

to an external power source, and thus, high-frequency power is wasted.

[0005] In this regard, a technique has been known in which a filter is provided on a power supply line that connects a power supply terminal for a heater and an external power source so as to attenuate high-frequency power that is applied to a base and leaks from the power supply terminal for the heater to the power supply line. See, for example, Japanese Patent Laid-Open Publication Nos. 2013-175573, 2016-001688, and 2014-003179.

SUMMARY

[0006] A placing unit of an aspect of the present disclosure includes: a base to which a high-frequency power is applied; an electrostatic chuck provided on the base and including a placing region configured to place a workpiece and an outer peripheral region configured to surround the placing region; a heater provided in the placing region; a wiring layer connected to the heater and extending to the inside of the outer peripheral region; a power supply terminal connected to a contact portion of the wiring layer in the outer peripheral region; and a conductive layer provided in the outer peripheral region or in other regions along the thickness direction of the outer peripheral region so as to overlap with the power supply terminal when viewed from the thickness direction of the outer peripheral region; wherein the conductive layer is electrically insulated from other portions of the outer peripheral region.

[0006a] In another aspect of the present disclosure, there is provide a placing unit comprising a base to which a high-frequency power is applied; an electrostatic chuck provided on the base and including a placing region configured to place a workpiece, an outer peripheral region configured to surround the placing region, and a through hole that penetrates the outer peripheral region; and a conductive layer formed

in other regions along a thickness direction of the outer peripheral region so as to overlap with the through hole when viewed from the thickness direction of the outer peripheral region.

[0006b] In yet another aspect of the disclosure, there is provided a plasma processing apparatus comprising the placing unit as described herein.

[0007] The foregoing summary is illustrative only and is not intended to be in any way limiting. In addition to the illustrative aspects, embodiments, and features described above, further aspects, embodiments, and features will become apparent by reference to the drawings and the following detailed description.

BRIEF DESCRIPTION OF THE DRAWINGS

WHAT IS CLAIMED IS:

1. A placing unit comprising:
 - a base to which a high-frequency power is applied;
 - an electrostatic chuck provided on the base and including a placing region configured to place a workpiece and an outer peripheral region configured to surround the placing region;
 - a heater provided in the placing region;
 - a wiring layer connected to the heater and extending to an inside of the outer peripheral region;
 - a power supply terminal connected to a contact portion of the wiring layer in the outer peripheral region; and
 - a conductive layer formed in the outer peripheral region or in other regions along a thickness direction of the outer peripheral region so as to overlap with the power supply terminal when viewed from the thickness direction of the outer peripheral region; wherein the conductive layer is electrically insulated from other portions of the outer peripheral region.
2. The placing unit of claim 1, further comprising: a focus ring provided on the outer peripheral region,
 - wherein the conductive layer is formed in the focus ring along the thickness direction of the outer peripheral region or between the focus ring and the outer peripheral region so as to overlap with the power supply terminal when viewed from the thickness direction of the outer peripheral region.
3. The placing unit of claim 2, wherein the conductive layer is a conductive film

that covers a surface facing the peripheral region of the focus ring.

4. The placing unit of claim 1, wherein the conductive layer is formed in a ring shape including a portion overlapping with the power supply terminal and a portion not overlapping with the power supply terminal when viewed from the thickness direction of the outer peripheral region.

5. The placing unit of claim 1, wherein the conductive layer includes at least one of W, Ti, Al, Si, Ni, C, and Cu.

6. The placing unit of claim 1, wherein a plurality of the heaters are provided in the placing region,

a plurality of the wiring layers are connected to the plurality of the heaters, respectively, and extend to the inside of the outer peripheral region,

the power supply terminal is provided for each of the wiring layers and is connected to a contact portion of a corresponding wiring layer in the outer peripheral region, and

the conductive layer overlaps with a plurality of the power supply terminals when viewed from the thickness direction of the outer peripheral region.

7. The placing unit of claim 1, further comprising:

a power supply line that connects the power supply terminal and an external

power source; and

a filter provided on the power supply line and configured to attenuate a high-frequency power that is applied to the base and leaks from the power supply terminal to the power supply line.

8. The placing unit of claim 1, wherein a through hole through which a fixing member of the base penetrates is formed in the outer peripheral region, and

the conductive layer is formed in other regions along the thickness direction of the outer peripheral region so as to overlap with the through hole in addition to the power supply terminal when viewed from the thickness direction of the outer peripheral region.

9. The placing unit of claim 1, further comprising:

a through hole that penetrates the outer peripheral region; wherein

the conductive layer is formed in other regions along a thickness direction of the outer peripheral region so as to overlap with the through hole when viewed from the thickness direction of the outer peripheral region.

10. A plasma processing apparatus comprising the placing unit of claim 1.