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# United States Patent [19]

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**Tokunaga et al.**

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[54] **MEMORY MODULE**

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[\*] Notice: This patent issued on a continued prosecution application filed under 37 CFR 1.53(d), and is subject to the twenty year patent term provisions of 35 U.S.C. 154(a)(2).

[21] Appl. No.: **08/852,294**

[22] Filed: **May 7, 1997**

[30] **Foreign Application Priority Data**

Dec. 6, 1996 [JP] Japan ..... 8-327147

[51] **Int. Cl.<sup>7</sup>** ..... **H05K 07/02**

[52] **U.S. Cl.** ..... **361/760; 361/765; 361/736; 361/784; 361/779; 361/803; 395/401; 395/402; 395/405; 395/427; 395/431; 395/474; 395/475; 365/63; 365/51**

[58] **Field of Search** ..... **361/760, 765, 361/736, 784, 779, 803; 365/63, 51**

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[57] **ABSTRACT**

A memory module capable of changing the generation of semiconductor memory devices by changing the design of a unit board without changing the design of a mother board.

The mother board has connection terminals having an ability of connecting with first and second generation type unit boards, so that even when a connection terminal location is changed as a result of the generation change of the semiconductor memory devices, the next unit board can be connected to the mother board by selecting an appropriate terminal from connection terminals on the mother board.

