

Single pulse rectifier

The circuit is represented by a system model implementing the equations:

$$v_D = f(i_D)$$

$$v_L = v_{in} - v_D - v_R$$

$$v_R = Ri$$

$$i = \frac{1}{L} \int v_L dt$$

The diode is modeled as a piecewise linear resistor whose resistance is small when the diode is on ($i \geq 0$), and large when off ($i < 0$).

