Abstracts

Photoconductive Step-Function Sampling

J.-H. Son, J. Kim and G.A. Mourou. "Photoconductive Step-Function Sampling." 1994 Microwave and Guided Wave Letters 4.6 (Jun. 1994 [MGWL]): 186-188.

Measurement of picosecond electrical signals using a photoconductive step-function gate is demonstrated analytically and experimentally. The time resolution of our step-function technique is limited only by the rise time of the step-function, which is approximately the same as the laser pulse width. Also, a regular, undoped semiconductor material, which is essential for the realization of a short-duration gate, can be used instead of the highly defected material. The use of undoped material gives 10 to 100 times higher sensitivity in the measurement than the impulse-function technique because of the high mobility of the undoped material.

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