

## COMB STRUCTURE AS A SWITCH OF RESONANT MICROWAVE COMPRESSOR

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Microwave resonant compressors maintaining fast energy extraction include switches of waveguide T-junction type when the cavity – load transmission factor is designed to be close to unity. A large size of the T-junction switch and a relatively long time of switching plasma formation are disadvantages. The report proposes the switch installed into a regular waveguide. The switch is made as a two-row comb structure filter and some its rods have capacity parts. The filter is rejection one at the resonant frequency during excitation of a cavity. Once the capacity parts are broken down the filter turns into the bandpass one with the transitive attenuation in the range 0 – (-1) dB. The switch can operate at the spontaneous breakdown mode or with controlling external triggering. Frequency – transition attenuation characteristics are presented for storage and extraction modes. Comb structure dimensions variation allows matching the rejection frequency and, after switching, bandpass frequency. Operation of the X- band compressor with the cavity made of the oversized rectangular waveguide was simulated. The estimated power gain was 18 db at the output pulse width of about several nanoseconds.

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