WHAT IS CLAIMED IS:

1. A method for manufacturing a semiconductor device, comprising the steps of:

irradiating a bond substrate with an ion to form an embrittlement region in the bond substrate;

forming a conductive layer over a base substrate having an insulating surface;

attaching the bond substrate and the conductive layer with an insulating layer interposed between the bond substrate and the conductive layer;

heating the bond substrate and separating the bond substrate in the embrittlement region to form a stacked structure of the conductive layer, the insulating layer, and a semiconductor layer over the base substrate;

patterning the semiconductor layer and forming an island-shaped semiconductor layer;

forming a gate insulating layer over the island-shaped semiconductor layer;

forming a gate electrode over the gate insulating layer;

forming a first impurity region, a second impurity region, and a third impurity region; and

forming a first electrode electrically connected to the first impurity region and a second electrode electrically connected to the second impurity region,

wherein the third impurity region is provided between a channel formation region and the second impurity region.

2. The method for manufacturing a semiconductor device, according to claim 1, further comprising the step of forming a protective insulating layer over the bond substrate,

wherein adding the ion to the bond substrate is performed through the protective insulating layer.

3. The method for manufacturing a semiconductor device, according to claim 1, wherein an impurity concentration in the third impurity region is lower than that of

the second impurity region.

4. The method for manufacturing a semiconductor device, according to claim 1,

wherein an impurity concentration of each of the first impurity region and the second impurity region is higher than or equal to 1×10^{19} atoms/cm^3, and

wherein an impurity concentration of the third impurity region is higher than or equal to 5×10^{16} atoms/cm^3.

5. The method for manufacturing a semiconductor device, according to claim 1, wherein the bond substrate is a single crystal silicon substrate or a single crystal silicon carbide substrate.

6. The semiconductor device according to claim 1,

wherein the conductive layer is configured to reduce an electric field at a periphery of a bonding region when a voltage is applied between the first impurity region and the second impurity region, and

wherein the bonding region is where the channel formation region and the second impurity region are bonded to each other.

7. A method for manufacturing a semiconductor device, comprising the steps of:

irradiating a bond substrate with an ion to form an embrittlement region in the bond substrate;

forming a first insulating layer over the bond substrate;

forming a conductive layer over the first insulating layer;

forming a second insulating layer over the conductive layer;

forming a third insulating layer over a base substrate;

attaching the second insulating layer to the third insulating layer;

heating the bond substrate and separating the bond substrate in the embrittlement region to form a stacked structure of the third insulating layer, the second

insulating layer, the conductive layer, the first insulating layer, and a semiconductor layer over the base substrate;

patterning the semiconductor layer to form an island-shaped semiconductor layer;

forming a gate insulating layer over the island-shaped semiconductor layer;

forming a gate electrode over the gate insulating layer;

forming a first impurity region, a second impurity region, and a third impurity region; and

forming a first electrode electrically connected to the first impurity region and a second electrode electrically connected to the second impurity region,

wherein the third impurity region is provided between a channel formation region and the second impurity region.

8. The method for manufacturing a semiconductor device, according to claim 7, wherein the ion-irradiating step is performed before the step of forming the first insulating layer, after the step of forming the first insulating layer, after the step of forming the conductive layer, or after the step of forming the second insulating layer.

9. The method for manufacturing a semiconductor device, according to claim 7, further comprising the step of forming a protective insulating layer over the bond substrate,

wherein adding the ion to the bond substrate is performed through the protective insulating layer.

10. The method for manufacturing a semiconductor device, according to claim 7, wherein an impurity concentration in the third impurity region is lower than that of the second impurity region.

11. The method for manufacturing a semiconductor device, according to claim 7,

wherein an impurity concentration of each of the first impurity region and the second impurity region is higher than or equal to 1×10^{19} atoms/cm^3, and

wherein an impurity concentration of the third impurity region is higher than or equal to 5×10^{16} atoms/cm^3.

12. The method for manufacturing a semiconductor device, according to claim 7, wherein the bond substrate is a single crystal silicon substrate or a single crystal silicon carbide substrate.

13. The semiconductor device according to claim 7,

wherein the conductive layer is configured to reduce an electric field at a periphery of a bonding region when a voltage is applied between the first impurity region and the second impurity region, and

wherein the bonding region is where the channel formation region and the second impurity region are bonded to each other.

