

# Device Modeling Report

Components: Solar Cell  
Product Name:KS270P-5ETCG  
Manufacture: KYOCERA

Kawatta-



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## Overview

This report shows LTspice simulation results of KS270P-5ETCG characteristics from datasheet.

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

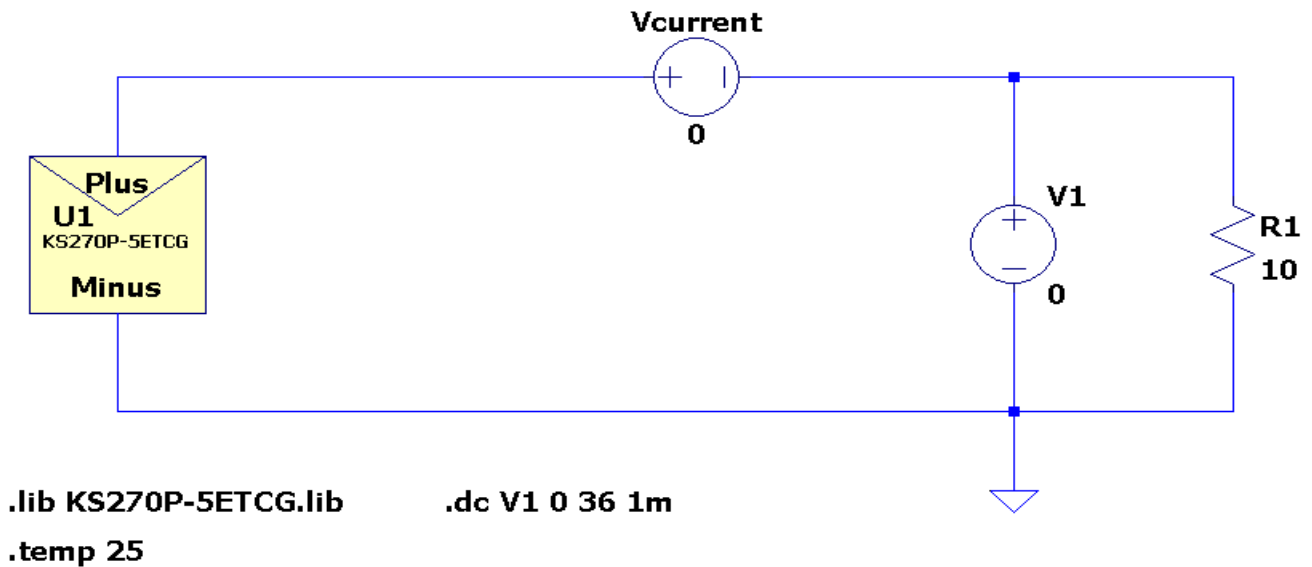
\*JIS C 8990 is Irradiance 1000W/m<sup>2</sup>, AM1.5 spectrum, module temperature 25°C

\*This model only works at 25°C of LTspice setting and works voltage from 0V – 35.6V

## Specification of electrical performance form datasheet (JIS C 8990)

Parameter	Value
Maximum Power (Pmax)	270W
Maximum Power Voltage (Vmpp)	29.2V
Maximum Power Current (Impp)	9.25A
Open Circuit Voltage (Voc)	35.6V
Short Circuit Current (Isc)	9.75A

## Simulation Circuit



\*Vcurrent works as Ammeter.

