Abstracts

The equivalent circuit modeling of defected ground structure with spiral shape

Chul-Soo Kim, Jong-Sik Lim, Sangwook Nam, Kwang-Yong Kang, Jong-Im Park, Geun-Young Kim and Dal Ahn. "The equivalent circuit modeling of defected ground structure with spiral shape." 2002 MTT-S International Microwave Symposium Digest 02.3 (2002 Vol. III [MWSYM]): 2125-2128 vol.3.

We proposed the newly etched DGS (Defected Ground Structure) with a spiral shape in metallic ground plane and the equivalent circuit modeling applied to a spiral DGS for the microstrip line. The proposed spiral DGS can provide steep rejection characteristics with the one and only spiral. The equivalent circuit for the spiral DGS Is derived by means of three-dimensional field analysis methods. To represent spurious resonance, the equivalent circuit of a spiral DGS is consisted of an Inductor and a shorted stub with step impedance. The circuit parameters are extracted from a simple circuit analysis method. Experimental results show excellent agreements with circuit simulation results in wide band and the validity of our circuit modeling for the spiral DGS.

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