

Characteristics of a PV module

Manufacturer, model : **Trina Solar, TSM-395DE09.05**
 Availability : Prod. Since 2021
 Data source : UL 2021

STC power (manufacturer)	Pnom	395 Wp	Technology	Si-mono
Module size (W x L)	1.096 x 1.754	m²	Rough module area	Amodule 1.92 m²
Number of cells	2 x 60		Sensitive area (cells)	Acells 1.76 m²
Specifications for the model (manufacturer or measurement data)				
Reference temperature	TRef	25 °C	Reference irradiance	GRef 1000 W/m²
Open circuit voltage	Voc	41.0 V	Short-circuit current	Isc 12.21 A
Max. power point voltage	Vmpp	34.0 V	Max. power point current	Impp 11.62 A
=> maximum power	Pmpp	395.1 W	Isc temperature coefficient	mulsc 5.5 mA/°C
One-diode model parameters				
Shunt resistance	Rshunt	180 ohm	Diode saturation current	IoRef 0.038 nA
Serie resistance	Rserie	0.15 ohm	Voc temp. coefficient	MuVoc -123 mV/°C
			Diode quality factor	Gamma 1.00
Specified Pmax temper. coeff.	muPMaxR	-0.35 %/°C	Diode factor temper. coeff.	muGamma -0.001 1/°C
Reverse Bias Parameters, for use in behaviour of PV arrays under partial shadings or mismatch				
Reverse characteristics (dark)	BRev	3.20 mA/V²	(quadratic factor (per cell))	
Number of by-pass diodes per module	3		Direct voltage of by-pass diodes	-0.7 V

Model results for standard conditions (STC: T=25° C, G=1000 W/m² , AM=1.5)				
Max. power point voltage	Vmpp	34.4 V	Max. power point current	Impp 11.50 A
Maximum power	Pmpp	395.8 Wc	Power temper. coefficient	muPmpp -0.35 %/°C
Efficiency(/ Module area)	Eff_mod	20.6 %	Fill factor	FF 0.791
Efficiency(/ Cells area)	Eff_cells	22.4 %		