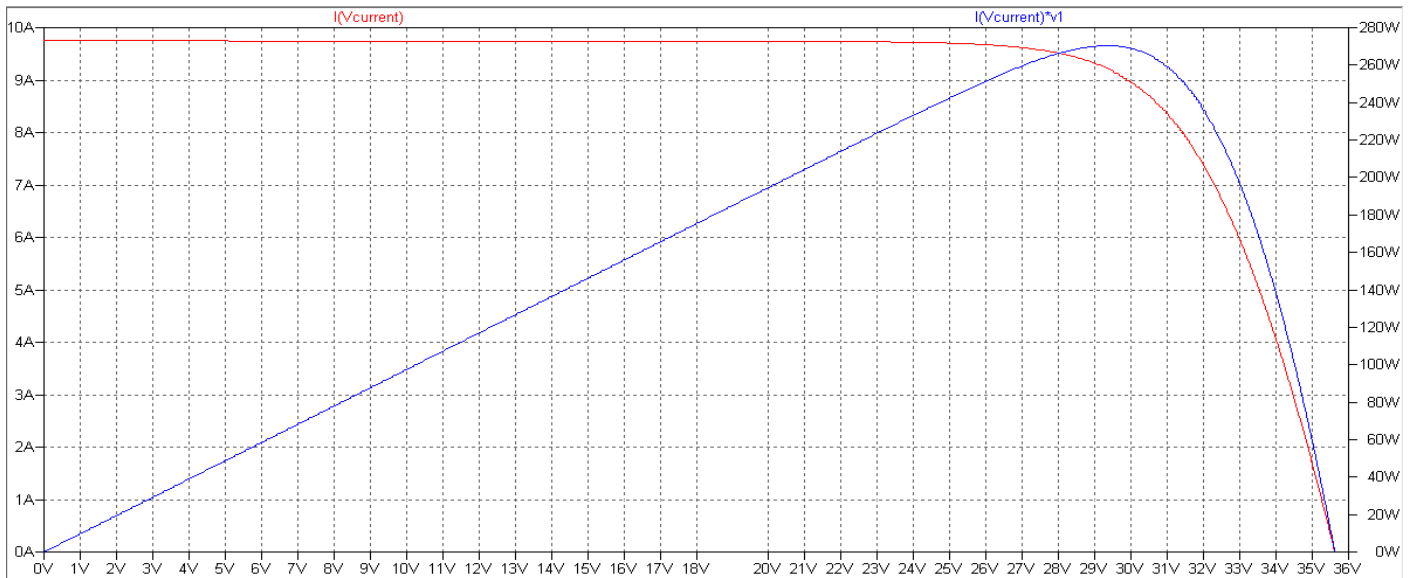
\*V1 works as source of dc sweep of KS270P-5ETCG(0V- 36V).

(\*This model works from voltage 0V – 35.6V)

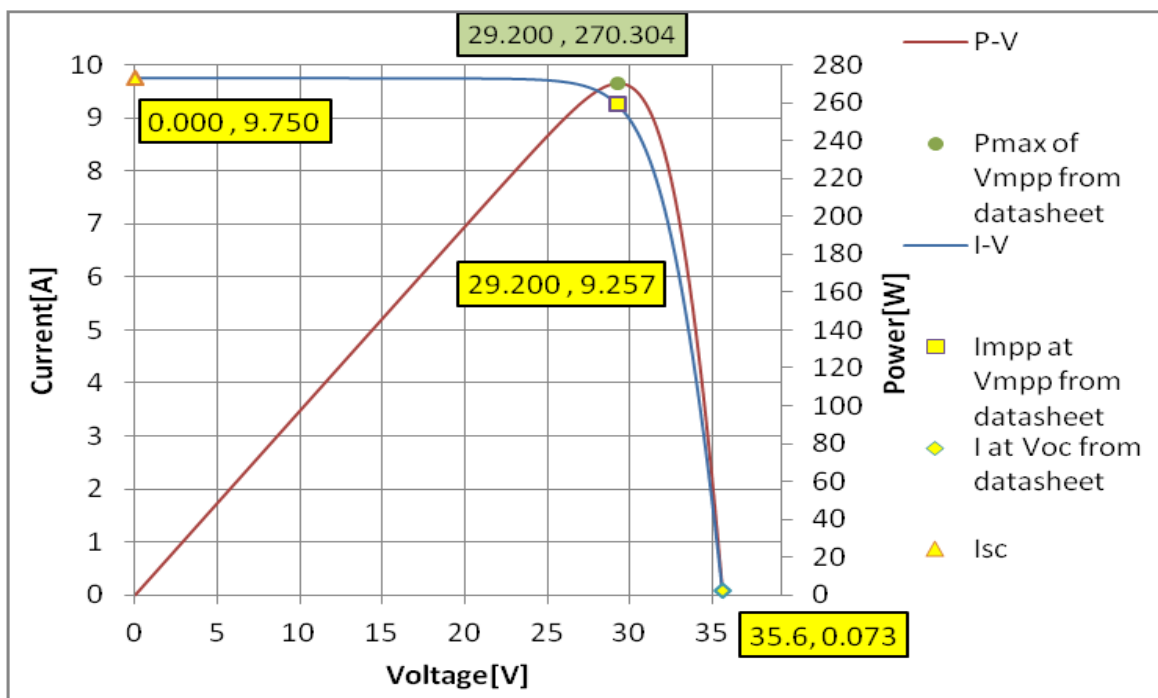
\*R1 is load resistance (arbitrary value, EX:10Ω).

\*“.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	9.750	9.750	0.000%
Voc	35.600	35.626	0.073%
Vmpp	29.200	29.311	0.380%
Impp	9.250	9.223	-0.290%
Pmax(Impp*Vmpp)	270.100	270.342	0.089%