

Device Modeling Report

Components: Solar Cell

Product Name:SP160

Manufacture:AIPER

Kawatta-



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OverView

This report shows LTspice simulation results of SP160 characteristics from datasheet.

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

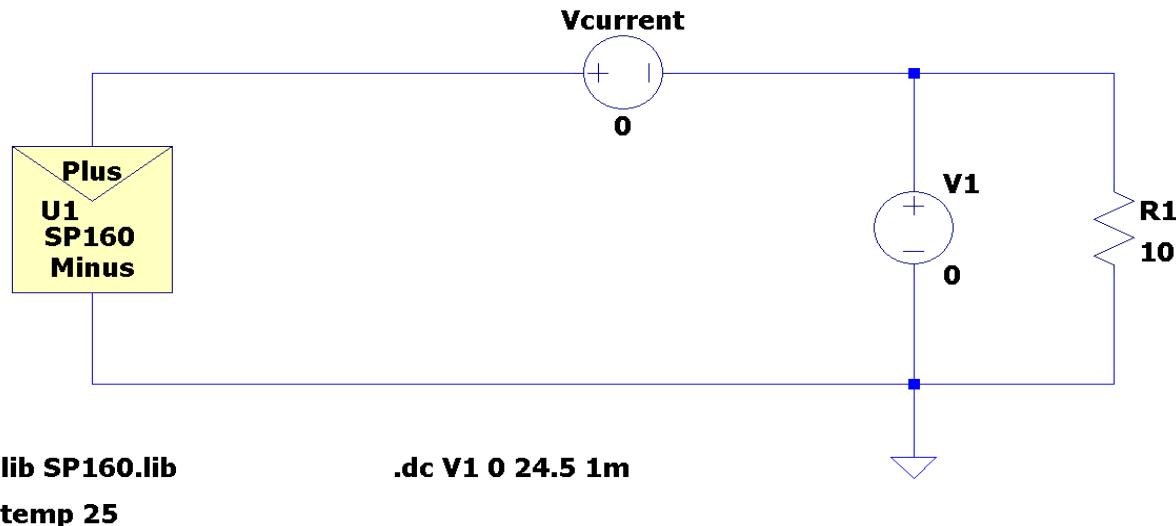
*STC is Irradiance 1000W/m², AM1.5 spectrum, module temperature 25°C

*This model only works at 25°C of LTspice setting and works voltage from 0V – 24V

Specification of electrical performance form datasheet (STC)

Parameter	Value
Maximum Power (Pmax)	160W
Maximum Power Voltage (Vmpp)	18.5V
Maximum Power Current (Impp)	8.60A
Open Circuit Voltage (Voc)	24V
Short Circuit Current (Isc)	9.20A

Simulation Circuit



*Vcurrent works as Ammeter.

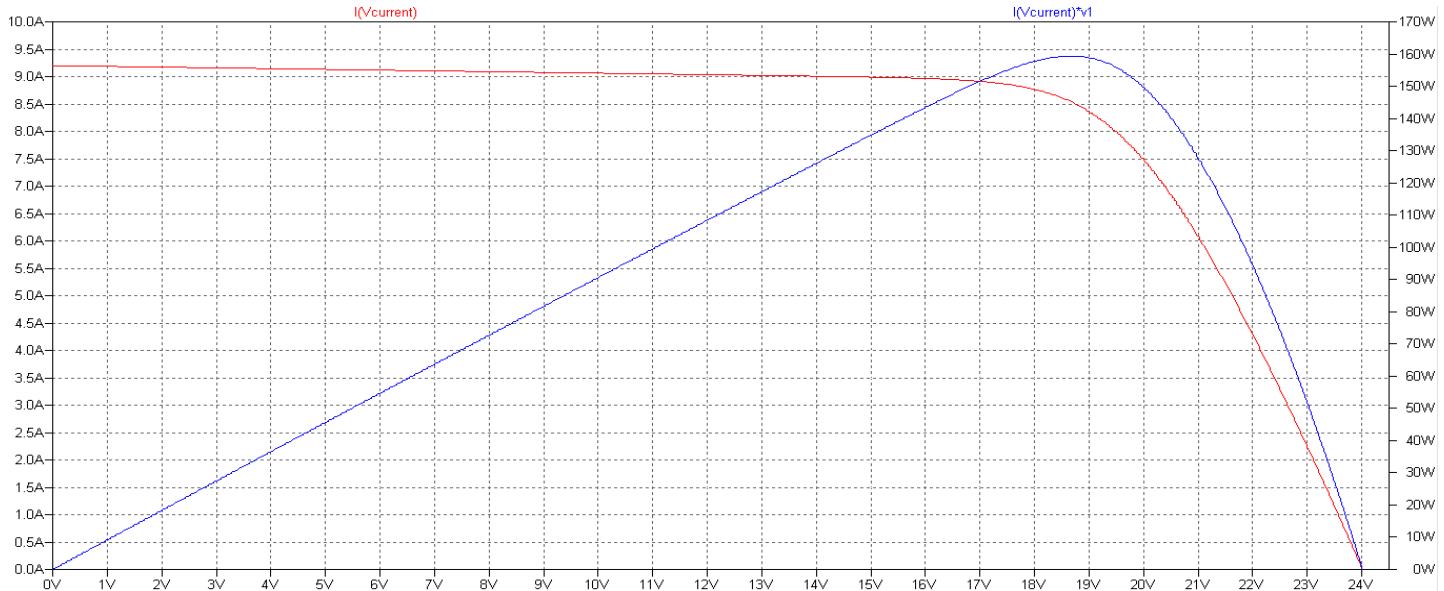
*V1 works as source of dc sweep of SP160(0V- 24.5V).

