

Device Modeling Report

Components: Solar Cell
Product Name:KK285P-5CD3CG
Manufacture: KYOCERA

Kawatta-



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Overview

This report shows LTspice simulation results of KK285P-5CD3CG characteristics from datasheet.

I-V and P-V characteristics work in JIS C 8990 condition of datasheet.

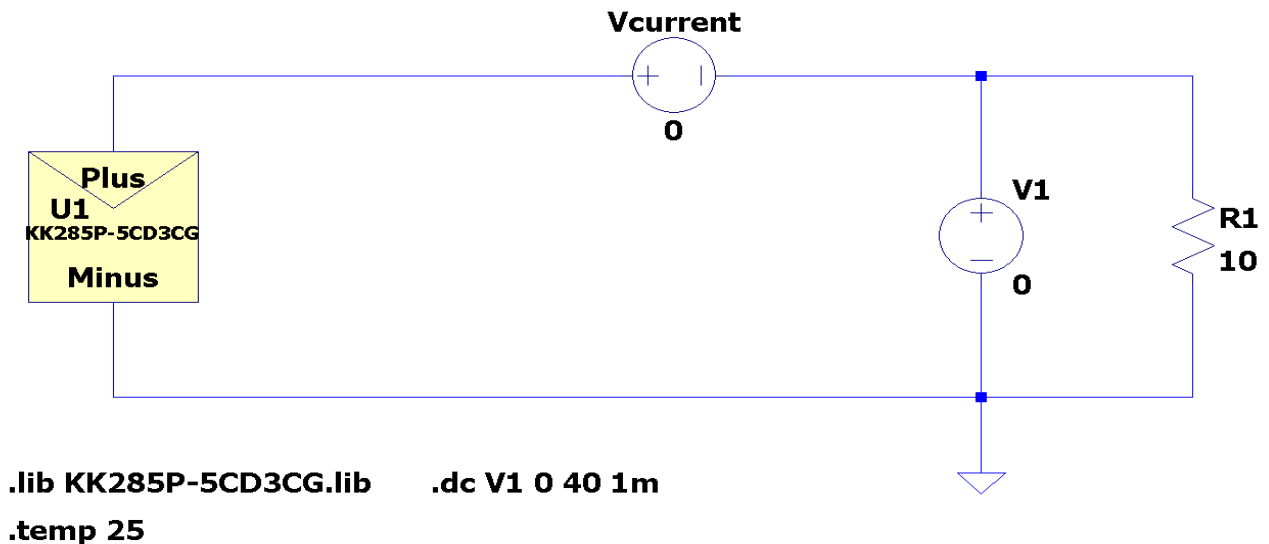
*JIS C 8990 is Irradiance 1000W/m², AM1.5 spectrum, module temperature 25°C

*This model only works at 25°C of LTspice setting and works voltage from 0V – 39.1V

Specification of electrical performance form datasheet (JIS C 8990)

Parameter	Value
Maximum Power (Pmax)	285W
Maximum Power Voltage (Vmpp)	31.5V
Maximum Power Current (Impp)	9.05A
Open Circuit Voltage (Voc)	39.1V
Short Circuit Current (Isc)	9.58A

Simulation Circuit



*Vcurrent works as Ammeter.

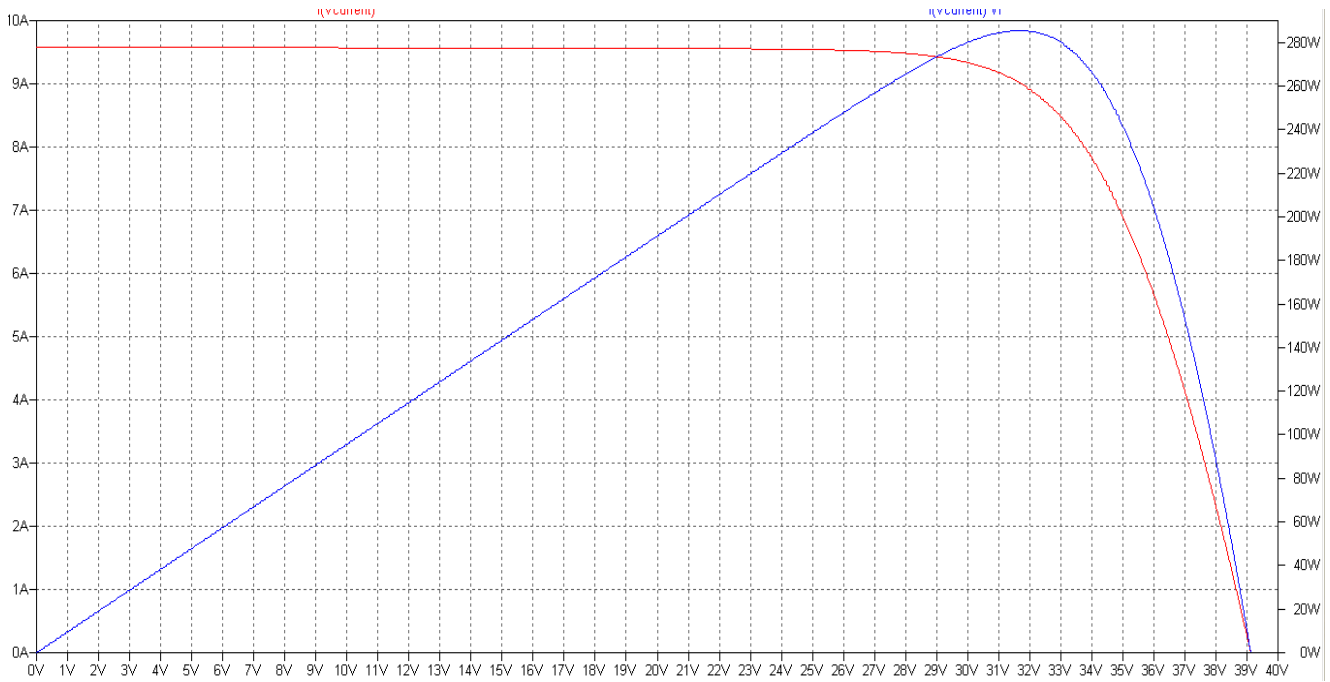
*V1 works as source of dc sweep of KK285P-5CD3CG(0V- 40.0V).

