CLAIMS

1. A sense amplifier, comprising:

an amplification module, configured to: when the sense amplifier is at an amplification stage, amplify a voltage difference between a bit line and a reference bit line; and

a controlled power module, connected to the amplification module, and configured to: determine a drive parameter according to a rated compensation voltage range between the bit line and the reference bit line, and supply power to the amplification module according to the drive parameter, so as to control the amplification module to pull a compensation voltage between the bit line and the reference bit line to be a rated compensation voltage at an offset cancellation stage; wherein the rated compensation voltage is within the rated compensation voltage range.

2. The sense amplifier according to claim 1, wherein the controlled power module comprises:

a first controlled power unit, connected to a first terminal of the amplification module, and configured to supply power to the amplification module;

a second controlled power unit, connected to a second terminal of the amplification module, and configured to supply power to the amplification module; and

a control unit, connected to the first controlled power unit, further connected to the second controlled power unit, and configured to: determine the drive parameter according to the rated compensation voltage range, and control the first controlled power unit and the second controlled power unit to supply power to the amplification module according to the drive parameter.

3. The sense amplifier according to claim 2, wherein the first controlled power unit comprises:

N first controlled current sources, wherein the first controlled current

source is provided with a control terminal, a first terminal, and a second terminal; the first terminal of the first controlled current source is connected to a first power supply terminal, the second terminal of the first controlled current source is connected to the first terminal of the amplification module, the control terminal of the first controlled current source is connected to the control unit, and N is a positive integer.

4. The sense amplifier according to claim 3, wherein the second controlled power unit comprises:

N second controlled current sources, wherein the second controlled current source is provided with a control terminal, a first terminal, and a second terminal; the first terminal of the second controlled current source is connected to a second power supply terminal, the second terminal of the second controlled current source is connected to the second terminal of the amplification module, and the control terminal of the second controlled current source is connected to the control unit.

5. The sense amplifier according to claim 4, wherein the control unit is configured to:

determine a first drive current range and a second drive current range according to the rated compensation voltage range;

select at least one first target current source in the N first controlled current sources, and select at least one second target current source in the N second controlled current sources; wherein a total current provided by the at least one first target current source is within the first drive current range, and a total current provided by the at least one second target current source is within the second drive current range; and

generate a first control signal used to control the first target current source to work, and generate a second control signal used to control the second target current source to work; such that the first controlled power unit controls the amplification module to pull voltages of the bit line and the reference bit line at the offset cancellation stage, and the second controlled power unit controls

the amplification module to pull voltages of the bit line and the reference bit line at the offset cancellation stage.

6. The sense amplifier according to claim 4 or 5, wherein a drive current of an ith first controlled current source is $2^{i-1} \times I_b$, a drive current of a jth second controlled current source is $2^{j-1} \times I_b$, and I_b represents a unit current.

7. The sense amplifier according to claims 3-5, wherein the first controlled current source is a P-type transistor, and the second controlled current source is an N-type transistor.

8. The sense amplifier according to any one of claims 2-5, wherein the amplification module comprises:

at least one cross-coupled amplifier circuit, wherein the cross-coupled amplifier circuit is provided with a first terminal, a second terminal, a third terminal, and a fourth terminal; the first terminal of the cross-coupled amplifier circuit is connected to an output terminal of the first controlled power unit, the second terminal of the cross-coupled amplifier circuit is connected to an output terminal of the second controlled power unit, the third terminal of the cross-coupled amplifier circuit is connected to the bit line, and the fourth terminal of the cross-coupled amplifier circuit is connected to the reference bit line.

9. The sense amplifier according to claim 8, wherein the cross-coupled amplifier circuit comprises: a first transistor, a second transistor, a third transistor, a fourth transistor, a first switch, a second switch, a third switch, and a fourth switch;

a first terminal of the first transistor is the first terminal of the cross-coupled amplifier circuit, a second terminal of the second transistor is the second terminal of the cross-coupled amplifier circuit, a second terminal of the first transistor is the third terminal of the cross-coupled amplifier circuit, and a second terminal of the third transistor is the fourth terminal of the cross-coupled amplifier circuit;

the second terminal of the first transistor is connected to a first terminal of

the second transistor, the second terminal of the third transistor is connected to a first terminal of the fourth transistor, the first terminal of the first transistor is connected to a first terminal of the third transistor, and the second terminal of the second transistor is connected to a second terminal of the fourth transistor;

a control terminal of the first transistor is connected to the second terminal of the third transistor, a control terminal of the second transistor is connected to the second terminal of the third transistor by the first switch, and the control terminal of the second transistor is connected to the first terminal of the second transistor by the third switch; and

a control terminal of the third transistor is connected to the second terminal of the first transistor, a control terminal of the fourth transistor is connected to the second terminal of the first transistor by the second switch, and the control terminal of the fourth transistor is connected to the first terminal of the fourth transistor by the fourth switch.

10. The sense amplifier according to claim 9, wherein the first transistor and the third transistor are P-type transistors, and the second transistor and the fourth transistor are N-type transistors.

11. A memory, comprising the sense amplifier according to any one of claims 1-10 and a memory cell, wherein

a plurality of memory cells constitute a first storage array, a plurality of memory cells constitute a second storage array, the sense amplifier is located between the first storage array and the second storage array, a third terminal of the sense amplifier is connected to a bit line of the first storage array, and a fourth terminal of the sense amplifier is connected to a reference bit line of the second storage array.

12. A control method of a sense amplifier, wherein the sense amplifier comprises an amplification module and a controlled power module; and the control method comprises:

obtaining a rated compensation voltage range between a bit line and a reference bit line;

determining a drive parameter according to the rated compensation voltage range; and

generating, according to the drive parameter, a control signal used to control the amplification module, so as to control the amplification module to pull a compensation voltage between the bit line and the reference bit line to be a rated compensation voltage at an offset cancellation stage; wherein the rated compensation voltage is within the rated compensation voltage range.

13. The control method of a sense amplifier according to claim 12, wherein the determining a drive parameter according to the rated compensation voltage range comprises:

determining a first drive current range and a second drive current range according to the rated compensation voltage range.

14. The control method of a sense amplifier according to claim 13, wherein the controlled power module comprises a first controlled power unit and a second controlled power unit;

and the generating, according to the drive parameter, a control signal used to control the amplification module comprises:

selecting at least one first target current source in N first controlled current sources, and selecting at least one second target current source in N second controlled current sources, wherein a total current provided by the at least one first target current source is within the first drive current range, and a total current provided by the at least one second target current source is within the second drive current range; and

generating a first control signal used to control the first target current source to work, and generating a second control signal used to control the second target current source to work.