conductor pattern and the back-side conductor pattern forms a first resonator and a portion of the piezoelectric plate between the second front-side conductor pattern and the back-side conductor pattern forms a second resonator.

