Abstracts

Frequency Multiplication with the Step Recovery Diode

R.D. Hall. "Frequency Multiplication with the Step Recovery Diode." 1965 G-MTT Symposium Program and Digest 65.1 (1965 [MWSYM]): 87-88.

The step recovery diode has been discussed in several papers. Recently, diodes have become availble with attractive combinations of short transition time, long lifetime, low series resistance, and high breakdown voltage. These parameters are all related to the efficiency and power handling capability of frequency multipliers using these diodes. Special frequency multipliers were constructed to explore the relations among the diode characteristics and the performance of multipliers. To make multipliers suitable for such study, the circuits were constructed to eliminate resonances except at the input and the output frequency even for high order multiplication. Diode current was measured by budding into the multiplier a current sampling resistor immediately adjacent to the diode. The value of the resistance is kept small, and the voltage developed across it is observed with a Hewlett-Packard sampling oscilloscope having a bandwidth of 5 gc. The output circuits of these multipliers were tunable cavities coupled to the diode so that operation could be observed at many different multiples of the input frequency.

❑ Return to main document.