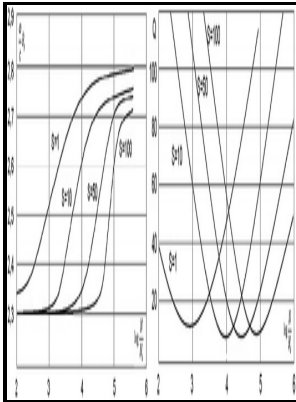


# High power microwave discharges in resonant cavities

## - - Cavity Magnetron



Description: -

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Physics Theses High power microwave discharges in resonant cavities

- High power microwave discharges in resonant cavities

Notes: Thesis (M.A.), Dept. of Physics, University of Toronto

This edition was published in 1960



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Tags: #Cavity #magnetron

### Cavity magnetron

Evenson Cavity As described by Fehsenfeld, Evenson, and Broida, Rev. Riddle, REVIEW OF SCIENTIFIC INSTRUMENTS, vol.

### Microwave Oscillators

Resonant cavity in accordance with any preceding claim, characterized in that the housing 81 includes a back plate 82 and a front plate 88 forming said side walls and the front plate 88 has an annular flange 90 extending toward and engaging said back plate 82 to form the outer wall, said front plate 88 includes a hub 92 projecting toward but spaced from the back plate 82, the hub 92 and back plate 82 having aligned openings 94,86 therethrough through which the refractory tube 146 extends, the space between the hub 92 and the back plate 82 forming the first portion 98 of the chamber 96, and the remaining space, surrounding the hub 92, forming the second portion 100 of the chamber 98.

### Microwave resonant cavity.

The modern magnetron is a fairly efficient device. In this case,  $B_0$  is the magnetic flux density, on the order of 10 Tesla, which is also produced by means of controlled motion of charged matter subjected to rapid acceleration transients by accelerated vibration. Electrons pass by the openings to these cavities and cause microwaves to oscillate within, similar to the way a whistle produces a tone when excited by an air stream blown past its opening.

### Microwave Cavities

The tube is embraced between the poles of two horseshoe-shaped magnets top, bottom, which create a magnetic field along the axis of the tube. This transfer results in a negative differential conductance that can be used in microwave generation.

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