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(71) Applicant *(for all designated States except US)*: **ADVANCED MICRO DEVICES, INC.** [US/US]; One AMD Place, Mail Stop 68, P.O. Box 3453, Sunnyvale, CA 94088-3453 (US).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **WEI, Andy** [US/DE]; Alaunstrasse 23, 01099 Dresden (DE). **KAMMLER, Thorsten** [DE/DE]; Buchenstrasse 12c, 01458 Ottendorf-Okrilla (DE). **HOENTSCHEL, Jan** [DE/DE]; Prellerstrasse 9, 01309 Dresden (DE). **HORSTMANN, Manfred** [DE/DE]; Aeussere Parkstr 25, 01833 Duerroehrsdorf-Dittersbach (DE).

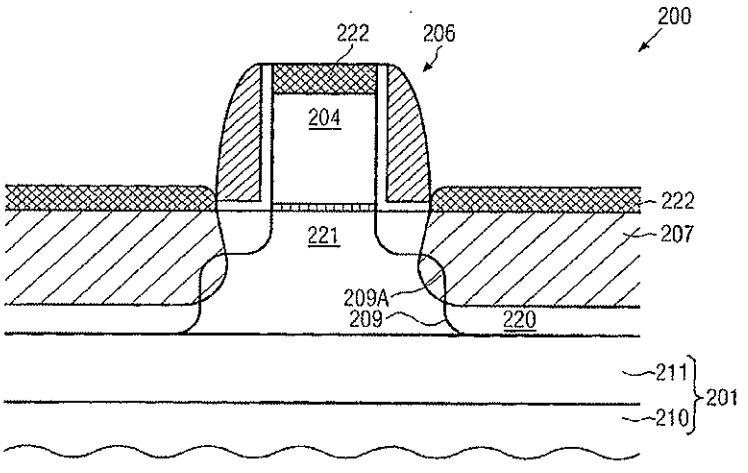
(74) Agent: **DRAKE, Paul, S.**; Advanced Micro Devices, Inc., 5204 East Ben White Boulevard, Mail Stop 562, Austin, TX 78741 (US).

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(54) Title: AN SOI TRANSISTOR HAVING AN EMBEDDED STRAIN LAYER AND A REDUCED FLOATING BODY EFFECT AND A METHOD FOR FORMING THE SAME



(57) Abstract: By forming a portion (209A, 309A, 409A) of a PN junction (209, 309, 409) within strained silicon/germanium material (207, 307, 407) in SOI transistors (200, 300, 400) with a floating body (221, 321) architecture, the junction leakage may be significantly increased, thereby reducing floating body effects. The positioning of a portion (209A, 309A, 409A) of the PN junction (209, 309, 409) within the strained silicon/germanium material (207, 307, 407) may be accomplished on the basis of implantation and anneal techniques, contrary to conventional approaches in which *in situ* doped silicon/germanium is epitaxially grown so as to form the deep drain and source regions. Consequently, high drive current capability may be combined with a reduction of floating body effects.

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