

Single-phase rectifier circuit

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

$$i_D = f(v_D)$$

$$v_D = v_{in} - v_{out}$$

$$i_C = i_D - \frac{V_{out}}{R}$$

$$v_{out} = \frac{1}{C} \int i_C dt$$

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

