

AllnAs/GalnAs on InP HEMT Low Noise MMIC Amplifiers

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We have developed AllnAs/GalnAs on InP HEMT single-stage low-noise MMIC amplifiers for operation at 12 GHz, 35 GHz, and 60 GHz. A noise figure of 0.78 dB with associated gain of 15 dB was achieved at 12 GHz. This is the lowest noise figure yet reported for a monolithic amplifier at 12 GHz. A noise figure of 1.2 dB with gain greater than 12 dB was obtained from 10 to 14 GHz. At 35.5 GHz, we have obtained 13 dB gain with 17 dB input return loss. At 55 GHz, we have obtained 8 dB gain with more than 12 dB input return loss.

 [Return to main document.](#)