

Device Modeling Report

Components: Solar Cell

Product Name:KK280P-3CD3CG

Manufacture: KYOCERA

Kawatta-



OverView

This report shows LTspice simulation results of KK280P-3CD3CG 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

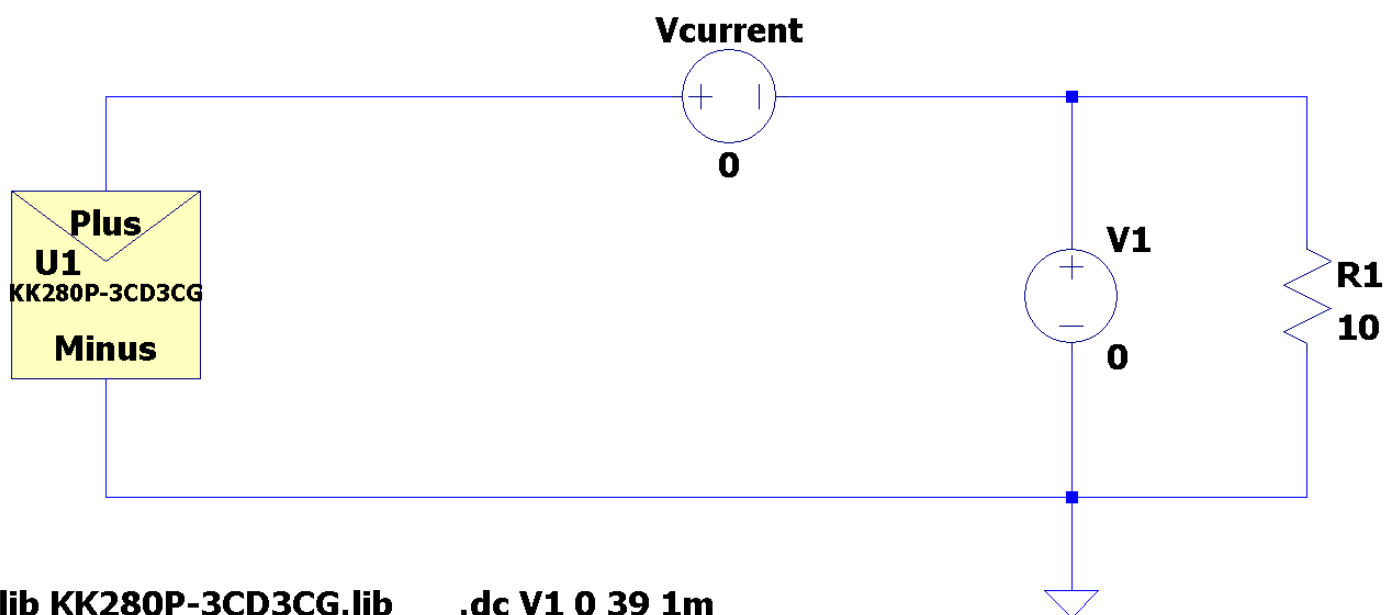
*This model only works at 25°C of LTspice setting and works voltage from 0V – 38.9V

*This model name of LTspice is only KK280P-3CD3CG.

Specification of electrical performance form datasheet (JIS C 8990)

Parameter	Value
Maximum Power (Pmax)	280W
Maximum Power Voltage (Vmpp)	31.5V
Maximum Power Current (Impp)	8.89A
Open Circuit Voltage (Voc)	38.9V
Short Circuit Current (Isc)	9.53A

Simulation Circuit



```
.lib KK280P-3CD3CG.lib .dc V1 0 39 1m
```

```
.temp 25
```

*Vcurrent works as Ammeter.

