WHAT IS CLAIMED IS:

1. A silicon carbide (SiC) ingot forming method comprising:

a holding step of holding by a chuck table a cut section of a primitive SiC ingot cut from an SiC ingot growth base;

a planarization step of grinding an end surface of the primitive SiC ingot held by the chuck table, to planarize the end surface;

a c-plane detection step of detecting a c-plane of the primitive SiC ingot from the planarized end surface;

a first end surface forming step of grinding the planarized end surface, to form a first end surface inclined at an off angle relative to the c-plane; and

a second end surface forming step of holding the first end surface by the chuck table and grinding the cut section of the primitive SiC ingot in parallel to the first end surface, to form a second end surface, and

wherein in the c-plane detection step, a laser beam of such a wavelength as to be transmitted through SiC is applied to the primitive SiC ingot from the end surface planarized in the planarization step, with a focal point of the laser beam positioned inside the primitive SiC ingot, to form a modified layer in which SiC is separated

into silicon (Si) and carbon (C) and a crack extends along the c-plane, and the modified layer is observed from the planarized end surface to detect the c-plane, and

further wherein the observing of the modified layer also includes measuring a depth of the crack extending along the c-plane, with respect to the planarized end surface, at a plurality of locations to detect an inclination angle and inclination direction of the c-plane.

2. The SiC ingot forming method according to claim 1, wherein after the first end surface forming step, a peripheral surface of the primitive SiC ingot is formed with a first orientation flat parallel to a direction in which the off angle is formed, and with a second orientation flat orthogonal to the first orientation flat on a right side of the first orientation flat as the primitive SiC ingot is viewed from the first end surface side.

3. The SiC ingot forming method according to claim 2, wherein the second orientation flat is formed to be shorter than the first orientation flat.

4. The SiC forming method of claim 1, further comprising:

a determining the difference step of determining the difference between a predetermined angle relative to the c-plane and the inclination angle of the c-plane determined in the c-plane detection step, wherein the determining the difference step is performed after the c-plane detection step; and

a wedge inserting step of inserting a wedge between the primitive SiC ingot and the chuck table, wherein the wedge includes an upper surface and a lower surface, and an angle defined between the upper surface and the lower surface is equal to the difference determined in the determining the difference step, and further wherein the wedge inserting step is performed between the determining the difference step and the first end surface forming step.

5. The SiC ingot forming method according to claim 4, wherein said predetermined angle is 1°.

6. The SiC ingot forming method according to claim 4, wherein said predetermined angle is 4°.

7. The SiC ingot forming method according to claim 4, wherein said predetermined angle is 6°.

8. A silicon carbide (SiC) ingot forming method comprising:

a holding step of holding by a chuck table a cut section of a primitive SiC ingot cut from an SiC ingot growth base;

a planarization step of grinding an end surface of the primitive SiC ingot held by the chuck table, to planarize the end surface;

a c-plane detection step of detecting a c-plane of the primitive SiC ingot from the planarized end surface and determining an inclination angle of the c-plane;

a determining the difference step of determining the difference between a predetermined off angle relative to the c-plane and the inclination angle of the c-plane determined in the c-plane detection step;

a first end surface forming step of grinding the planarized end surface to form a first end surface inclined at the predetermined off angle relative to the c-plane; and

a second end surface forming step of holding the first end surface by the chuck table and grinding the cut section of the primitive SiC ingot in parallel to the first end surface, to form a second end surface, and

wherein the method further comprises:

a wedge inserting step of inserting a wedge between the primitive SiC ingot and the chuck table,

wherein the wedge includes an upper surface and a lower surface, and an angle defined between the upper surface and the lower surface is equal to the difference determined in the determining the difference step; and

wherein the wedge inserting step is performed between the determining the difference step and the first end surface forming step.

9. The SiC ingot forming method according to claim 8, wherein in the c-plane detection step, a laser beam of such a wavelength as to be transmitted through SiC is applied to the primitive SiC ingot from the end surface planarized in the planarization step, with a focal point of the laser beam positioned inside the primitive SiC ingot, to form a modified layer in which SiC is separated into silicon (Si) and carbon (C) and a crack extends along the c-plane, and the modified layer is observed from the planarized end surface to detect the c-plane.

10. The SiC ingot forming method according to claim 8, wherein after the first end surface forming step, a peripheral surface of the primitive SiC ingot is formed with a first orientation flat parallel to a direction in which the off angle is formed, and with a second orientation flat orthogonal to the first orientation flat on a right side of the first orientation flat as the

primitive SiC ingot is viewed from the first end surface side.

11. The SiC ingot forming method according to claim 10, wherein the second orientation flat is formed to be shorter than the first orientation flat.

12. The SiC ingot forming method according to claim 8, wherein said predetermined off angle is 1°.

13. The SiC ingot forming method according to claim 8, wherein said predetermined off angle is 4°.

14. The SiC ingot forming method according to claim 8, wherein said predetermined off angle is 6°.