LASER ANNEALING TREATMENT APPARATUS AND LASER ANNEALING TREATMENT METHOD

ABSTRACT OF THE DISCLOSURE

Provided is a laser annealing treatment including a laser light source that outputs pulse laser light, an optical system that shapes the pulse laser light, and leads the shaped pulse laser light to a semiconductor film subject to treatment, and a stage that carries the semiconductor film to be irradiated by the pulse laser light, wherein the pulse laser light irradiating the semiconductor film presents a rising time equal to or less than 35 nanoseconds from 10% of the maximum height to the maximum height in the pulse energy density, and a falling time equal to or more than 80 nanoseconds from the maximum height to 10% of the maximum height, thereby increasing, while an energy density suitable for crystallization and the like is not particularly increased, a margin quantity thereof, and carrying out high quality annealing treatment without decreasing a throughput.

Fig. 3