Abstracts

Electric-field observation of pico-pulse propagation on right-angle bends by miniature photoconductive near-field probe

Jongjoo Lee and Joungho Kim. "Electric-field observation of pico-pulse propagation on right-angle bends by miniature photoconductive near-field probe." 2002 MTT-S International Microwave Symposium Digest 02.3 (2002 Vol. III [MWSYM]): 1509-1512 vol.3.

The picosecond electric-pulse propagation characteristics on microstrip and coplanar waveguide right-angle bends have been successfully measured by mapping the time-dependent spatial electric near-field distributions. The measurement was performed using a 2-dimensional photoconductive (PC) electric near-field mapping system incorporating a new miniature PC electric-field probe, which was implemented on an optical fiber by coupling a PC switch on 1-/spl mu/m-thick LT-GaAs epilayer to the end-facet of a 45/spl deg/ bevel-edge optical fiber. The probe could measure the three orthogonal picosecond electric-field components separately with minimal loading effects. The measured field-images showed quite remarkable transient picosecond electric-pulse propagation phenomena at the right-angle bends, which cannot be measured using conventional test instruments.

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