

# TSM-PA05

## The Universal Solution



Easy installation and handling for various applications



Module can bear snow loads (5400PA) and wind loads (2400PA)



Guaranteed power output (0~+3%)



High performance under low light conditions (Cloudy days, mornings and evenings)



Independently certified by international certification body\*



Manufactured according to International Quality and Environment Management System (ISO9001, ISO14001)



Currently the most popular panel produced by Trina Solar. Versatile and adaptable, with power output ranging from 220 to 240Wp, the TSM-PA05 panel is perfect for large-scale installations, particularly ground-mounted and commercial rooftop systems. Using reliable and carefully selected components that are tested at the Trina Solar Center of Excellence, this panel comes with a 25-year performance guarantee of 80% power production.

Trina Solar, **the best \$/kWh** value under the sun



### Trina Solar (U.S.), Inc.

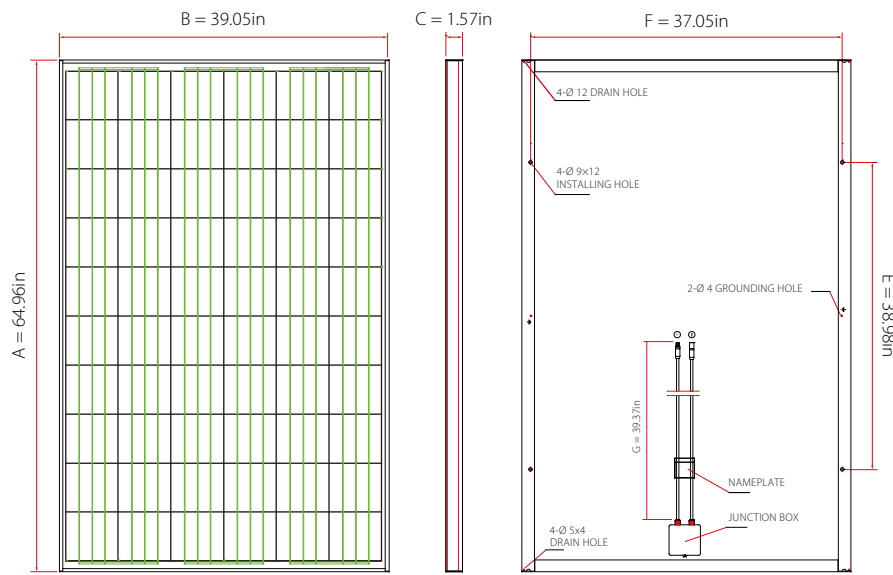
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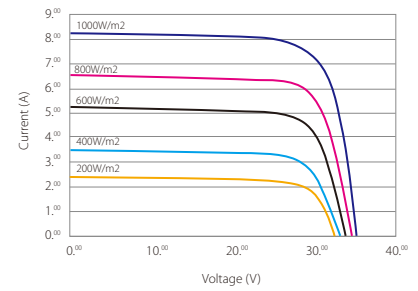
Founded in 1997, Trina Solar is a vertically integrated PV manufacturer, producing everything from ingots to modules, using both mono and multicrystalline technologies. At the end of 2010, the company will have a nameplate module capacity of 950MW. Trina Solar's wide range of products are used in residential, commercial, industrial and public utility applications throughout the world.

Only by matching an efficient cost-structure with proven performance will we, as an industry, achieve grid parity. And at Trina Solar, we have both.

## Dimensions of PV module TSM-PA05



## I-V Curves of PV module TSM-230PA05



Efficiency	up to 14.7
Wattage	up to 240
Years warranty	25

## Certification



Electrical Data @ STC	TSM-220PA05	TSM-225PA05	TSM-230PA05	TSM-235PA05	TSM-240PA05
Peak Power Watts- $P_{MAX}$ (WP)	220	225	230	235	240
Power Output Tolerance- $P_{MAX}$ (%)	0/+3	0/+3	0/+3	0/+3	0/+3
Maximum Power Voltage- $V_{MAX}$ (V)	29.0	29.4	29.8	30.1	30.4
Maximum Power Current- $I_{MPP}$ (A)	7.60	7.66	7.78	7.81	7.89
Open Circuit Voltage- $V_{OC}$ (V)	36.8	36.9	37.0	37.1	37.2
Short Circuit Current- $I_{SC}$ (A)	8.15	8.20	8.26	8.31	8.37
Encapsulated Cell Efficiency $\eta_c$ (%)	15.1	15.4	15.8	16.1	16.4
Module Efficiency $\eta_m$ (%)	13.4	13.7	14.1	14.4	14.7

Values at Standard Test Conditions STC (Air Mass AM1.5, Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25°C)

## General Data

Cell Type	6 x 6in Multicrystalline silicon, 60pcs (6x10)
Glass	High Transmission, Low Iron, Tempered Glass 0.13in
Frame	Anodized Aluminum
J-Box / Connector	1. Tyco / Tyco, IP65 2. Renhe / MC4, IP65

## Temperature Ratings

Nominal Operating Cell Temperature (NOCT)	46°C (±2°C)
Temperature Coefficient of $P_{MPP}$	- 0.45%/°C
Temperature Coefficient of $V_{OC}$	- 0.35%/°C
Temperature Coefficient of $I_{SC}$	0.05%/°C

## Mechanical and Packing Configuration

Dimensions (A x B X C)	64.96 x 39.05 x 1.57in
Installation Hole Dimensions (E x F)	38.98 x 37.05in
Cable length (G)	39.37in
Weight	43.0lb
Packing Configuration	25pcs/carton
Quantity/Pallet	1 carton/pallet
Loading Capacity	650pcs/40ft(H)

## Maximum Ratings

Operating Temperature	-40 ~ +85°C
Storage Temperature	-40 ~ +85°C
Maximum System Voltage	600VDC
Maximum Series Fuse	15A

## Warranty

5 years manufacturing warranty
10 years warranty, 90% power output
25 years warranty, 80% power output



**CAUTION:** READ SAFETY AND INSTALLATION INSTRUCTIONS BEFORE USING THE PRODUCT.

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