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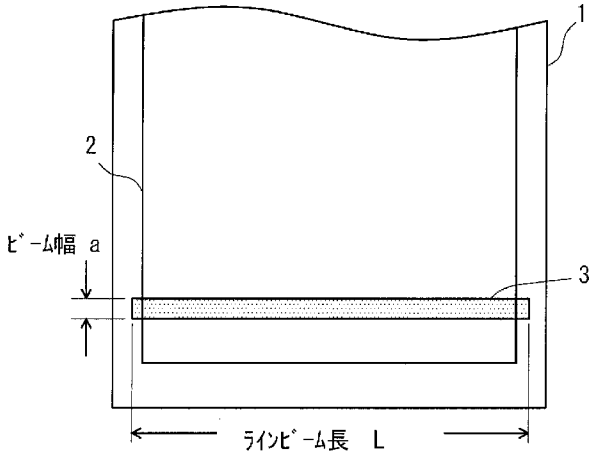
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(54) **Title**: METHOD OF MANUFACTURING CRYSTALLINE SEMICONDUCTOR FILM

(54) 発明の名称 : 結晶半導体膜の製造方法

[図1]



a - **BEAM WIDTH**
L - **LINE BEAM LENGTH**

(57) **Abstract**: A non-monocrystalline semiconductor film can be crystallized by performing laser annealing of the semiconductor film with an appropriate scanning pitch and by the appropriate number of emissions. Specifically disclosed is a method of manufacturing a crystalline semiconductor film by emitting a pulsed laser with a line-beam shape onto a non-monocrystalline semiconductor film so that the semiconductor film is crystallized. The cross-sectional shape of the beam of the pulsed laser in the scanning direction has a flat portion (beam width a) of which intensity is uniform. The pulsed laser has an emission-pulse energy density E lower than the emission-pulse energy density at which microcrystallization occurs in the non-monocrystalline semiconductor film, where the width of a channel region of a transistor formed by the semiconductor film crystallized by the emission of the pulsed laser is defined as b. The number n of emissions of the pulsed laser is more than or equal to (n0 - 1), where the number of emissions by which crystal grain diameter growth by the emission of the pulsed laser with the emission-pulse energy density E is saturated is defined as n0, and the moving distance c of the pulsed laser in the scanning direction is less than or equal to b/2.

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