# Series Negative Clipper with Positive Bias

Elementrix Classes

Series Negative Clipper with Positive Bias

❏ Sometimes it is desired to remove a small portion of positive or negative half cycles of the input AC signal. In such cases, the biased clippers are used.

❏ The construction of the series negative clipper with bias is almost similar to the series negative clipper. The only difference is an extra element called battery is used in series negative clipper with bias.
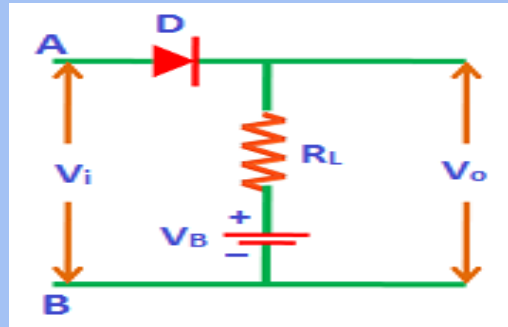
❖ During positive half cycle:


Series negative clipper with positive bias
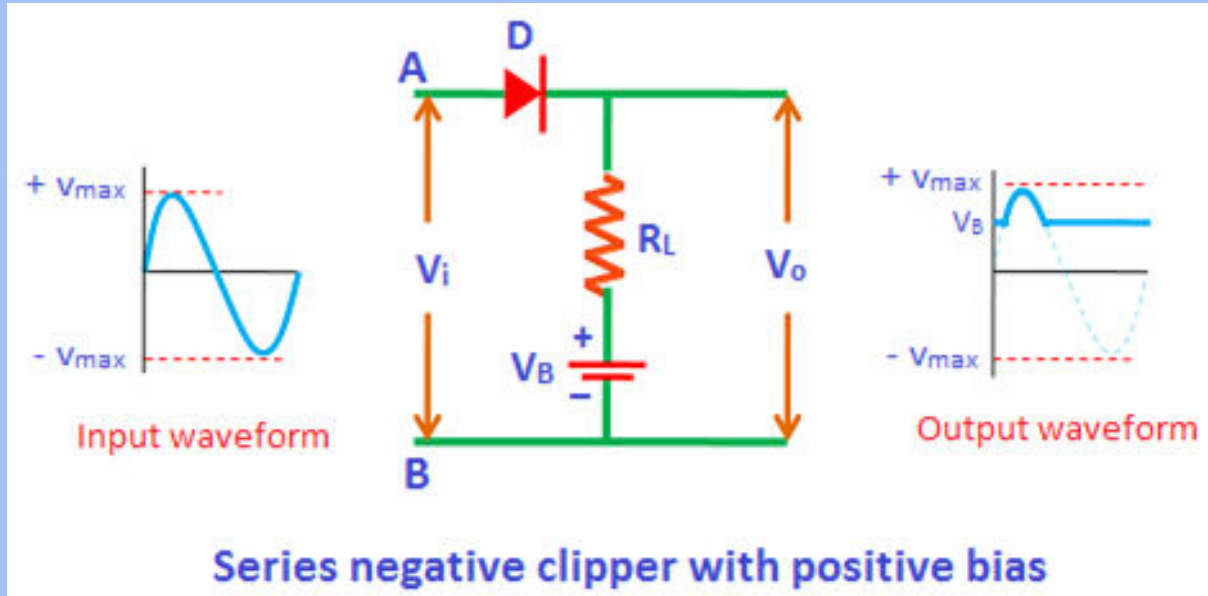
❏ During the positive half cycle, terminal A is positive and terminal B is negative. That means the positive terminal A is connected to p-side and the negative terminal B is connected to n-side.

- ❏ As we already know that if the positive terminal is connected to p-side and the negative terminal is connected to n-side then the diode is said to be forward biased. However, we are also supplying the voltage from another source called battery. As shown in the figure, the positive terminal of the battery is connected to n-side and the negative terminal of the battery is connected to p-side of the diode.

- ❏ That means the diode is forward biased by input supply voltage Vi and reverse biased by battery voltage V_B. Initially, the battery voltage is greater than the input supply voltage. Hence, the diode is reverse biased and does not allow electric current. Therefore, no signal appears at the output.

❏ When the input supply voltage V_i becomes greater than the battery voltage V_B, the diode is forward biased and allows electric current. As a result, the signal appears at the output.

❖ During negative half cycle:

Series negative clipper with positive bias
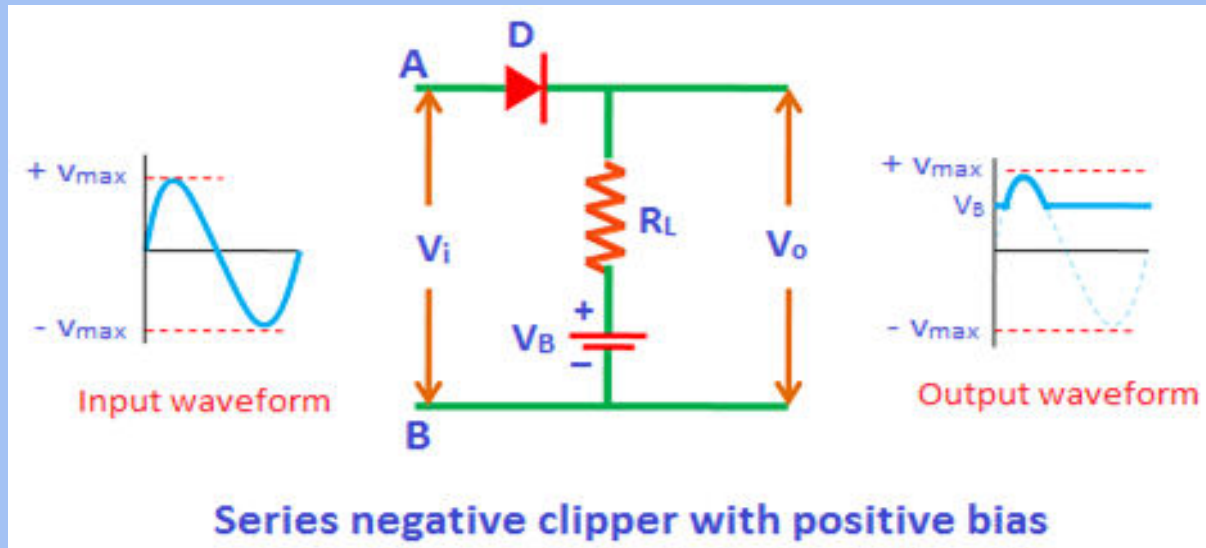
❏ During the negative half cycle, the diode is reverse biased by both input supply voltage V_i and battery voltage V_B. So it doesn't matter whether the input supply voltage is greater or less than the battery voltage V_B, the diode always remains reverse biased. Therefore, during the negative half cycle, no signal appears at the output.

पढ़िए और पढ़ाइये

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