Device Modeling Report

Components: Solar Cell

Product Name:KK250P-5CG3CG, KK250P-5CJ2CG

Manufacture: KYOCERA

Kawatta-

OverView

This report shows LTspice simulation results of KK250P-5CG3CG and KK250P-5CJ2CG 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 – 34.6V

*This model name of LTspice is only KK250P-5CG3CG, but also uses KK250P-5CJ2CG.

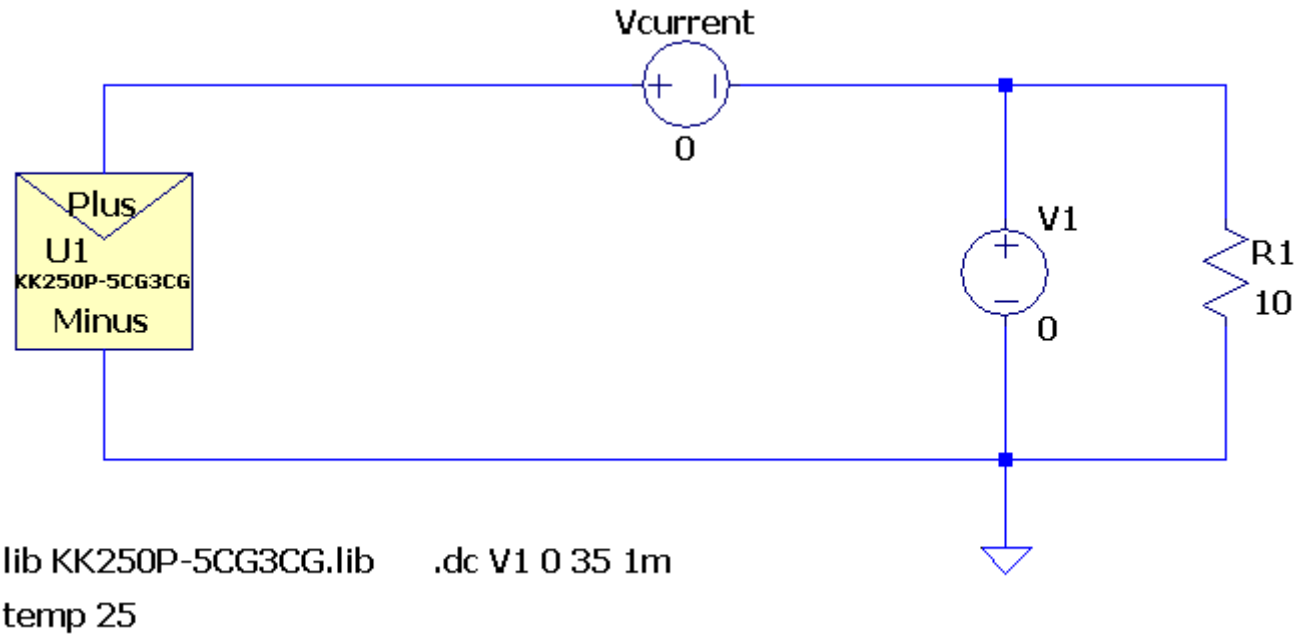
(Specification of electrical performance is same)

Specification of electrical performance from datasheet (JIS C 8990)

Parameter	Value
Maximum Power (Pmax)	250W
Maximum Power Voltage (Vmpp)	28.2V
Maximum Power Current (Impp)	8.87A
Open Circuit Voltage (Voc)	34.6V
Short Circuit Current (Isc)	9.47A

Simulation Circuit

This model also uses KK250P-5CJ2CG.



*Vcurrent works as Ammeter.

