

ABSTRACT

PIEZOELECTRIC THIN FILM RESONATOR

A piezoelectric thin film resonator includes: a substrate; a piezoelectric film that is located on the substrate and includes a first film made of an aluminum nitride film containing an additive element and second films located on an upper surface and a lower surface of the first film and made of an aluminum nitride film containing the additive element at a concentration lower than that of the first film; and a lower electrode and an upper electrode that are located to sandwich the piezoelectric film.

FIG. 1B