

Abstract

Resonant Structure for Controlling Harmonic Distances, and Dielectric

The present application provides a dielectric resonant structure for controlling harmonic distances, including a cavity, a support frame, a dielectric resonator and a cover plate, wherein the cavity is composed of a sealed space, and one surface of the cavity is a cover plate surface; the dielectric resonator is composed of a dielectric; the dielectric resonator is installed in the cavity; and the support frame is installed at any position between the dielectric resonator and an inner wall of the cavity, matches any shape of the dielectric resonator and the cavity, and is connected to, fixed with, and supported the dielectric resonator. The dielectric resonator is partially provided with a blind slot, a through slot, a blind hole or a through hole, or is provided with a protrusion on its surface, so as to change the span of frequency between a fundamental mode and the span of frequency high-order mode or between the high-order mode and a higher-order mode. When the set materials and dimensions of the cavity, the dielectric resonator and the support frame remain unchanged, most filters require the frequency of the high-order mode to be as far away from a passband as possible, so as to reduce the interference to a main passband. The dielectric resonator of the present application is capable of conveniently controlling harmonic distances of the filter and flexibly changing the attenuation performance outside the passband.

Figure 12