**14 Claims, 7 Drawing Sheets**

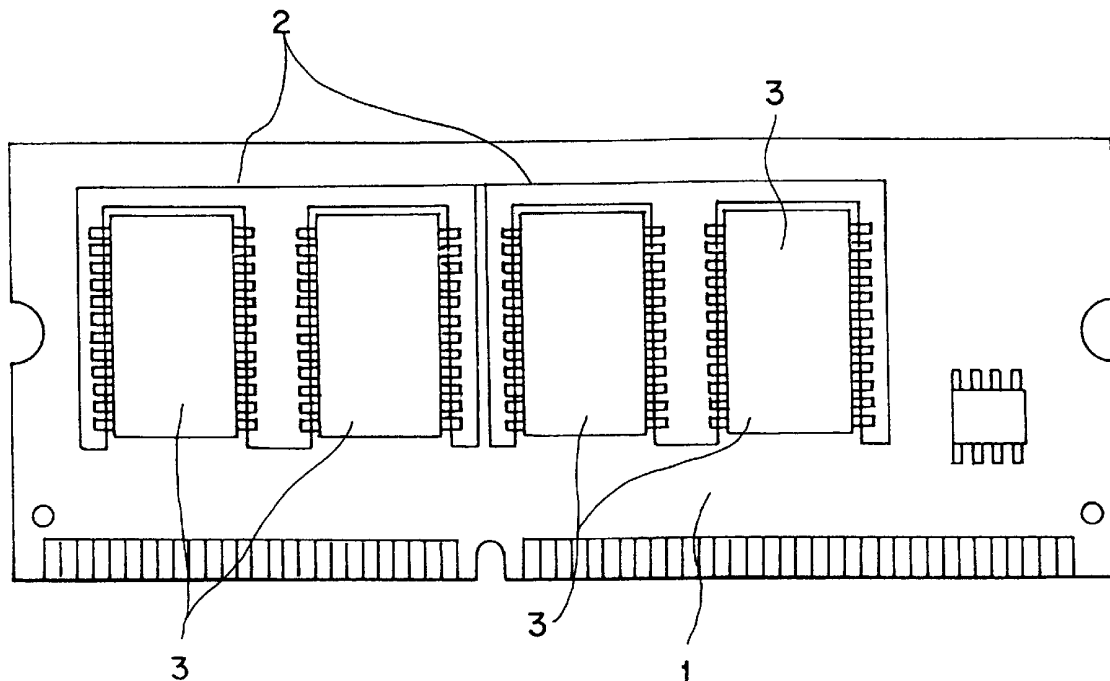


Fig. 1

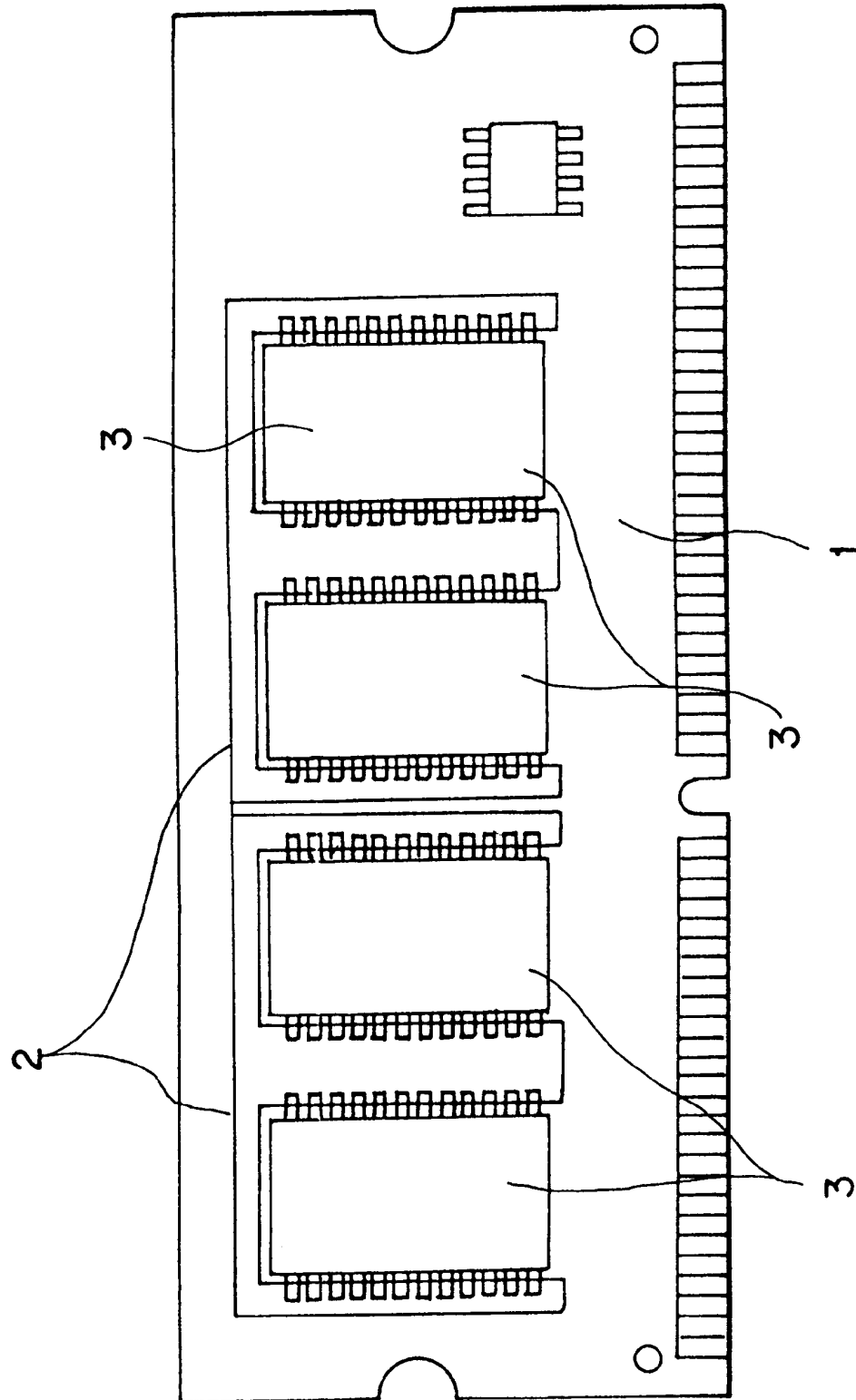
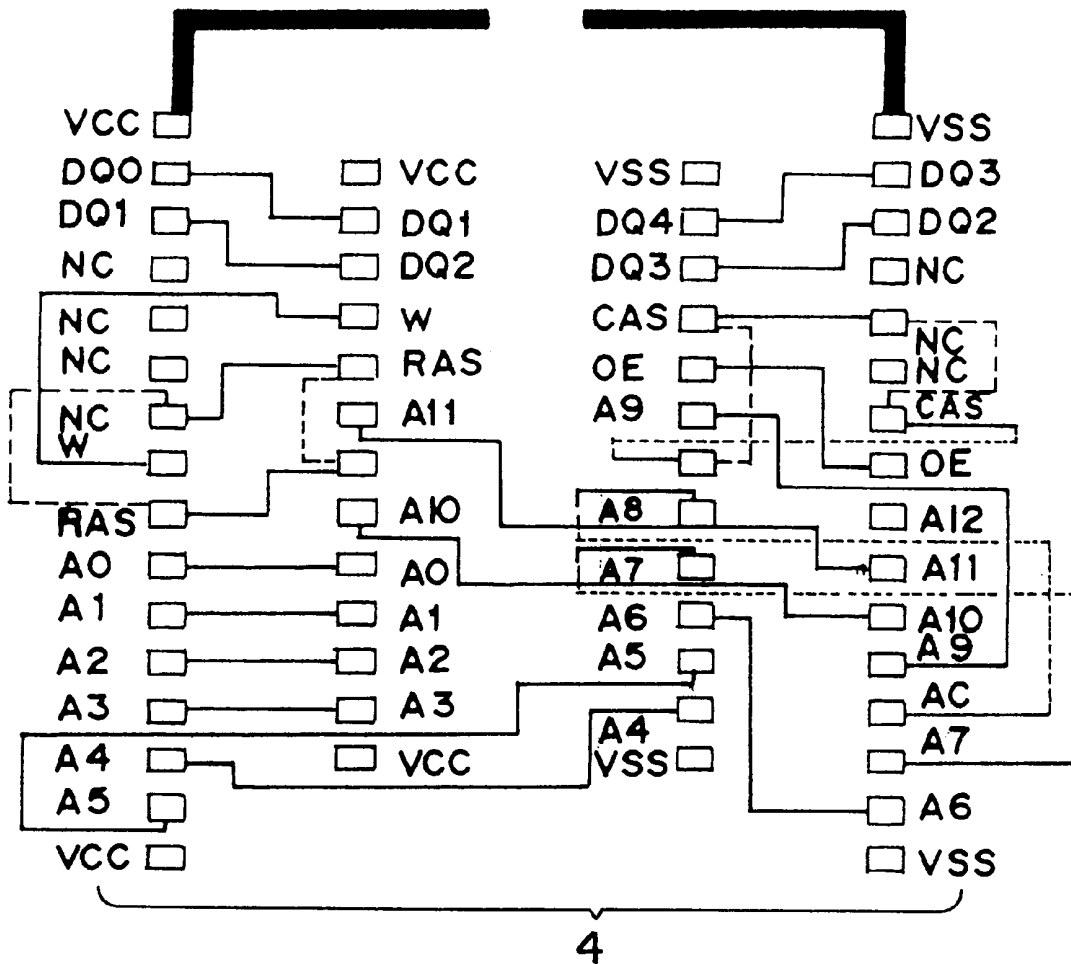


