InGaP/GaAs 화합물 반도체 공정을 이용한 MMIC Diplexer 설계

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Design of MMIC Diplexer using Eliptic Function Technique in InGaP/GaAs Process

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Abstract : In this paper, a MMIC diplexer with a low pass and high pass filter are designed and fabricated using an InGaP/GaAs process. The design of this diplexer is based on its stabilization of the low insertion loss since it is important in the in-building system (IBS). The IBS integrates wire and wireless signal between the cable television (CATV) and the personal communication system. In this design, a dual-mode operation of diplexer is fabricated with the frequency of 0 Hz to 900 MHz and 1.7 GHz to 2.2 GHz for CATV and personal communication. respectively. The topolygy of the designed diplexer is based on the L-C filter. This diplexer fabricated by nanoENS Inc. which is foundry service company, was measured by using the facilities of the Kwangwoon University RFIC center. The fabricated chip size is 1.6 × 1.4 mm^2 and it has abroad frequency range from 0 Hz to 2.2 GHz.

Key Words : InGap/GaAs process, MMIC, Diplexer, CATV

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