

# TSM-PA05

## The Universal Solution



Module can bear snow loads up to 5400Pa and wind loads up to 2400Pa



Guaranteed power output (0~+3%)



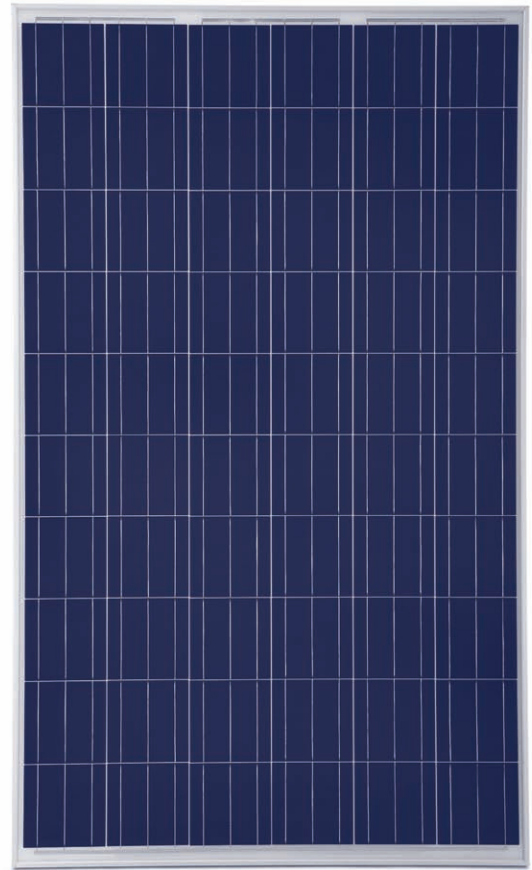
High performance under low light conditions (Cloudy days, mornings and evenings)



Independently certified by international certification bodies\*



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

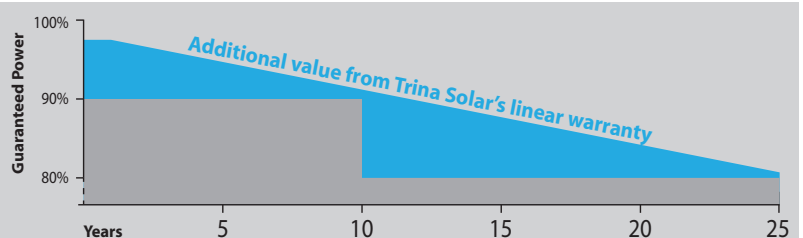


Currently Trina Solar's most popular panel. Versatile and adaptable, with power output ranging from 225 to 245Wp, the TSM-PA05 is perfect for large-scale installations, particularly ground-mounted and commercial rooftop systems. Using reliable and carefully selected components that are tested at the Trina Solar Center of Excellence, this panel comes with a 25-year performance guarantee of 80% power production.



