Abstracts

An Optically Controlled Modulator Using a Metal Strip Grating on a Silicon Plate for Millimeter and Submillimeter Wavelengths

J. Bae, H. Mazaki, T. Fujii and K. Mizuno. "An Optically Controlled Modulator Using a Metal Strip Grating on a Silicon Plate for Millimeter and Submillimeter Wavelengths." 1996 MTT-S International Microwave Symposium Digest 96.3 (1996 Vol. III [MWSYM]): 1239-1242.

An optically controlled modulator using a metal strip grating on a silicon plate with an external electric field applied between the strips, has been developed as a quasi-optical high-speed modulator for millimeter and submillimeter wavelengths. The experimental results obtained at 52 GHz to 60 GHz show that the maximum modulation frequency in the inductive metal strip modulator can be increased from 4 kHz to 37 kHz by applying only 13 volts (E ~ 150 V/cm) to the strips. A higher modulation frequenc is available for the metal strip modulator with a higher external electric field.

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