



US 20220393662A1

(19) **United States**(12) **Patent Application Publication**
WANG(10) **Pub. No.: US 2022/0393662 A1**(43) **Pub. Date: Dec. 8, 2022**(54) **BULK ACOUSTIC WAVE FILTER HAVING
RELEASE HOLE AND FABRICATING
METHOD OF THE SAME***H03H 9/54* (2006.01)*H03H 9/13* (2006.01)(52) **U.S. Cl.**CPC *H03H 9/172* (2013.01); *H03H 3/02*
(2013.01); *H03H 9/54* (2013.01); *H03H 9/131*
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Jun. 21, 2022.**Publication Classification**(51) **Int. Cl.***H03H 9/17* (2006.01)*H03H 3/02* (2006.01)

(57)

ABSTRACT

A bulk acoustic wave resonator includes a substrate, a support layer disposed on the substrate, the support layer including a cavity having a polygon shape with more than three sides in a plane crossing a first direction from the substrate to the support layer, a piezoelectric layer disposed on the support layer, a bottom electrode disposed below the piezoelectric layer, partially overlapping the cavity, and extending across a first side of the cavity, and a top electrode disposed above the piezoelectric layer, partially overlapping the cavity, and extending across a second side of the cavity. The bulk acoustic wave resonator further includes at least one release hole formed in the piezoelectric layer and overlapping a portion of the cavity.

