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DESIGN AND MULTIPACTOR SIMULATIONS OF A KU-BAND IMPEDANCE TRANSFORMER

Abstract

In order to investigate the multipactor effect in this kind of waveguide structures, A Ku-band impedance transformer has been designed with the central frequency about 13GHz, the bandwidth is nearly 6GHz, the insert loss is less than 0.3dB, and the minimum gap distance is 0.4mm. The multipactor of the Ku-band impedance transformer with different coatings including gold, silver and aluminum are simulated using the Particle-In-Cell (PIC) method. The simulation results indicate that the multipactor threshold of gold coating Ku-band impedance transformer is higher than that of the other two coatings.