

Device Modeling Report

Components: Solar Cell

Product Name:XINPUGUANG_100W

Manufacture:XINPUGUANG

Kawatta-



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Overview

This report shows LTspice simulation results of XINPUGUANG_100W characteristics from datasheet. I-V and P-V characteristics work in condition of datasheet.

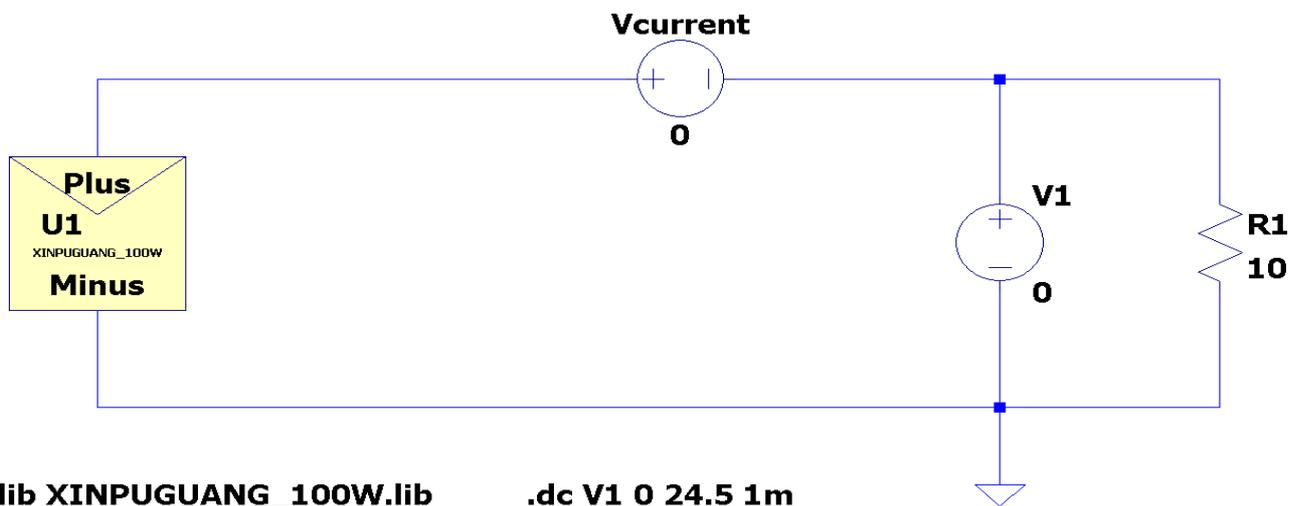
*STC is Irradiance 1000W/m², AM1.5 spectrum, module temperature 25°C

*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)	100W
Maximum Power Voltage (Vmpp)	20V
Maximum Power Current (Impp)	5.0A
Open Circuit Voltage (Voc)	24V
Short Circuit Current (Isc)	5.5A

Simulation Circuit



.lib XINPUGUANG_100W.lib

.dc V1 0 24.5 1m

.temp 25

*Vcurrent works as Ammeter.

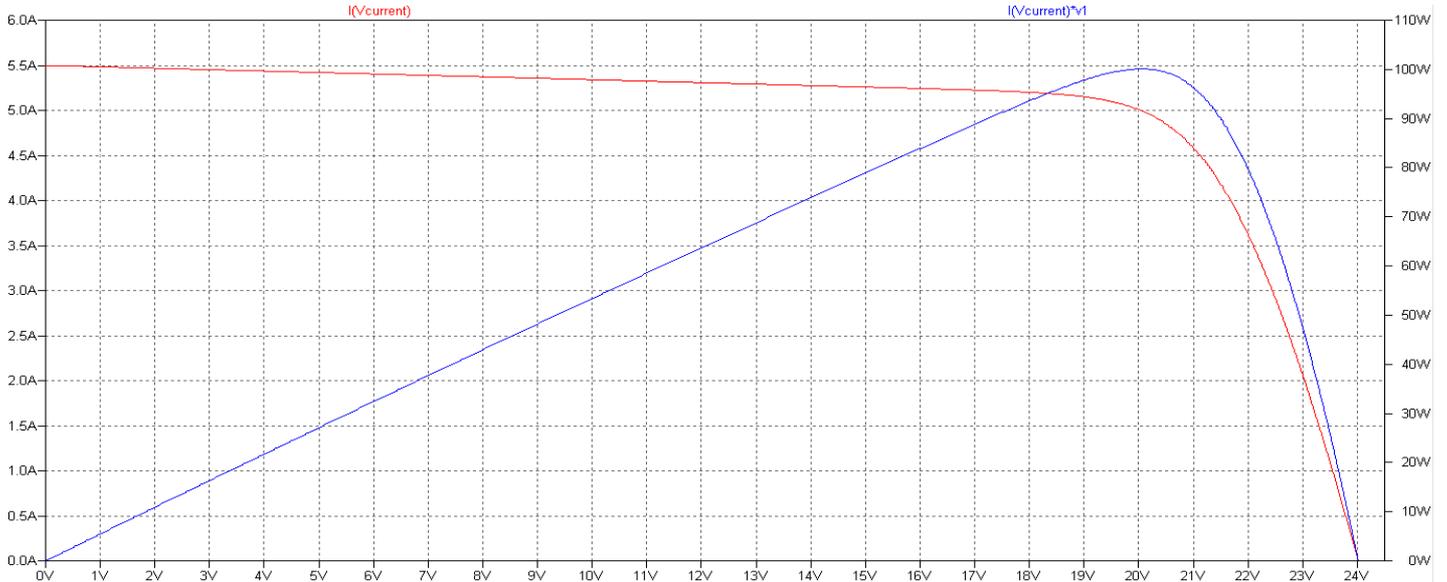
*V1 works as source of dc sweep of XINPUGUANG_100W(0V- 24.5V).

