

## **A 40 GHz VCO with 9 to 15% Tuning Range in 0.13 $\mu$ m SOI CMOS**

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A 40 GHz fully-monolithic complementary VCO fabricated in IBM 0.13  $\mu$ m partially-depleted SOI CMOS technology is reported. The VCO operates at 1.5 V supply and draws 11.25 mW of power. The measured phase noise at 40 GHz is  $-109$  dBc/Hz at 4 MHz offset from the carrier. At 1.5 V and 2 V  $V_{DD}$ , the tuning range is 9% and 15% respectively, and the output power is  $-8$  dBm and  $-5$  dBm respectively. The VCO occupies a chip area of only 100  $\mu$ m by 100  $\mu$ m.