Abstracts

A Quasioptical Circuit Technology for Shortmillimeter-Wavelength Multiplexer

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This paper describes constructions and electrical performances of shortmillimeter-wavelength quasioptical passive circuits using the Gaussian beam mode, i.e., beam mode launchers, polarization-independent beam splitters, circular polarization duplexers, filters, diplexers, and multiplexer. The diplexers were devised to handle wide bandwidths with fairly low loss and to have a sharp cutoff response so that they can be applied to telecommunications systems. Experiments on these components including frequency multiplexers and antenna feed systems were carried out in the 100-GHz band. It is shown that quasioptical circuits are particular useful in reducing insertion loss of multiplexing systems for shortmillimeter wavelengths.

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