

Device Modeling Report

Components: Solar Cell

Product Name:SX305

Manufacture:BP Solar

Kawatta-



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OverView

This report shows LTspice simulation results of SX305 characteristics from datasheet.

I-V and P-V characteristics work in STC condition of datasheet.

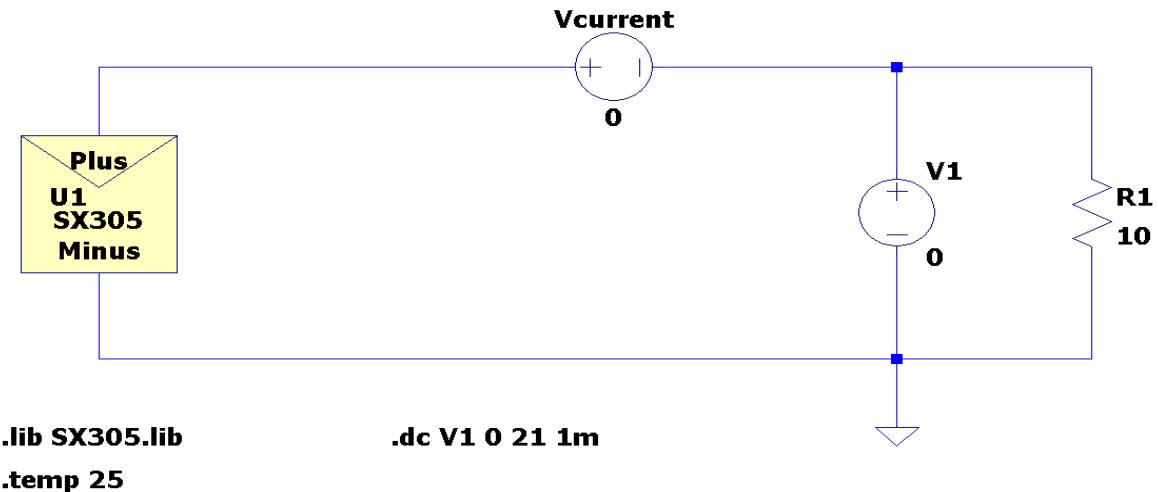
*STC is Irradiance 1000W/m², AM1.5 spectrum, module temperature 25°C

*This model only works at 25°C of LTspice setting and works voltage from 0V – 20.5V

Specification of electrical performance form datasheet (STC)

Parameter	Value
Maximum Power (Pmax)	4.5W
Maximum Power Voltage (Vmpp)	16.5V
Maximum Power Current (Impp)	0.27A
Open Circuit Voltage (Voc)	20.5V
Short Circuit Current (Isc)	0.3A

Simulation Circuit



*Vcurrent works as Ammeter.

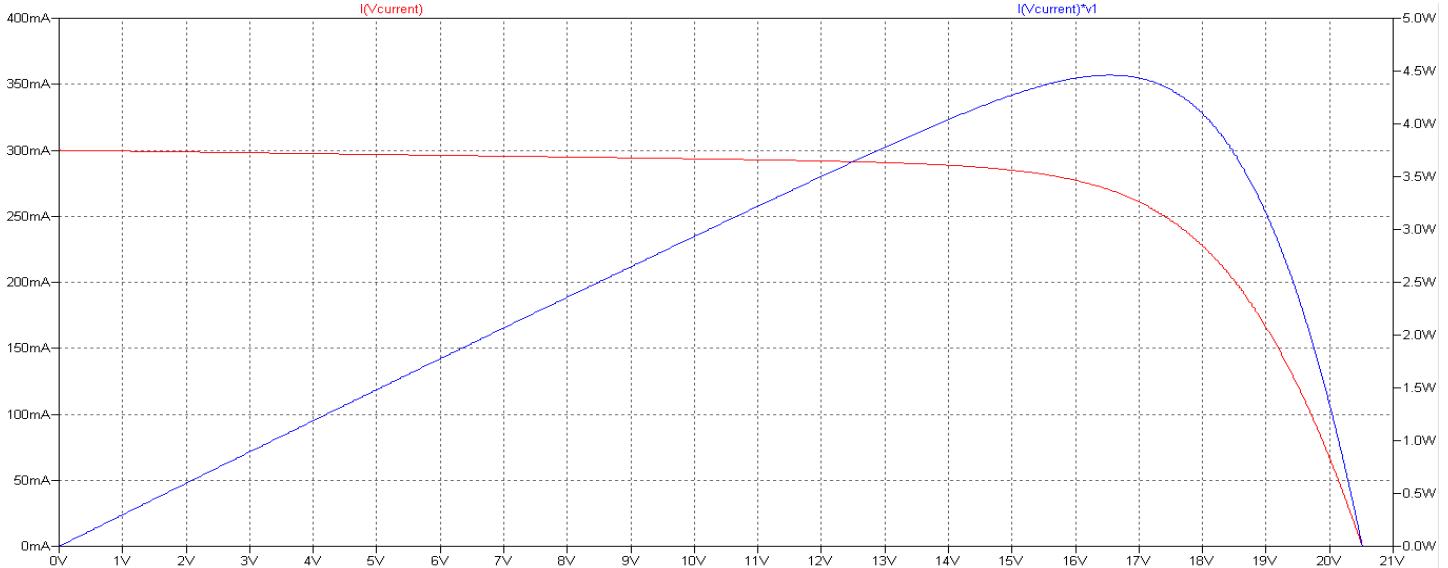
*V1 works as source of dc sweep of SX305(0V- 21V).

