Abstracts

A New 6-18GHz, -3dB Multisection Hybrid Coupler Using Asymmetric Broadside, and Edge Coupled Lines

J.S. Izadian. "A New 6-18GHz, -3dB Multisection Hybrid Coupler Using Asymmetric Broadside, and Edge Coupled Lines." 1989 MTT-S International Microwave Symposium Digest 89.1 (1989 Vol. I [MWSYM]): 243-246.

Traditionally, the design of broad band couplers on microstrip has been accomplished by the well known Lange coupler. This paper will present a new asymmetric broadside coupler which could potentially replace the Lange coupler and is shown to have superior performance. An asymmetric broadside coupled line is used as the middle section of a 3-sectlon coupler, the two outside sections being realized by symmetric edge coupled lines. This new configuration utilizes a thin polyimide layer separating the two broadside coupled lines which offers additional design freedom and requires no tuning, or bonding, thus providing higher yield and lower manufacturing cost. The performance of two couplers one using a Lange section and another using the new asymmetric broadside section are presented and compared. An accurate numerical model for the asymmetric broadside coupled section was developed and used to design the present coupler. Calculated and measured results, which exhibit excellent agreement, will be presented. The development of the numerical model for this coupler will be reported in the future.

❑ Return to main document.