

# Exhibit 3

(12) **United States Patent**  
**Leedy**

(10) **Patent No.:** **US 7,504,732 B2**  
 (45) **Date of Patent:** **Mar. 17, 2009**

(54) **THREE DIMENSIONAL STRUCTURE MEMORY**

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(\* ) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 649 days.

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(21) Appl. No.: **10/222,816**

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(22) Filed: **Aug. 19, 2002**

DE 32 33 195 3/1983

(65) **Prior Publication Data**

US 2003/0057564 A1 Mar. 27, 2003

(Continued)

**Related U.S. Application Data**

OTHER PUBLICATIONS

(60) Division of application No. 09/776,885, filed on Feb. 6, 2001, now Pat. No. 6,551,857, which is a continuation of application No. 09/607,363, filed on Jun. 30, 2000, now Pat. No. 6,632,706, which is a continuation of application No. 08/971,565, filed on Nov. 17, 1997, now Pat. No. 6,133,640, which is a division of application No. 08/835,190, filed on Apr. 4, 1997, now Pat. No. 5,915,167.

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Primary Examiner—Zandra Smith

(51) **Int. Cl.**

**H01L 23/48** (2006.01)  
**H01L 23/52** (2006.01)

(52) **U.S. Cl.** ..... **257/777; 257/778**

(58) **Field of Classification Search** ..... None  
 See application file for complete search history.

(57) **ABSTRACT**

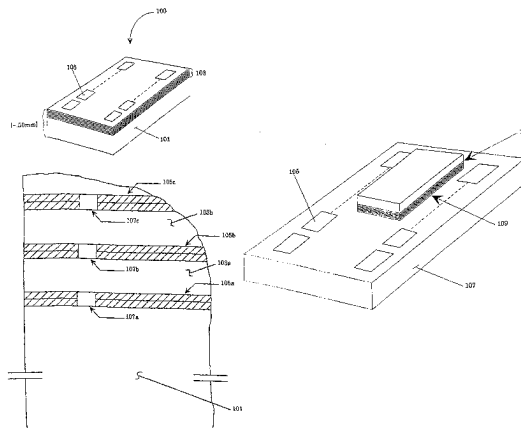
A Three-Dimensional Structure (3DS) Memory allows for physical separation of the memory circuits and the control logic circuit onto different layers such that each layer may be separately optimized. One control logic circuit suffices for several memory circuits, reducing cost. Fabrication of 3DS memory involves thinning of the memory circuit to less than 50 μm in thickness and bonding the circuit to a circuit stack while still in wafer substrate form. Fine-grain high density interlayer vertical bus connections are used. The 3DS memory manufacturing method enables several performance and physical size efficiencies, and is implemented with established semiconductor processing techniques.

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**68 Claims, 9 Drawing Sheets**



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