Fig. 2

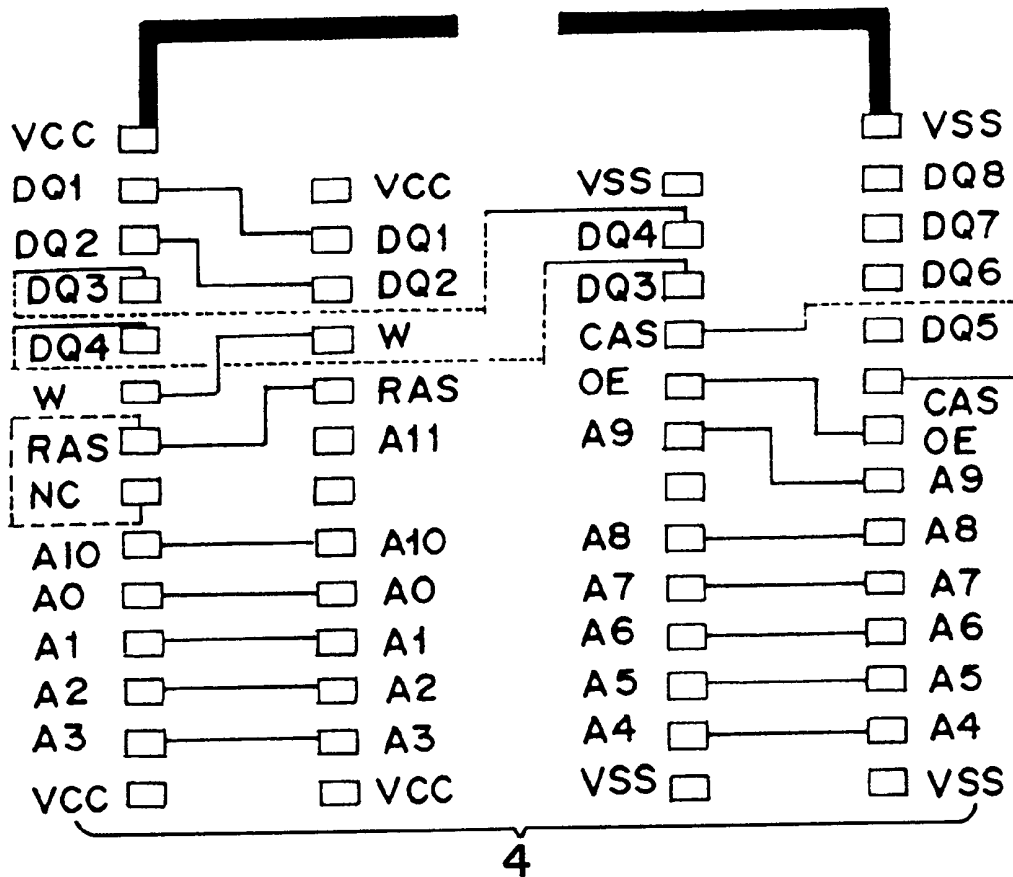
Commonly used by 64MD(X4) and 16MD(X4)



