Abstracts

Harmonic rejection filters for the dominant and the higher waveguide modes based on the slotted strips

A. Kirilenko and L. Mospan. "Harmonic rejection filters for the dominant and the higher waveguide modes based on the slotted strips." 2002 MTT-S International Microwave Symposium Digest 02.1 (2002 Vol. I [MWSYM]): 373-376 vol.1.

The simplest notch-type filters to reject the dominant and higher modes in the multimode frequency band are proposed using resonant properties of the iris formed by slotted capacitive strips. Various configurations of the slotted strip iris are considered. The simplest one is a centered capacitive strip in a rectangular waveguide with centered single slot that is able to reject the dominant mode up to the TE30-cutoff. The second one is the double-slot capacitive iris that has the ability to reject at the same frequency both the dominant mode and the TE20-mode. The third configuration is based on two double-slot capacitive strips placed close to the upper and lower walls of the waveguide and provides rejection of the TE10, TE20 and TM11-modes simultaneously. Configurations based on slotted inductive strips to reject TE01 and TM11 modes are also considered. These notch filters are perfectly matched in the operating single-mode range, can be easily fabricated and implemented.

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