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Baliga et al.

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[54] **GATE MODULATED BIPOLAR TRANSISTOR**

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[73] Assignee: **General Electric Company**, Schenectady, N.Y.

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Related U.S. Application Data

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[51] **Int. Cl.²** **H01L 29/66**; H01L 29/72; H01L 27/92

[58] **Field of Search** 357/34, 36, 43, 57, 357/88

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[57] **ABSTRACT**

Geometrical design criteria are disclosed for a Gate Modulated BiPolar Transistor, or GAMBIT, which is a three terminal variable negative resistance device. The GAMBIT is a planar, interdigited, integrated device whose electrical characteristics show a voltage controlled negative resistance between two of its terminals. The magnitude of the negative resistance is controlled by the variation of the applied bias to the third terminal.

12 Claims, 19 Drawing Figures