Block PVA2C

The PVA2C block calculates the photocurrent parameters of the two-diode model from the short-cicuit current at standard test conditions and its temperature coefficient.



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Function	se0033
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Group	C

Inputs

None

Outputs

1 Coefficient c_{ph}
2 Coefficient c_t

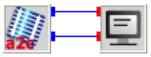
Parameters

1 Short-circuit current at STC / A
2 Temperature coefficient of short-circuit current α_I / $\mathrm{A\,K^{-1}}$.
3 Single cell area / $\mathrm{m^2}$
4 Number of cells in parallel

Strings

None

pva2c.vseit



For a short-circuit current of 8.4 A and its temperature coefficient α_I = 0.0042 A/K at standard test conditions – as usually provided on a data sheet of a PV module – the PVA2C block converts these data to the model parameters required by the PVI and PVV blocks, for instance.

The single cell area is assumed to be 0.026 m^2 with one cell in parallel. The number of cells in series has no influence on the calculations here.

The SCREEN block is used to show the results.

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0.27491421  0.00016154
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so that the photocurrent density is given by

$$i_{\mathrm{ph}} = (0.27491421 + 0.00016154\,T)\;G$$

where T is the module temperature in kelvin and G the gobal irradiance in the module's plane given in W/m^2.

See also Blocks PVI, PVV, PVDET1, PVFIT2.