

Abstract

SEMICONDUCTOR DEVICE HAVING BALANCED BAND-PASS FILTER IMPLEMENTED WITH LC RESONATORS

A band-pass filter has a plurality of frequency band channels each including a first inductor having a first terminal coupled to a first balanced port and a second terminal coupled to a second balanced port. A first capacitor is coupled between the first and second terminals of the first inductor. A second inductor has a first terminal coupled to a first unbalanced port and a second terminal coupled to a second unbalanced port. The second inductor is disposed within a first distance of the first inductor to induce magnetic coupling. A second capacitor is coupled between the first and second terminals of the second inductor. A third inductor is disposed within a second distance of the first inductor and within a third distance of the second inductor to induce magnetic coupling. A second capacitor is coupled between first and second terminals of the third inductor. (Fig. 7)