(*This model works from voltage 0V – 39.1V)

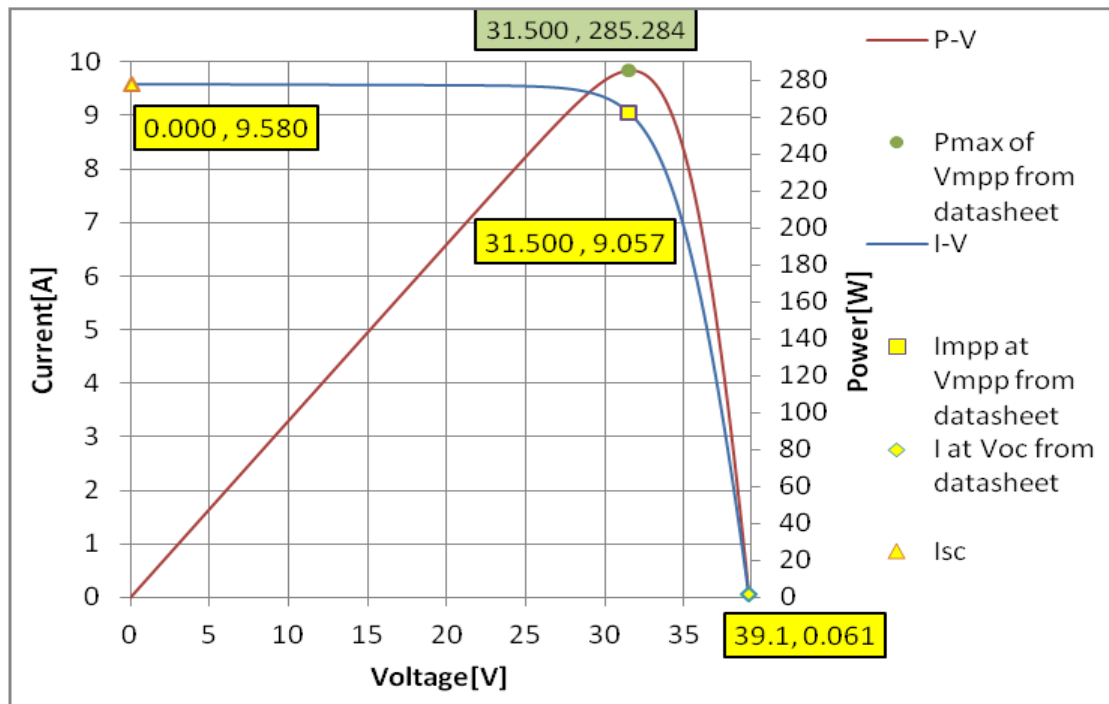
*R1 is load resistance (arbitrary value, EX:10Ω).

*“.temp” works as temperature in JIS C 8990(25°C)

Simulation result



Results of applied to voltage value of datasheet(Electrical performance in JIS C 8990)



Error between specification and Simulation.

Symbol	Specification	Simulation	%Error
Isc	9.580	9.580	0.000%
Voc	39.100	39.127	0.069%
Vmpp	31.500	31.657	0.498%
Impp	9.050	9.014	-0.402%
Pmax(Impp*Vmpp)	285.075	285.343	0.094%