14. A semiconductor device comprising:

a base substrate having an insulating surface;

a conductive layer over the insulating surface;

an insulating layer over the conductive layer;

a semiconductor layer over the insulating layer, the semiconductor layer having a channel formation region, a first impurity region, a second impurity region, and a third impurity region provided between the channel formation region and the second impurity region;

a gate insulating layer over the semiconductor layer;

a gate electrode over the gate insulating layer;

a first electrode electrically connected to the first impurity region; and

a second electrode electrically connected to the second impurity region.

15. The semiconductor device according to claim 14, wherein the semiconductor layer is one of a single crystal silicon layer and a single crystal silicon carbide layer.

16. The semiconductor device according to claim 14,

wherein the conductive layer is configured to be held at a given potential, and

wherein the given potential is a ground potential.

17. The semiconductor device according to claim 14,

wherein an impurity concentration of each of the first impurity region and the second impurity region is higher than or equal to 1×10^{19} atoms/cm^3, and

wherein an impurity concentration of the third impurity region is higher than or equal to 5×10^{16} atoms/cm^3.

18. The semiconductor device according to claim 14, wherein a thickness of the insulating layer is less than or equal to 5 μm.

19. The semiconductor device according to claim 14, wherein the channel formation region is electrically connected to the conductive layer.

20. The semiconductor device according to claim 14,

wherein the conductive layer is configured to reduce an electric field at a periphery of a bonding region when a voltage is applied between the first impurity region and the second impurity region, and

wherein the bonding region is where the channel formation region and the second impurity region are bonded to each other.

WHAT IS CLAIMED IS:

1. A method for manufacturing a semiconductor device, comprising the steps of:

irradiating a bond substrate with an ion to form an embrittlement region in the bond substrate;

forming a first insulating layer over the bond substrate;

forming a conductive layer over the first insulating layer;

forming a second insulating layer over the conductive layer;

forming a third insulating layer over a base substrate;

attaching the second insulating layer to the third insulating layer;

heating the bond substrate and separating the bond substrate in the embrittlement region to form a stacked structure of the third insulating layer, the second insulating layer, the conductive layer, the first insulating layer, and a semiconductor layer over the base substrate;

patterning the semiconductor layer to form an island-shaped semiconductor layer;

forming a gate insulating layer over the island-shaped semiconductor layer;

forming a gate electrode over the gate insulating layer;

forming a first impurity region, a second impurity region, and a third impurity region; and

forming a first electrode electrically connected to the first impurity region and a second electrode electrically connected to the second impurity region,

wherein the third impurity region is provided between a channel formation region and the second impurity region,

wherein the conductive layer is configured to reduce an electric field at a periphery of a bonding region when a voltage is applied between the first impurity region and the second impurity region, and

wherein the bonding region is a region where the channel formation region and the second impurity region are bonded to each other.

2. The method for manufacturing a semiconductor device, according to claim 1, wherein the ion-irradiating step is performed before the step of forming the first insulating layer, after the step of forming the first insulating layer, after the step of forming the conductive layer, or after the step of forming the second insulating layer.

3. The method for manufacturing a semiconductor device, according to claim 1, further comprising the step of forming a protective insulating layer over the bond substrate,

wherein adding the ion to the bond substrate is performed through the protective insulating layer.

4. The method for manufacturing a semiconductor device, according to claim 1, wherein an impurity concentration in the third impurity region is lower than that of the second impurity region.

5. The method for manufacturing a semiconductor device, according to claim 1,

wherein an impurity concentration of each of the first impurity region and the second impurity region is higher than or equal to 1×10^{19} atoms/cm^3, and

wherein an impurity concentration of the third impurity region is higher than or equal to 5×10^{16} atoms/cm^3.

6. The method for manufacturing a semiconductor device, according to claim 1, wherein the bond substrate is a single crystal silicon substrate or a single crystal silicon carbide substrate.

