Abstracts

High Performance MMICs in Coplanar Waveguide Technology for Commercial V-Band and W-Band Applications

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We have designed and fabricated a family of coplanar MMICs based on a 0.16 µm gate length pseudomorphic MODFET technology which cover the 63-64 GHz and 76-77 GHz frequency bands allocated for automotive applications in Europe. The realized circuits comprise a 3-stage low noise amplifier (LNA) with 21 dB gain and 6.2 dB noise figure at 77 GHz, a 2-stage medium power amplifier (MPA) with 28 mW saturated output power at 77 GHz and more than 9.5 dB gain from 70 to 80 GHz, a FET mixer working from 63 to 78 GHz with a conversion loss of 2.5 dB and a noise figure of 14 dB at 64 GHz, and an oscillator with 8 mW output power at 75 GHz.

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