

# Abstracts

## Miniaturized Hair-Pin Resonator Filters and Their Applications to Receiver Front-End MICs (1989 Vol. II [MWSYM])

*K. Takahashi, M. Sagawa and M. Makimoto. "Miniaturized Hair-Pin Resonator Filters and Their Applications to Receiver Front-End MICs (1989 Vol. II [MWSYM])." 1989 MTT-S International Microwave Symposium Digest 89.2 (1989 Vol. II [MWSYM]): 667-670.*

This paper describes the newly-developed miniaturized hair-pin resonator filters suitable for microwave integrated circuits (MICs). The size of the experimental filters has been reduced to one-half of the conventional hair-pin resonator filter, without increasing insertion losses. Trial receiver front-end MICs using these filters have also been developed and shown good characteristics, such as low noise and high image suppression ratio.

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