Abstracts

Metal Mesh Couplers Using Optical Tunneling Effect at Millimeter and Submillimeter Wavelengths

J. Bae, J.-C. Chiao, K. Mizuno and D.B. Rutledge. "Metal Mesh Couplers Using Optical Tunneling Effect at Millimeter and Submillimeter Wavelengths." 1994 MTT-S International Microwave Symposium Digest 94.2 (1994 Vol. II [MWSYM]): 787-790.

A new metal mesh coupler that makes use of a tunneling effect of evanescent waves between a metal mesh and a dielectric plate, has been proposed as a quasi-optical component for millimeter and submillimeter wavelengths. Theoretical calculation and experimental measurement performed from 40 GHz to 60 GHz show that the transmittance of the coupler can be changed more than 50 % for the variation of a spacing less than 0.18 mm between a capacitive mesh and a silicon plate at around 57 GHz.

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