7. A method for manufacturing a semiconductor device, comprising the steps of:

irradiating a bond substrate with an ion to form an embrittlement region in the bond substrate;

forming a first insulating layer over the bond substrate;

forming a conductive layer over the first insulating layer;

forming a second insulating layer over the conductive layer;

forming a third insulating layer over a base substrate;

attaching the second insulating layer to the third insulating layer;

heating the bond substrate and separating the bond substrate in the embrittlement region to form a stacked structure of the third insulating layer, the second insulating layer, the conductive layer, the first insulating layer, and a semiconductor layer over the base substrate;

patterning the semiconductor layer to form an island-shaped semiconductor

layer;

forming a gate insulating layer over the island-shaped semiconductor layer;

forming a gate electrode over the gate insulating layer; and

forming a first impurity region, a second impurity region, and a third impurity region;

wherein the third impurity region is provided between a channel formation region and the second impurity region,

wherein the conductive layer is configured to reduce an electric field at a periphery of a bonding region when a voltage is applied between the first impurity region and the second impurity region, and

wherein the bonding region is a region where the channel formation region and the second impurity region are bonded to each other.

8. The method for manufacturing a semiconductor device, according to claim 7, wherein the ion-irradiating step is performed before the step of forming the first insulating layer, after the step of forming the first insulating layer, after the step of forming the conductive layer, or after the step of forming the second insulating layer.

9. The method for manufacturing a semiconductor device, according to claim 7, further comprising the step of forming a protective insulating layer over the bond substrate,

wherein adding the ion to the bond substrate is performed through the protective insulating layer.

10. The method for manufacturing a semiconductor device, according to claim 7, wherein an impurity concentration in the third impurity region is lower than that of the second impurity region.

11. The method for manufacturing a semiconductor device, according to claim 7,

wherein an impurity concentration of each of the first impurity region and the second impurity region is higher than or equal to 1×10^{19} atoms/cm^3, and

wherein an impurity concentration of the third impurity region is higher than or equal to 5×10^{16} atoms/cm^3.

12. The method for manufacturing a semiconductor device, according to claim 7, wherein the bond substrate is a single crystal silicon substrate or a single crystal silicon carbide substrate.

13. A method for manufacturing a semiconductor device, comprising the steps of:

irradiating a bond substrate with an ion to form an embrittlement region in the bond substrate;

forming a first insulating layer over the bond substrate;

forming a conductive layer over the first insulating layer;

forming a second insulating layer over the conductive layer;

forming a third insulating layer over a base substrate;

attaching the second insulating layer to the third insulating layer;

heating the bond substrate and separating the bond substrate in the embrittlement region to form a stacked structure of the third insulating layer, the second insulating layer, the conductive layer, the first insulating layer, and a semiconductor layer over the base substrate;

patterning the semiconductor layer to form an island-shaped semiconductor layer;

forming a gate insulating layer over the island-shaped semiconductor layer;

forming a gate electrode over the gate insulating layer;

forming a first impurity region, a second impurity region, and a third impurity region;

forming a fourth insulating layer over the gate electrode; and

selectively etching the gate insulating layer and the fourth insulating layer,

wherein the third impurity region is provided between a channel formation region and the second impurity region,

wherein the conductive layer is configured to reduce an electric field at a periphery of a bonding region when a voltage is applied between the first impurity region and the second impurity region, and

wherein the bonding region is a region where the channel formation region and the second impurity region are bonded to each other.

14. The method for manufacturing a semiconductor device, according to claim 13, wherein the ion-irradiating step is performed before the step of forming the first

insulating layer, after the step of forming the first insulating layer, after the step of forming the conductive layer, or after the step of forming the second insulating layer.

15. The method for manufacturing a semiconductor device, according to claim 13, further comprising the step of forming a protective insulating layer over the bond substrate,

wherein adding the ion to the bond substrate is performed through the protective insulating layer.

16. The method for manufacturing a semiconductor device, according to claim 13, wherein an impurity concentration in the third impurity region is lower than that of the second impurity region.

17. The method for manufacturing a semiconductor device, according to claim 13,

wherein an impurity concentration of each of the first impurity region and the second impurity region is higher than or equal to 1×10^{19} atoms/cm^3, and

wherein an impurity concentration of the third impurity region is higher than or equal to 5×10^{16} atoms/cm^3.

18. The method for manufacturing a semiconductor device, according to claim 13, wherein the bond substrate is a single crystal silicon substrate or a single crystal silicon carbide substrate.