Abstracts

An ultra broad band reflection type 180/spl deg/ phase shifter with series and parallel LC circuits

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An ultra broad band reflection type 180/spl deg/ phase shifter is proposed. It is composed of a 3-dB Lange coupler and a pair of novel reflective terminating circuits. The reflective terminating circuit switches two states of series and parallel LC circuits and it can achieve a 180/spl deg/ phase difference independently of frequency. Using a simplified circuit model without parasitic circuit elements, we have derived the determining condition of circuit elements to achieve 180/spl deg/ phase difference for all frequencies. The fabricated reflective terminating circuit MMIC has achieved a phase difference of 183 +/- 3/spl deg/ over 0.5 to 30 GHz. The 180/spl deg/ phase shifter MMIC has demonstrated a phase shift of 187 +/- 7/spl deg/ over 0.5 to 20 GHz band.

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