

SPICE Simulation of a Rectifier Circuit (diodes)

A diode is specified by using two command lines. The first line defines the diode element line and the second one is the diode model.

Element line:

Dname N+ N- MODName

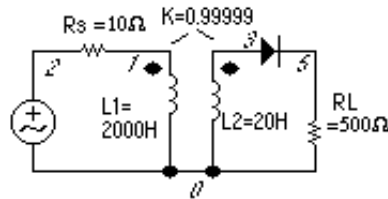
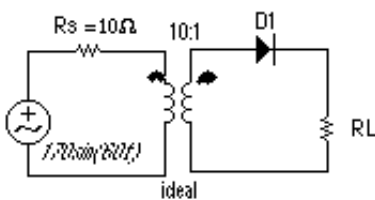
The element name start with D to indicate that the element is a diode, N+ and N- are the two node numbers and MODName is the name of the model of the diode which is specified in the model line.

Model line: .

MODEL MODName D (IS=value N=value)

MODName is the same name as in the element line. D indicate the the model is a diode (as opposed to a transistor), and IS is the saturation current IS and N is the ideality factor.

Lets simulate the following rectifier circuit to illustrate this. The diodes have a $IS=0.01\text{pA}$ and $n=1$.



```
rectifier example
vin 2 0 sin(0 170 60 0 0)
r1 5 0 500
rs 2 1 10
L1 1 0 2000
L2 3 0 20
K1 L1 L2 0.99999
D1 3 5 mod1
.model mod1 D (IS=1e-14, n=1)
.tran 0.2m 20m
.plot tran v(3), v(5)
.end
```

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Created Sept. 30, 1995; Updated Aug. 1, 1995