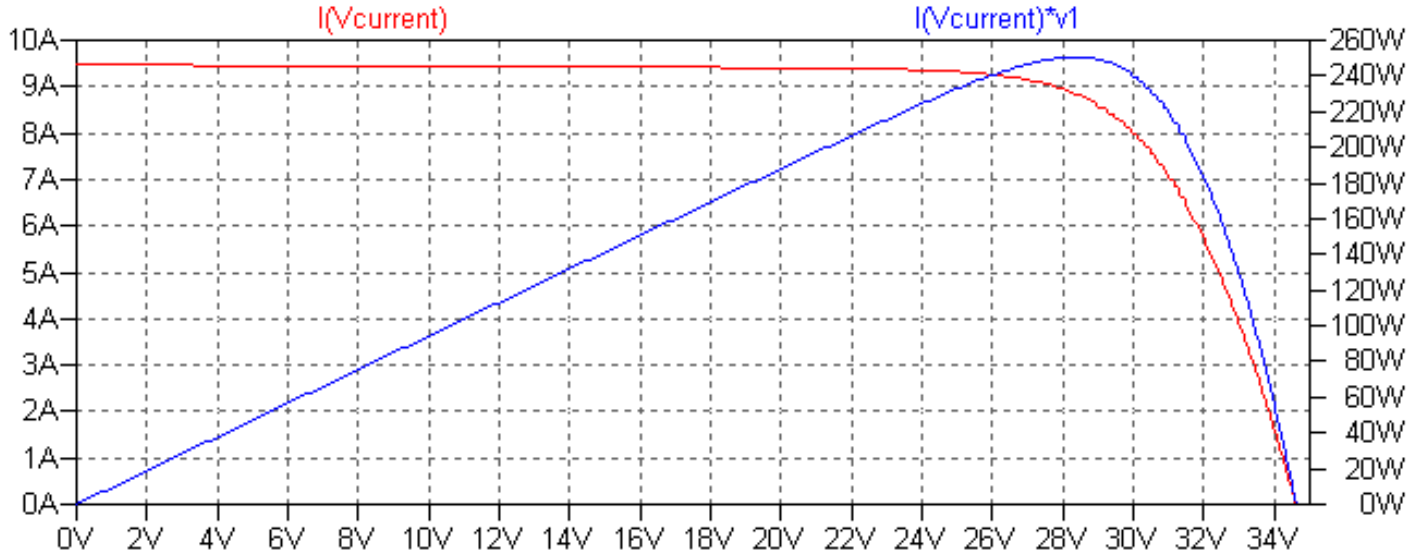
*V1 works as source of dc sweep of KK250P-5CG3CG (0V- 35V).

(*This model works from voltage 0V – 34.6V)

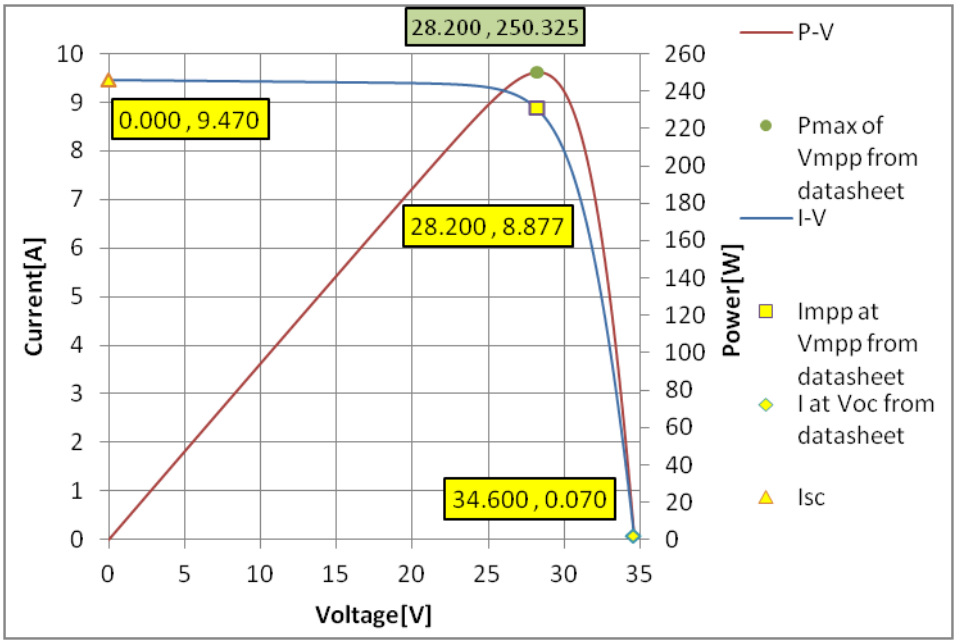
*R1 is load resistance (arbitrary value, EX:10Ω).

*“.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	9.470	9.470	0.000%
Voc	34.600	34.625	0.072%
Vmpp	28.200	28.302	1.484%
Impp	8.870	8.846	0.319%
Pmax(Impp*Vmpp)	250.134	250.353	0.087%