TITLE OF INVENTION: FILM BULK ACOUSTIC WAVE RESONATOR AND PREPARATION METHOD THEREOF

Abstract

The present disclosure provides a film bulk acoustic wave resonator and a preparation method thereof, and relates to the technical field of semiconductors. The film bulk acoustic wave resonator includes a substrate and a bottom electrode, a piezoelectric layer and a top electrode which are located on an upper surface of the substrate, the bottom electrode is provided with a first arched part so as to form a first cavity between the first arched part and the substrate; and a first reflection cavity is formed between the bottom electrode and the piezoelectric layer and located in a slope of the first arched part, the bottom electrode is provided with the first arched part and the first reflection cavity may be located in an oblique plane of the slope of the first arched part, and thus, when the first reflection cavity reflects, by the slope, transverse acoustic waves, the transverse acoustic waves are reflected many times, thereby dissipating energy of the transverse acoustic waves, so as to further reduce a transverse parasitic mode, and improve a quality factor of the film bulk acoustic wave resonator.

Fig. 13