Increasing manufacturing tolerance of microstrip filters using defected ground structure

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ABSTRACT

This thesis uses defected ground structure (DGS) to change the characteristic impedance. In the design of a microwave filter, high impedance is always needed to generate the inductance. However, when the required impedance is very high, the width of microstrip is very thin. By using DGS, we can use a wider line with DGS compared to the conventional microstrip line with integral ground. In order to calculate the characteristic impedance of a microstrip line with DGS, we calculate the input impedances of a specified length with an open and a short load. Then calculate the square root of the two results. The results are used to design microwave filters to demonstrate its applicability.

Keywords : DGS、microstrip lowpass filter、microstrip line

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