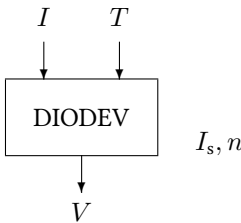


Block DIODEV

The DIODEV block calculates the voltage of a diode as a function of current and temperature.



Name	DIODEV
Function	se0021
Inputs	2
Outputs	1
Parameters	2
Strings	0
Group	S

Inputs

- 1 Current I / A
- 2 Temperature T / °C

Outputs

- 1 Voltage V / V

Parameters

- 1 Saturation current I_s / A
- 2 Emission coefficient n

Strings

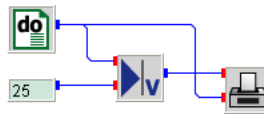
None

Description The diode voltage is given by

$$V = \frac{nkT}{q} \ln \left(1 + \frac{I}{I_s} \right)$$

where k is the Boltzmann constant and q the elementary charge.

diodev.vseit



A **DO** block varies current from 0.01 to 10 A in steps of 0.01 A. A **CONST** block is used to set the diode temperature to 25 °C. For a diode saturation current of 10^{-12} A and an emission coefficient of 1 the **PLOT** block displays the diode's voltage-current characteristic.

