

ABSTRACT

A semiconductor memory device capable of improving a read characteristic of a sense amplifier and a stored data read method are provided. The semiconductor memory device includes a sense amplifier and a controller. The sense amplifier has a first transistor that clamps a voltage of a bit line, a second transistor provided between a voltage node clamped by the first transistor and a reference voltage node, and a third transistor inserted between a charge/discharge node and the voltage node clamped by the first transistor. In a first operation mode, the controller turns on the first transistor and the second transistor and turns off the third transistor. In the second operation mode, the third transistor is turned on and in the third operation mode, the first transistor is turned on, the second transistor is turned off, the third transistor is turned on, and the fourth transistor is turned on.