Abstracts

Electric Field Enhancement and Power Absorption in Microwave TR-Switches

V. Semenov, M. Lisak and D. Anderson. "Electric Field Enhancement and Power Absorption in Microwave TR-Switches." 1995 Transactions on Microwave Theory and Techniques 43.2 (Feb. 1995 [T-MTT]): 286-292.

An analytical and numerical investigation is made of electric field enhancement due to scattering of an incident plane wave by a biconical conductor. An application to microwave transmit-receive switches (TR) shows that field enhancement factors of the order of 20 to 40 are to be expected in the region close to the keep-alive contacts. An analysis of the microwave absorption by a small plasma sphere located in the vertex of the biconical conductor is also presented, showing that the plasma sphere absorbs a significant fraction of the incident power independently of the plasma size. This explains the observed absorption properties during the turn-on phase of TR switches.

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