

Abstract

To reduce adverse effects on rising sections formed on a semiconductor film by overlap irradiation of a pulsed laser, provided is a laser processing method of forming a crystal semiconductor film by performing overlap irradiation at a predetermined scanning pitch while scanning a non-single crystal semiconductor film by a pulsed laser with a predetermined beam cross section profile, wherein the overlap irradiation of the pulsed laser is performed by setting the scanning pitch in a range satisfying a formula $0.75b \geq p \geq 0.25b$, wherein b denotes a length in a scanning direction of a base of a rising section formed by the irradiation of the semiconductor film with the pulsed laser, formed on a back end side in the scanning direction of a pulsed laser beam directed to the semiconductor film, and p denotes the scanning pitch. In this way, the rising sections are closely formed to reduce the difference in elevation between the rising sections and to reduce uneven irradiation.