Abstracts

A Gunn diode based surface mount 77 GHz oscillator for automotive applications

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Gunn diode cavity oscillators are currently used in the majority of ACC 77 GHz radar systems. These are bulky and normally require to be individually tuned. A substrate based voltage controlled oscillator has been developed, still using a Gunn diode; which has small size, is surface mount packaged and which retains the superior performance of a Gunn based oscillator over MMIC solutions. A good performance over temperature is achieved, due to the use of hot electron injection in the Gunn diode and the oscillator is voltage tuned by employing a varactor diode. The design, construction and performance are presented of a planar circuit based VCO which is suitable for high volume production.

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