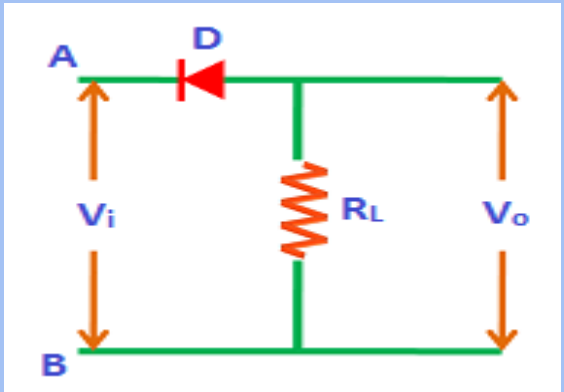
SUBJECT: BASIC ELECTRONICS

Series Positive Clipper

Elementrix Classes

Series Positive Clipper

- In series positive clipper, the positive half cycles of the input AC signal is removed.

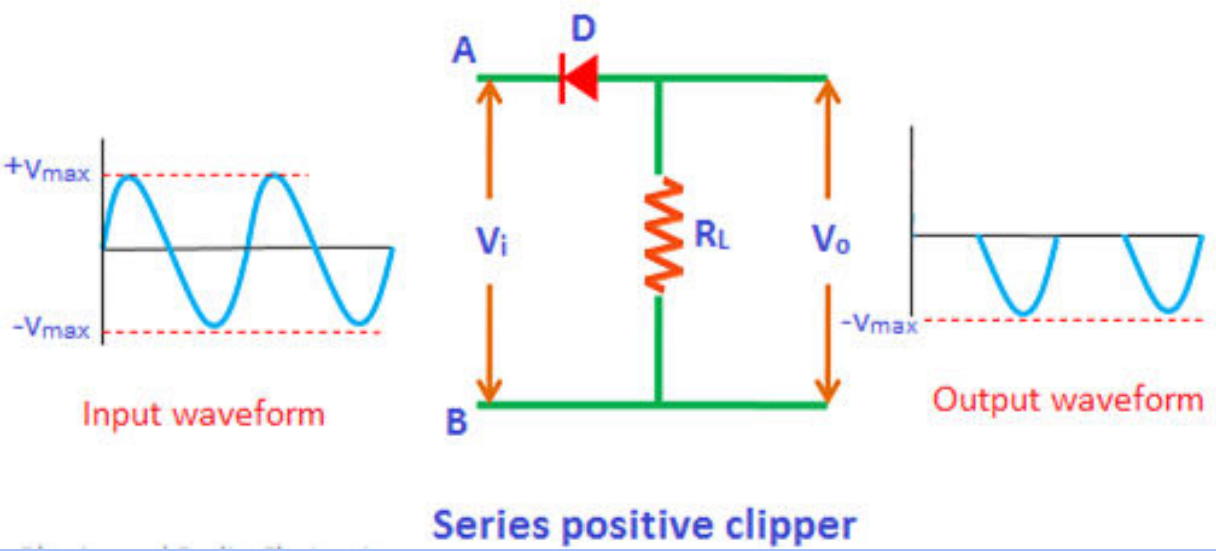


- If the diode is arranged in such a way that the arrowhead of the diode points towards the input and the diode is in series with the output load resistance, then the clipper is said to be a series positive clipper.

- In the circuit diagram, the diode D is connected in series with the output load resistance R_L and the arrowhead of the diode is pointing towards the input. So the circuit is said to be a series positive clipper.

The vertical line in the diode symbol represents the cathode (n-side) and the opposite end represents the anode (p-side).

❖ During positive half cycle:

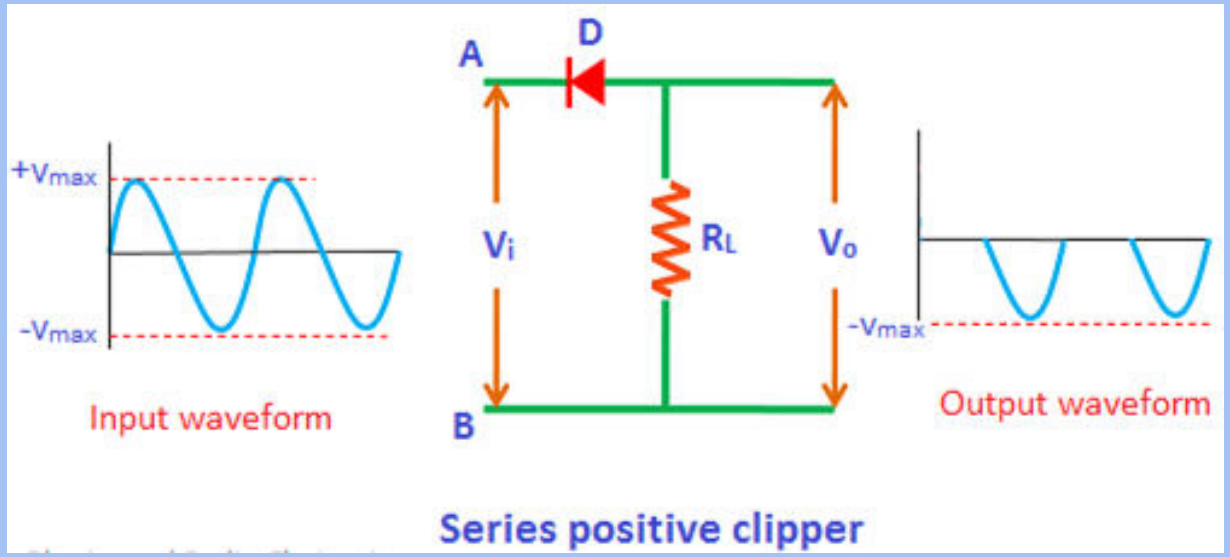


- During the positive half cycle, terminal A is positive and terminal B is negative. That means the positive terminal A is connected to n-side and the negative terminal B is connected to p-side of the diode.

- As we already know that if the positive terminal is connected to n-side and the negative terminal is connected to p-side then the diode is said to be reverse biased. Therefore, the diode D is reverse biased during the positive half cycle.

- During reverse biased condition, no current flows through the diode. So the positive half cycle is blocked or removed at the output.

❖ During negative half cycle:



❑ During the negative half cycle, terminal A is negative and terminal B is positive. That means the negative terminal A is connected to n-side and the positive terminal B is connected to p-side of the diode.

- As we already know that if the negative terminal is connected to n-side and the positive terminal is connected to p-side then the diode is said to be forward biased. Therefore, the diode D is forward biased during the negative half cycle.

- During forward biased condition, electric current flows through the diode. So the negative half cycle is allowed at the output.

- Thus, a series of positive half cycles are completely removed at the output.

- We know that a clipper either clips a portion of half cycle or clips a complete half cycle. In this case, complete half cycles are removed.

- Thus, a series positive clipper removes the series of positive half cycles.

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