- Wiring on the mother board (external layer)
- Wiring on the mother board (internal layer)
- ..... Wiring on the unit board

*Fig. 3*

Commonly used by I6MD(X8) and I6MD(X4)



- Wiring on the mother board (external layer)
- ..... Wiring on the mother board (internal layer)
- Wiring on the unit board

Fig. 4

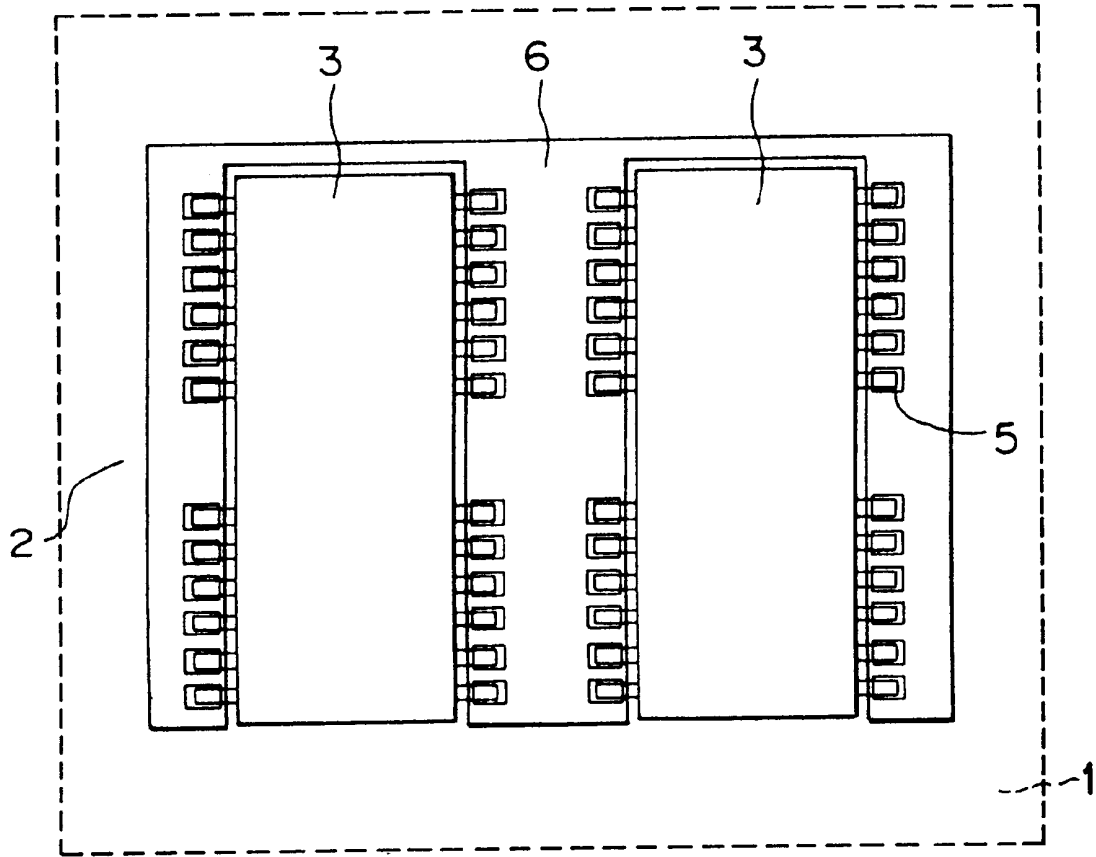
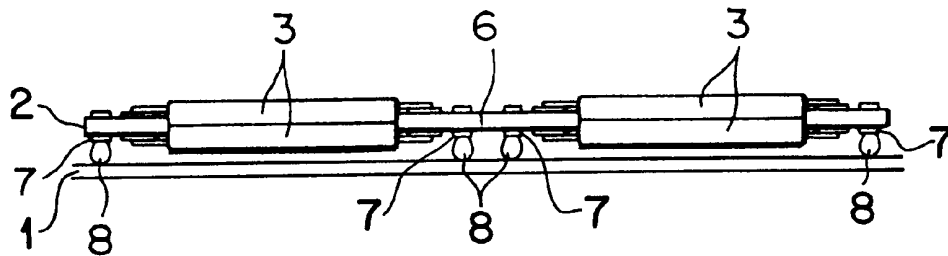


Fig. 5



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