

Device Modeling Report

Components: Solar Cell

Product Name:SP100

Manufacture:AIPER

Kawatta-



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OverView

This report shows LTspice simulation results of SP100 characteristics from datasheet.

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

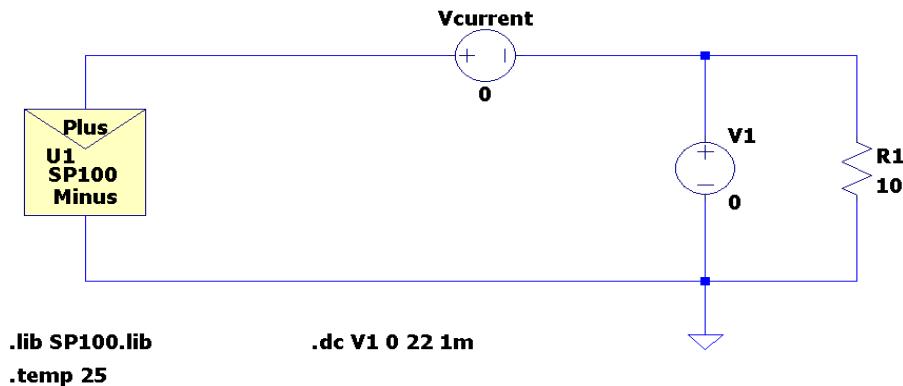
*STC is Irradiance 1000W/m², AM1.5 spectrum, module temperature 25°C

*This model only works at 25°C of LTspice setting and works voltage from 0V – 21.6V

Specification of electrical performance form datasheet (STC)

Parameter	Value
Maximum Power (Pmax)	100W
Maximum Power Voltage (Vmpp)	18V
Maximum Power Current (Impp)	5.56A
Open Circuit Voltage (Voc)	21.6V
Short Circuit Current (Isc)	6.05A

Simulation Circuit



*Vcurrent works as Ammeter.

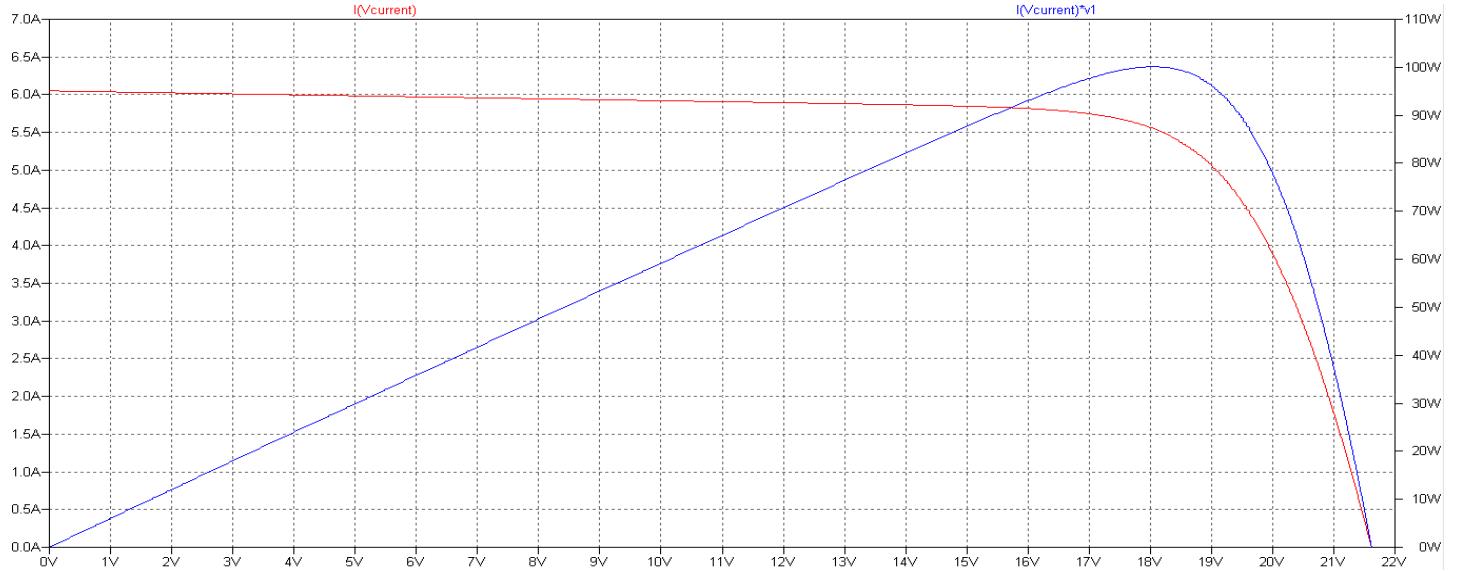
*V1 works as source of dc sweep of SP100(0V- 22V).

