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Title:A 90-nm CMOS 144 GHz injection locked frequency divider with inductive feedback
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Abstract:This paper presents a 144 GHz divide-by-2 injection locked frequency divider (ILFD) with inductive feedback developed in a commercial 90-nm Si RFCMOS technology. It was demonstrated that division-by-2 operation is achieved with input power down to -12 dBm, with measured locking range of 0.96 GHz (144.18 - 145.14 GHz) at input power of -3 dBm. To the authors' best knowledge, this is the highest operation frequency for ILFD based on a 90- nm CMOS technology. From supply voltage of 1.8 V, the circuit draws 5.7 mA including both core and buffer. The fabricated chip occupies 0.54 mm×0.69 mm including the DC and RF pads.
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