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(54) **METHOD AND COMPUTING SYSTEM FOR
MANUFACTURING THREE-DIMENSIONAL
SEMICONDUCTOR DEVICE**

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(57) **ABSTRACT**

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A method and a computing system, for manufacturing a three-dimensional semiconductor device including first and second semiconductor device layers, are provided. The method includes: identifying candidate locations in a via area of the first semiconductor layer; identifying nets of the second semiconductor layer to be connected to through-via structures corresponding to the candidate locations; identifying a plurality of connection costs respectively corresponding to connections between the through-via structures and the nets; identifying pairs of the nets and the through-via structures, based on the plurality of connection costs; allocating the through-via structures according to the pairs; forming the through-via structures at the candidate locations; and forming electrical connections between the through-via structures.

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