

Abstracts

A Novel Type of Constant Impedance Traveling Wave Phase Shifter for InP-Based MMICs

R. Kremer, S. Redlich, L. Brings and D. Jager. "A Novel Type of Constant Impedance Traveling Wave Phase Shifter for InP-Based MMICs." 1996 MTT-S International Microwave Symposium Digest 96.1 (1996 Vol. 1 [MWSYM]): 265-268.

The paper presents a novel type of externally controllable phase shifter based on periodic coplanar transmission lines consisting of Schottky contact (SCCPL) and coplanar sections on passive substrate. The modeling of the devices is carried out by utilizing a four-pole representation of the underlying pi-sections. An optimized InP/InGaAs/InAlAs layer structure for the SCCPL is developed providing an external electronic control. Measured phase shifts up to 60°/mm at 20GHz with a line impedance of $48 \pm 1.2\Omega$ agree well with theoretical calculations.

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