(*This model works from voltage 0V – 24V)

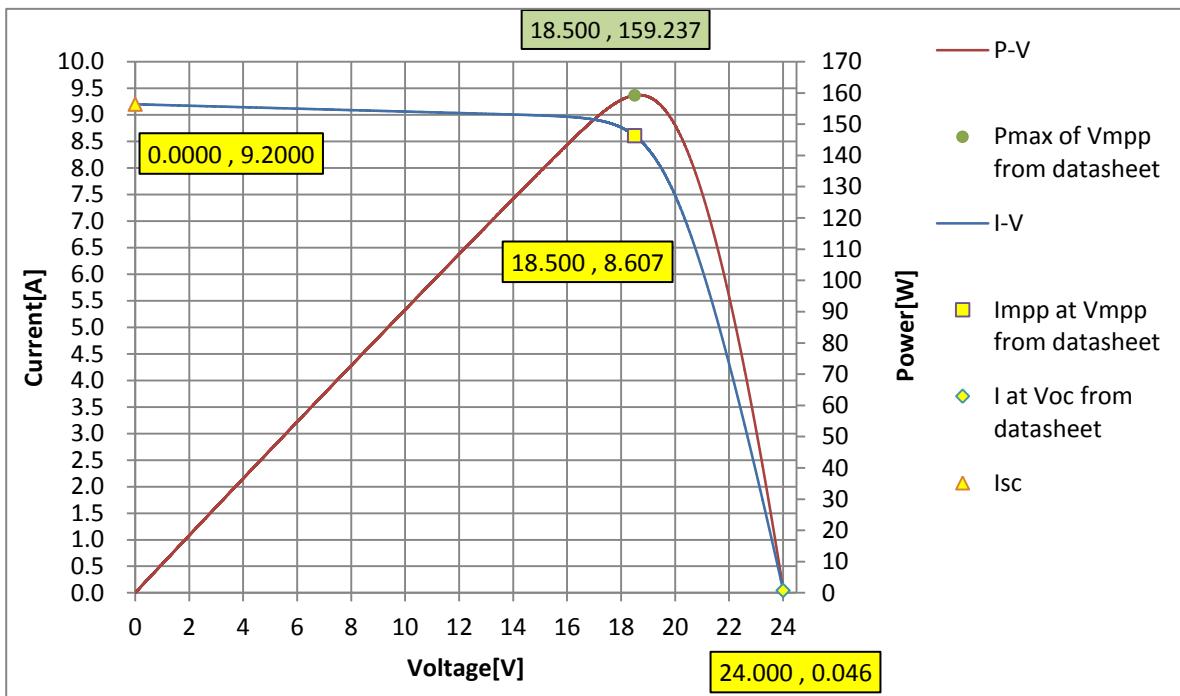
*R1 is load resistance (arbitrary value, EX:10Ω).

*“.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	9.200	9.200	0.000%
Voc	24.000	24.020	0.083%
Vmpp	18.500	18.654	0.832%
Impp	8.600	8.542	-0.678%
Pmax(Impp*Vmpp)	159.100	159.337	0.149%

change history

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