

(12) United States Patent

Nakazawa et al.

(54) SURFACE ACOUSTIC WAVE DEVICE AND FILTER WITH ADDITIONAL COVERING **FILMS**

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(*) Notice: Subject to any disclaimer, the term of this

patent is extended or adjusted under 35

U.S.C. 154(b) by 143 days.

Appl. No.: 14/572,246

Filed: Dec. 16, 2014 (22)

(65)**Prior Publication Data**

> US 2015/0180451 A1 Jun. 25, 2015

(30)Foreign Application Priority Data

Dec. 19, 2013 (JP) 2013-262903

(51) Int. Cl. H03H 9/64 H03H 9/02

(2006.01)(2006.01)

(Continued)

(52) U.S. Cl.

CPC H03H 9/6489 (2013.01); H03H 3/08 (2013.01); H03H 9/02881 (2013.01);

(Continued)

US 9,667,226 B2 (10) Patent No.:

(45) **Date of Patent:** May 30, 2017

(58) Field of Classification Search

CPC .. H03H 9/02858; H03H 9/02881; H03H 9/25; H03H 9/14538; H03H 9/14541;

(Continued)

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ABSTRACT

A surface acoustic wave device includes: a pair of combtype electrodes that are provided on a piezoelectric substrate and include electrode fingers and dummy electrode fingers, the electrode fingers of one of the pair of comb-type electrodes facing the dummy electrode fingers of the other comb-type electrode; and additional films that are provided to cover gaps between tip ends of the electrode fingers and tip ends of the dummy electrode fingers and to overlap with at least one of first through third groups in which the first and second groups respectively include the electrode fingers and the dummy electrode fingers located at opposite sides of the gaps in a first direction in which the electrode fingers extend, and the third group includes the electrode fingers located at sides of the gaps in a second direction that crosses the first direction.

17 Claims, 24 Drawing Sheets

