电子与信息学报 2008 30 (6): 1521-1524 ISSN: 1009-5896 CN: 11-4494/TN

研究简报

TM_{310}模的同轴谐振腔与波导孔耦合及场分布研究

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收稿日期 2007-12-7 修回日期 2008-3-21 网络版发布日期 2008-8-28 接受日期

摘要

该文研究了采用TM_{310}高阶模同轴谐振腔与波导孔耦合构成的多注速调管输出回路。从理论上阐述了调节该输出腔的外观品质因数的原理和方法，并利用三维电磁场软件CST进行了模拟验证，得到TM_{310}模场分布均匀的，具有较低外观品质因数的同轴输出腔。

关键词 多注速调管 孔耦合 高阶模TM_{310} 场分布 外观品质因数

分类号 TN122+.5

Research on Field Distribution of TM_{310} Mode in Cylindrical Coaxial Cavity Resonator with Coupling of Waveguide Hole

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Abstract

Output circuit of multi-beam klystron, which is consist of coaxial cavity with high-order mode of TM_{310} and coupling of waveguide hole, is analyzed in this article. Some methods and steps of adjusting external Q-factor of cavity are described in theory. Some simulations are also made using CST MicroWave Studio (MWS). Output cavity with symmetrical field distribution of TM_{310} mode and low external Q-factor is obtained in this article.

Key words Multi-beam klystron Hole coupling High-order mode of TM_{310} Field distribution External Q-factor

DOI:

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