WHAT IS CLAIMED IS:

1. A chip manufacturing method for manufacturing chips by dividing a wafer including a device formed in each region demarcated by a plurality of intersecting planned dividing lines set on a front surface of a substrate and a laminate formed at least on the plurality of planned dividing lines, the chip manufacturing method comprising:

a modified layer forming step of forming a modified layer along the planned dividing lines and forming a crack extending from the modified layer to a front surface side of the substrate by applying, along the planned dividing lines, a first laser beam having a wavelength transmitted through the substrate, in a state in which a back surface side of the substrate is exposed and a condensing point of the first laser beam is positioned within the substrate from the back surface side of the substrate;

a grinding step of thinning the wafer to a predetermined thickness by grinding the back surface side of the substrate exposed in the modified layer forming step, after the modified layer forming step; and

a laser-processed groove forming step of forming a laser-processed groove in the laminate by applying, along

the planned dividing lines, a second laser beam having a wavelength absorbed by the substrate, from a front surface side of the wafer, after the grinding step.

2. The chip manufacturing method according to claim 1, wherein,

in the laser-processed groove forming step, the laser-processed groove is formed in such a manner as to cover the crack extending from the modified layer to the front surface side of the wafer.

3. The chip manufacturing method according to claim 2, wherein,

in the laser-processed groove forming step, the laser-processed groove is formed in such a manner as not to divide the laminate completely.

4. The chip manufacturing method according to claim 2, wherein,

in the laser-processed groove forming step, the laser-processed groove is formed in such a manner as to divide the laminate completely.

5. The chip manufacturing method according to claim 1, wherein,

in the modified layer forming step, the crack extending to the front surface side of the wafer is formed in such a manner as not to sever the laminate.

6. The chip manufacturing method according to claim 1, wherein,

in the modified layer forming step, the crack extending to the front surface side of the wafer is formed in such a manner as to sever the laminate.

7. The chip manufacturing method according to claim 1, further comprising:

a tape affixing step of affixing a tape having elasticity to the back surface side of the substrate, after the grinding step but before the laser-processed groove forming step; and

an expanding step of expanding the tape affixed to the back surface side of the substrate, after the laser-processed groove forming step.

8. The chip manufacturing method according to claim 1, wherein,

in the modified layer forming step, a condensing point of the first laser beam is positioned at a predetermined depth within the substrate from the back surface side of the substrate, said predetermined depth at a position closer to the front surface side of the substrate than the back surface side of the substrate.

9. The chip manufacturing method according to claim 1, wherein,

in the modified layer forming step, a distance from the condensing point to the front surface of the substrate, also being a distance from the modified layer to the front surface, is adjusted as appropriate in such a manner as to be larger than a finished thickness of the substrate.

10. The chip manufacturing method according to claim 4, wherein,

in the laser-processed groove forming step, the second laser beam is branched into two, and two condensing points are applied along one planned dividing line, forming two laser processed grooves that completely sever the laminate along the planned dividing line.

11. The chip manufacturing method according to claim 3, wherein,

in the laser-processed groove forming step, the second laser beam is branched into two, and two condensing points are applied along one planned dividing line, forming two laser processed grooves that are shallow and do not sever the laminate along the planned dividing line.

12. The chip manufacturing method according to any one of claim 10 or claim 11, wherein,

in the laser-processed groove forming step, the

laminate remaining between the two laser-processed grooves is irradiated with a top-hat beam.