



US 20230230921A1

(19) **United States**(12) **Patent Application Publication**  
LIN et al.(10) **Pub. No.: US 2023/0230921 A1**(43) **Pub. Date: Jul. 20, 2023**(54) **SEMICONDUCTOR MEMORY DEVICE AND METHOD FOR MANUFACTURING THE SAME**(71) Applicant: **TAIWAN SEMICONDUCTOR MANUFACTURING COMPANY, LTD.**, Hsinchu (TW)(72) Inventors: **Meng-Han LIN**, Hsinchu (TW);  
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**H01L 23/528** (2006.01)  
**H01L 27/11519** (2006.01)  
**H01L 29/417** (2006.01)  
**H01L 29/786** (2006.01)  
**H01L 29/66** (2006.01)  
**H01L 27/11556** (2006.01)  
**H01L 27/11524** (2006.01)**H01L 27/11565** (2006.01)**H01L 27/1157** (2006.01)**H01L 27/11582** (2006.01)**H01L 27/11587** (2006.01)**H01L 27/1159** (2006.01)**H01L 27/11597** (2006.01)(52) **U.S. Cl.**CPC .... **H01L 23/5283** (2013.01); **H01L 27/11519** (2013.01); **H01L 29/41733** (2013.01); **H01L 29/78618** (2013.01); **H01L 29/66742** (2013.01); **H01L 27/11556** (2013.01); **H01L 27/11524** (2013.01); **H01L 27/11565** (2013.01); **H01L 27/1157** (2013.01); **H01L 27/11582** (2013.01); **H01L 27/11587** (2013.01); **H01L 27/1159** (2013.01); **H01L 27/11597** (2013.01)

(57)

**ABSTRACT**

A semiconductor device includes a semiconductor substrate, first and second stack units disposed over the semiconductor substrate, and a feature disposed between the first and second stack units. Each of the first and second stack units includes at least one stack that includes a conductive film and a dielectric film stacked on each other. The feature includes a plurality of repeating units and a plurality of separators disposed to alternate with the repeating units. Each of the repeating units includes an inner portion including a pair of conductive pillars, and an outer portion including a memory film and a channel film. A method for manufacturing the semiconductor device is also disclosed.

