

**Fully-depleted-collector Silicon-on-Insulator (SOI) bipolar transistor
useful alone or in SOI BiCMOS**

Abstract of the Invention

A bipolar transistor structure (10) is described incorporating an emitter (12), base (14), and collector (16) having a fully depleted region (18) on an insulator of a Silicon-On-Insulator (SOI) substrate (28) without the need for a highly doped subcollector to permit the fabrication of vertical bipolar transistors on semiconductor material having a thickness of 300 nm or less and to permit the fabrication of SOI BiCMOS. The invention overcomes the problem of requiring a thick semiconductor layer in SOI to fabricate vertical bipolar transistors with low collector resistance.

Fig. 6