**linear performance warranty**

**10 year product warranty**  
**25 year linear power warranty**



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USA

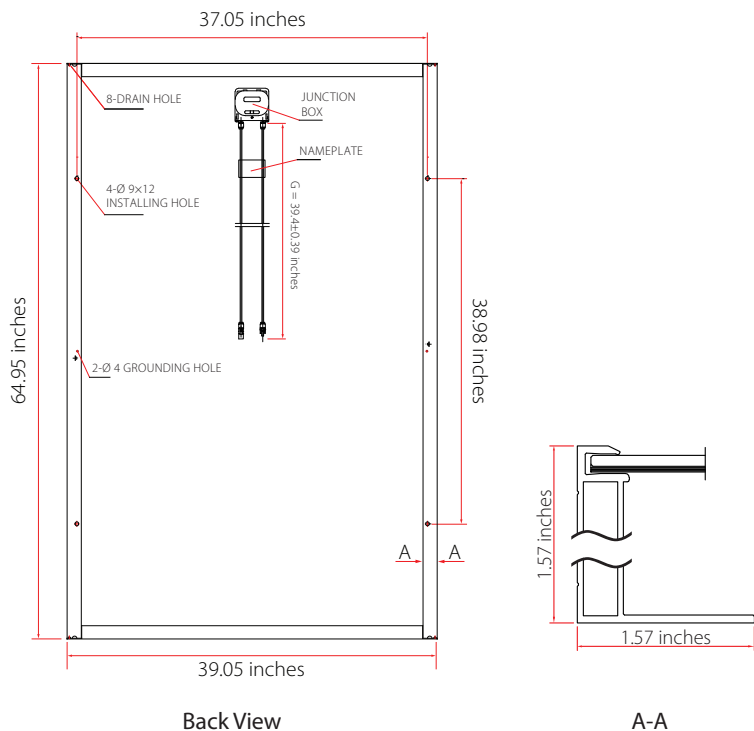
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Founded in 1997, Trina Solar is a vertically integrated PV manufacturer, producing everything from ingots to modules, using both mono and multicrystalline technologies. By the end of 2011, the company will have a nameplate module capacity of 1.9GW. Trina Solar's wide range of products are used in residential, commercial, industrial and public utility applications throughout the world.

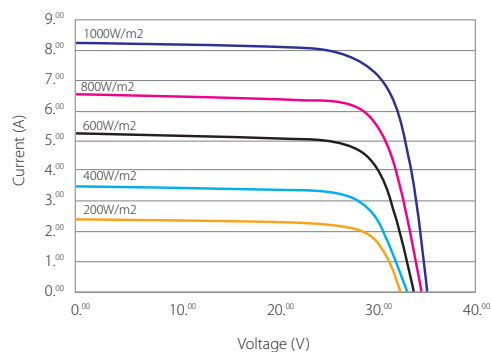
Only by matching an efficient cost-structure with proven performance will we, as an industry, achieve grid parity. And at Trina Solar, we have both.

# TSM-PA05 The Universal Solution

## Dimensions of PV module TSM-PA05



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



Efficiency	up to 15.0%
Wattage	up to 245W
Years warranty	25

## Certification



Electrical Data @ STC	TSM-225PA05	TSM-230PA05	TSM-235PA05	TSM-240PA05	TSM-245PA05
Peak Power Watts- $P_{MAX}$ (WP)	225	230	235	240	245
Power Output Tolerance- $P_{MAX}$ (%)	0/+3	0/+3	0/+3	0/+3	0/+3
Maximum Power Voltage- $V_{MAX}$ (V)	29.4	29.8	30.1	30.4	30.7
Maximum Power Current- $I_{MPP}$ (A)	7.66	7.72	7.81	7.89	7.98
Open Circuit Voltage- $V_{OC}$ (V)	36.9	37.0	37.1	37.2	37.3
Short Circuit Current- $I_{SC}$ (A)	8.20	8.26	8.31	8.37	8.47
Module Efficiency $\eta_m$ (%)	13.7	14.1	14.4	14.7	15.0

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

## Mechanical Data

Solar cells	Multicrystalline 6 inches (156 x 156mm)
Cells orientation	60 cells (6x10)
Module dimension	64.95 x 39.05 x 1.57inches (1650 x 992 x 40mm)
Weight	43.0lb (19.5kg)
Glass	High transparency solar glass 0.13inches (3.2mm)
Frame	Anodized aluminium alloy
J-Box	IP 65 rated
Cables/Connector	Photovoltaic Technology cable 0.006inches <sup>2</sup> (4.0mm <sup>2</sup> ), 39.4inches (1000mm), MC4

## 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

## Maximum Ratings

Operational Temperature	-40~+85°C
Maximum System Voltage	600VDC
Max Series Fuse Rating	15A

## Warranty

10 years workmanship warranty  
 25 years linear performance warranty  
 (Please refer to Trina Solar product warranty for details)

## Packaging Configuration

Modules per box	25 pcs
Modules per 40' container	650 pcs