(*This model works from voltage 0V – 20.5V)

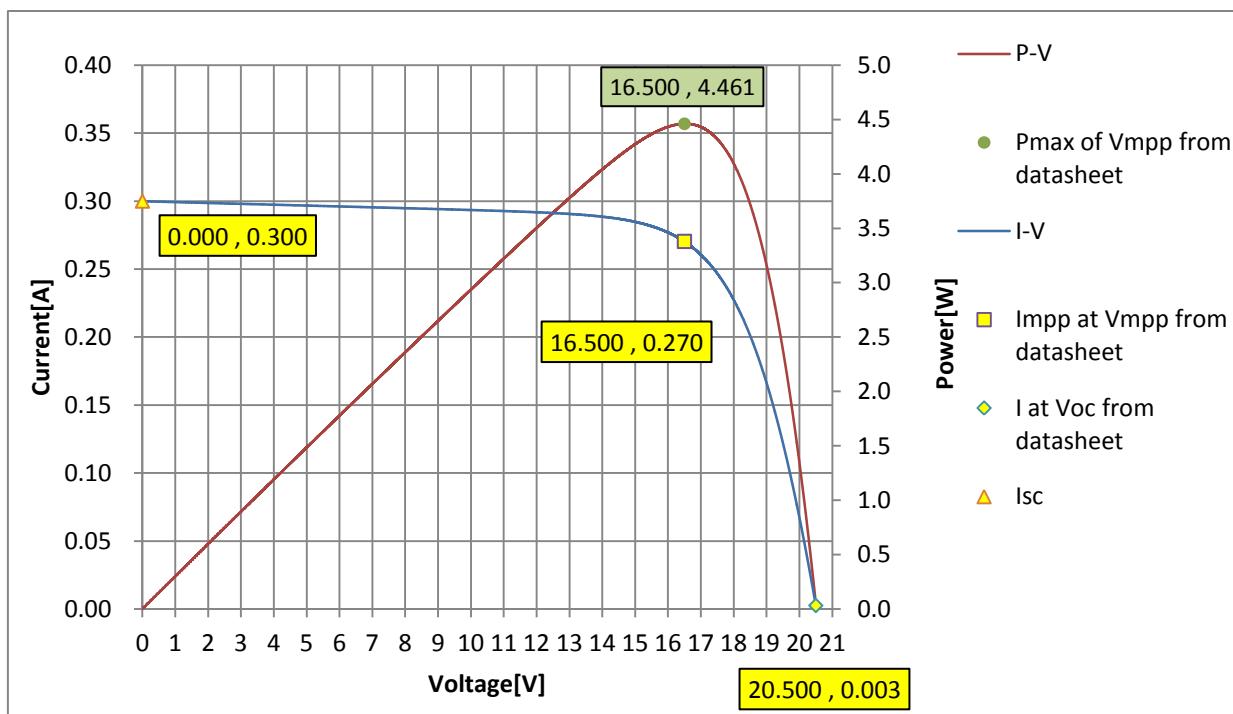
*R1 is load resistance (arbitrary value, EX:10Ω).

*“.temp” works as temperature in STC(25°C)

Simulation result



Results of applied to voltage value of datasheet(Electrical performance in STC)



Error between specification and Simulation.

Symbol	Specification	Simulation	%Error
Isc	0.300	0.300	0.000%
Voc	20.500	20.518	0.088%
Vmpp	16.500	16.524	0.145%
Impp ^{※1}	0.270	0.270	-0.014%
Pmax(Impp*Vmpp)	4.455	4.461	0.131%

※1 小数点第4位を四捨五入のため値は同一となります。