(*This model works from voltage 0V – 21.6V)

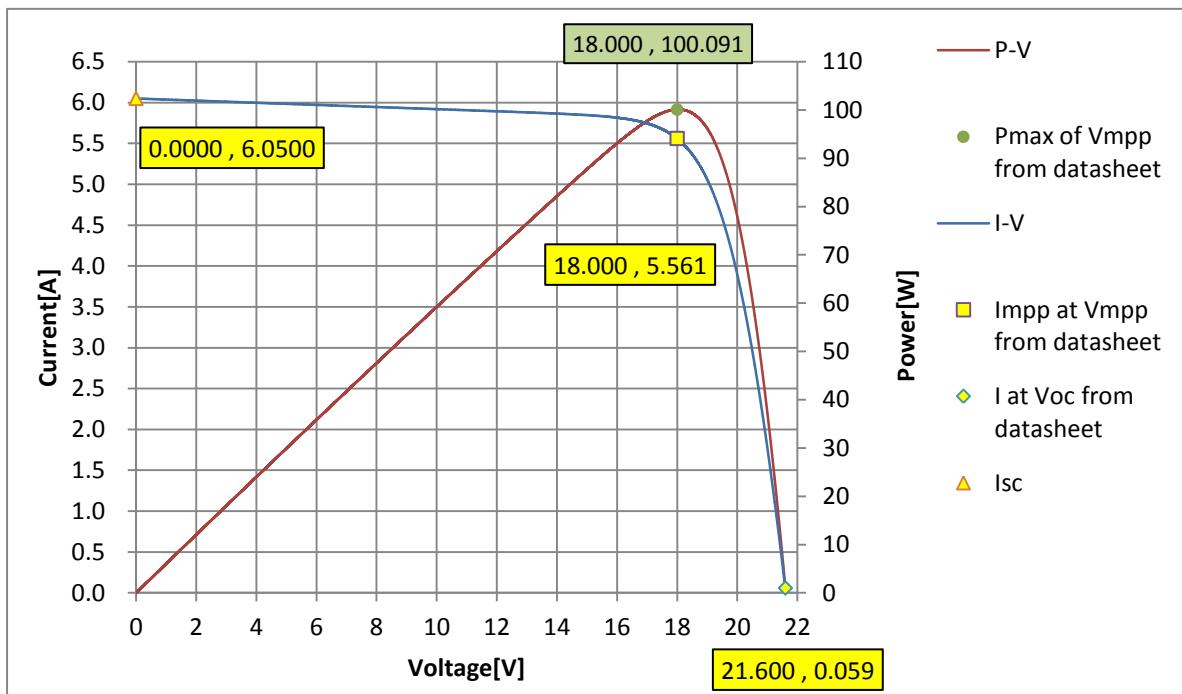
*R1 is load resistance (arbitrary value, EX:10Ω).

*“.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	6.050	6.050	0.000%
Voc	21.600	21.619	0.088%
Vmpp	18.000	18.037	0.206%
Impf	5.556	5.549	-0.110%
Pmax(Impf*Vmpp)	100.000	100.096	0.096%

change history

DATE	DATAILS
2020/12/28	Manufacture Name : Before…APIER After…AIPER