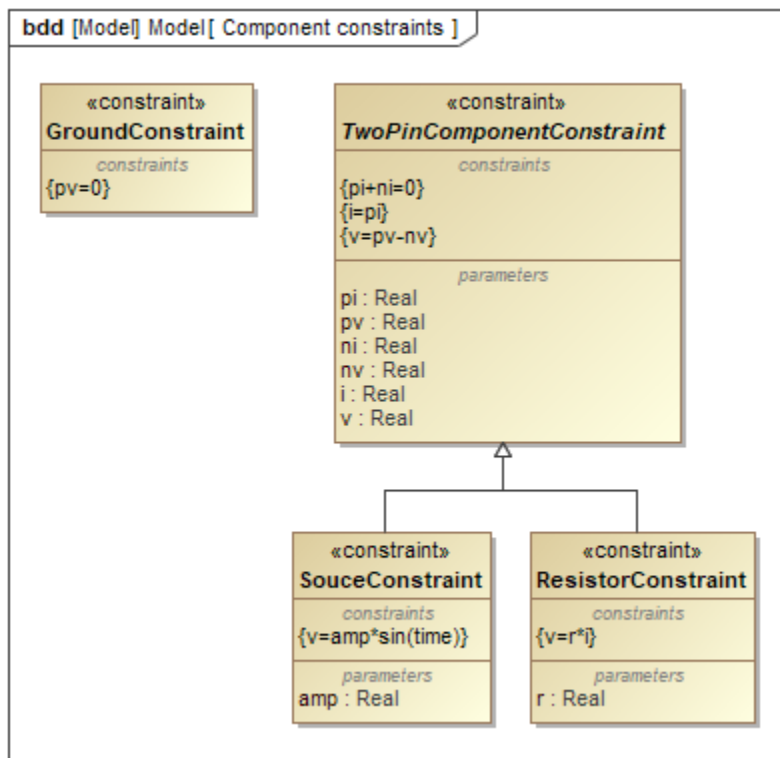


# Component Behavior

Now that the variables and parameters are defined, the behavior of each block can be specified. To do so, equations are used to establish the relationships among different properties.

In SysML, these equations are represented as constraints within *ConstraintBlocks*. Their parameters correspond to the *PhSVariables* and *PhSConstant* of the blocks ("i", "v", "r") as well as the *PhSVariables* present in the type of the ports ("pv", "pi", "nv", "ni"). Refer to the image below to see how these constraints are represented in a [Block Definition Diagram \(BDD\)](#).

An abstract ConstraintBlock *TwoPinComponentConstraint* is created to gather parameters and equations common to the source and the resistor. These equations state that the voltage of the component is the difference between the voltage in the positive pin and the voltage in the negative pin. The current of the component is the current coming from the positive pin, and the current in the two pins must add up to zero. As for the ground, the constraint states that the voltage in the pin is zero.



Constraint Blocks with specified parameters and equations in BDD.

Related page:

- [Constraint properties and bindings](#)