

A Study on the Fabrication and Evaluation of the MEMS Based FBAR Filter for wireless systems

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Abstract— The purpose of this research is study on the Fabrication and Evaluation of the MEMS Based FBAR Filter for wireless systems. In this research, composed ladder type filter using thin plate resonator by MBVD equivalent modeling. Use inductor, passive component, for low frequency band attenuation characteristic. Regarding better GND and adjust thermal conductivity, explained new via manufacturing method in this research. Quality value(Q) of the manufactured resonator is 687, and effective electro-mechanical coupling constant(K_{eff2}) is 6.6%. Developed ladder type FBAR filter has less than -3.5dB insertion loss than -10dB return loss, and especially for attenuation characteristics less than -40dB at 1710~1785MHz.

Keyword—FBAR, MEMS, Resonator, Filter, MBVD



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