Abstracts

Channel Dropping Filter for Millimeter-Wave Integrated Circuits

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The dielectric waveguide structure finds various applications in integrated circuits for the millimeter-optical-frequency range. Many passive and active devices, using dielectric waveguide, have been developed. From the viewpoint of Iow-loss property, the dielectric rectangular waveguide seems to be more suitable for integrated circuits. This paper describes the design method and experimental results for channel dropping filter using dielectric rectangular waveguide. Some experimental investigations of the dielectric rectangular waveguide properties are also presented. The channel dropping loss of the filter is 1.5 dB at a channel center frequency of 52 GHz with a 180-MHz 3-dB bandwidth. Experimental results agree fairly well with the theoretical calculations.

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