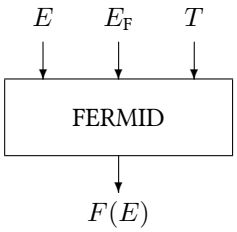
Block FERMID

The FERMID block calculates the Fermi-Dirac probability that a given energy level is occupied or not.





Name	FERMID
Function	se0006
Inputs	3
Outputs	1
Parameters	0
Strings	0
Group	S

Inputs

1 Energy E / eV
2 Fermi energy E_F / eV
3 Temperature T / K

Outputs

1 Fermi-Dirac probability that energy level E is occupied

Parameters

None

Strings

None

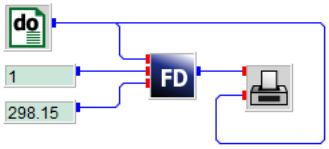
Description

The Fermi-Dirac distribution is defined by

$$f(E) = \left(1 + \exp\left(\frac{E - E_{\mathrm{F}}}{kT}\right)\right)^{-1}$$

where k is the Boltzmann constant.

fermid.vseit



A DO block varies energy from 0.8 to 1.2 eV in steps of 0.01 eV. For a Fermi energy of 1 eV and a temperature of 298.15 K, both set by two CONST blocks the calculated Fermi-Dirac distribution is plotted by the PLOT block.