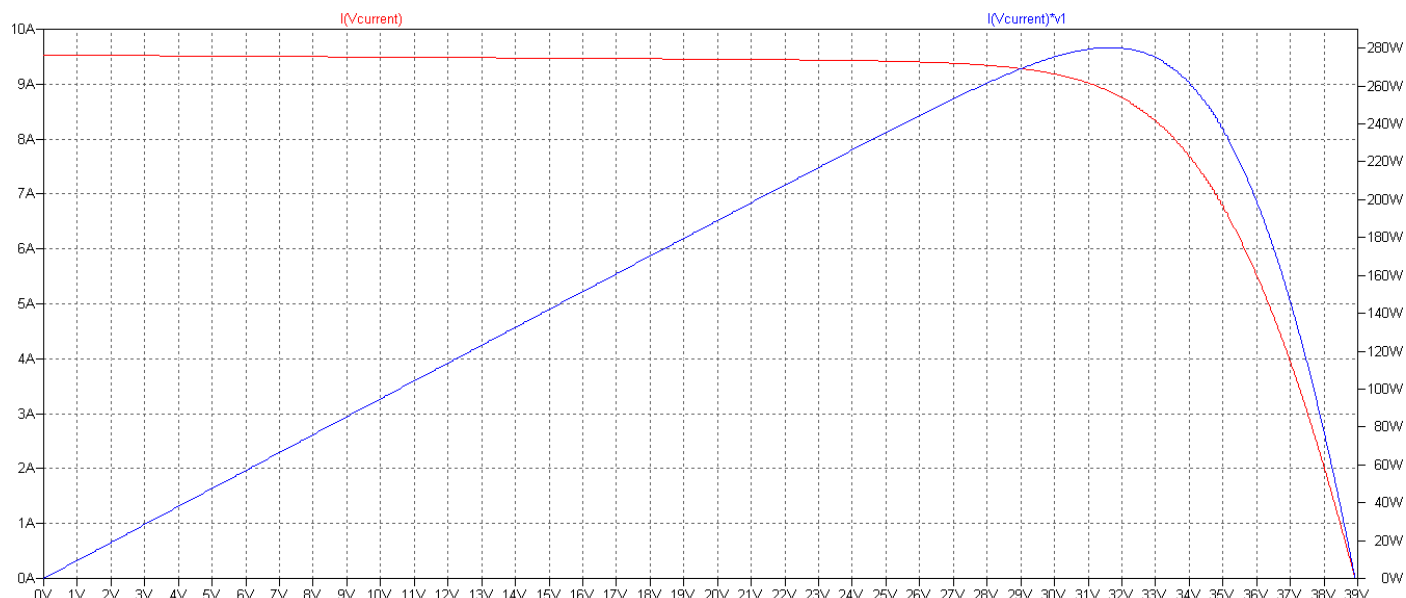
*V1 works as source of dc sweep of KK280P-3CD3CG (0V - 39V).

(*This model works from voltage 0V - 38.9V)

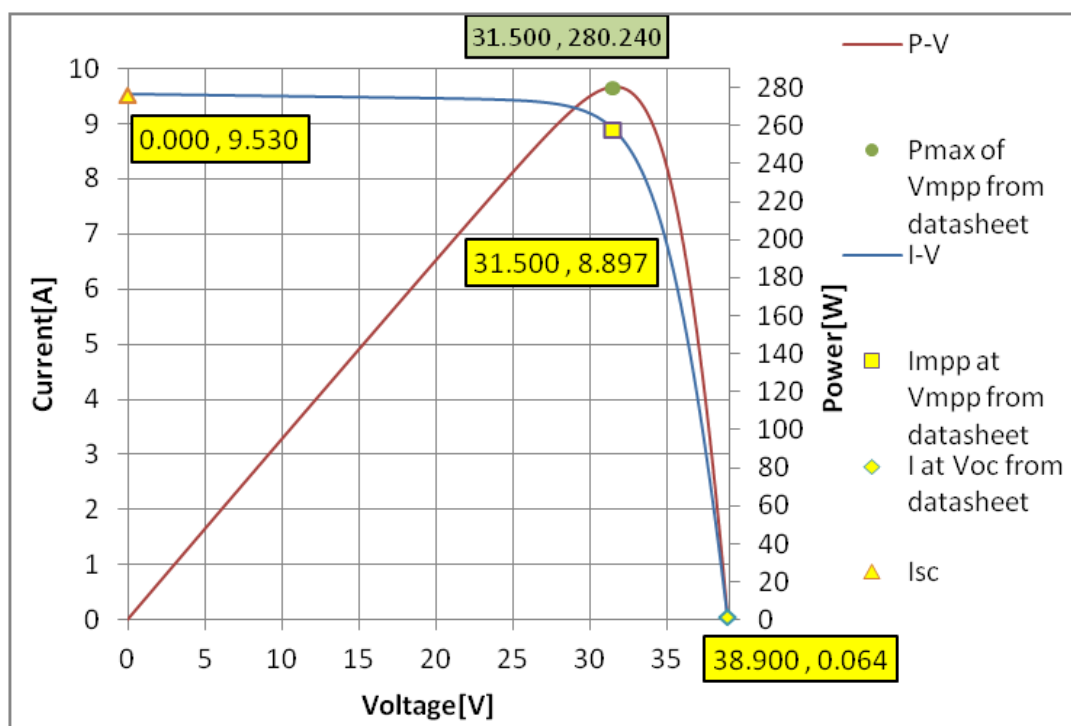
*R1 is load resistance (arbitrary value, EX:10Ω).

*“.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[A]	9.530	9.530	0.000%
Voc[V]	38.900	38.928	0.071%
Vmpp[V]	31.500	31.624	0.394%
Impp[A]	8.890	8.864	-0.294%
Pmax[W] (Impp*Vmpp)	280.035	280.311	0.099%