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

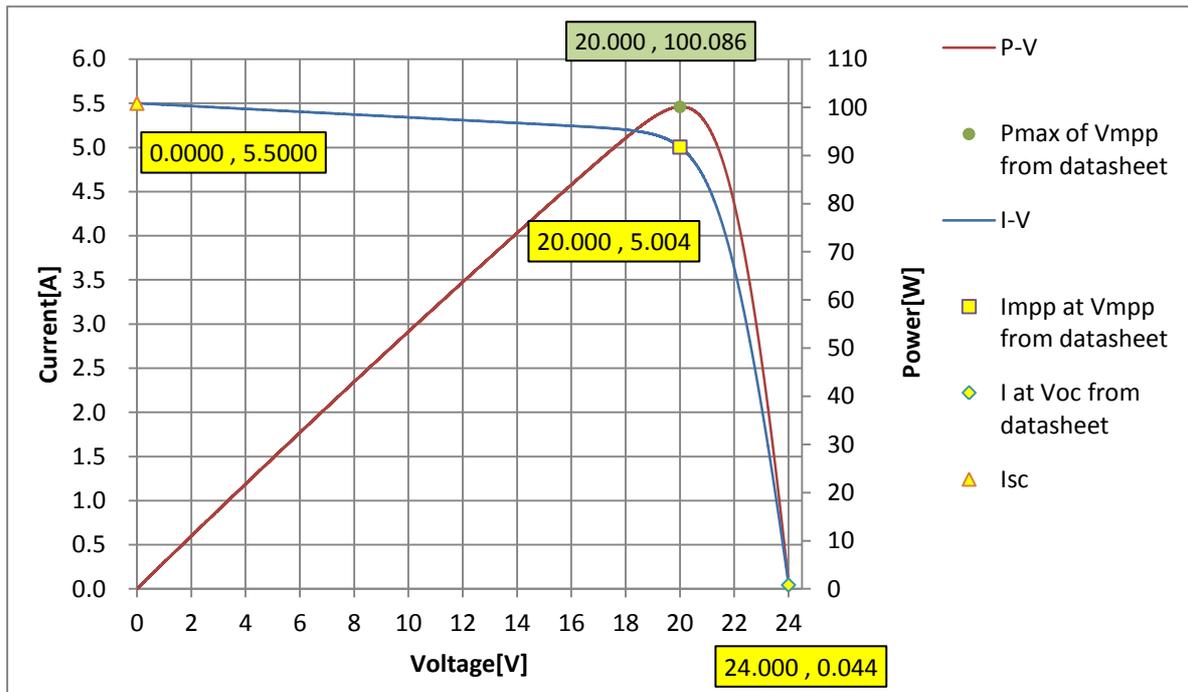
*R1 is load resistance (arbitrary value, EX:10Ω).

*“.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	5.500	5.500	0.000%
Voc	24.000	24.020	0.083%
Vmpp	20.000	20.037	0.185%
Impp	5.000	4.995	-0.094%
Pmax(Impp*Vmpp)	100.000	100.091	0.091%