

# TSM-PC05 TSM-PA05

## THE UNIVERSAL SOLUTION

**15.3%**  
MAX EFFICIENCY

**250W**  
MAX POWER OUTPUT

**10 YEAR**  
PRODUCT WARRANTY

**25 YEAR**  
LINEAR POWER WARRANTY

Founded in 1997, Trina Solar is one of the world's leading PV companies. Since its IPO on the NYSE in 2006, Trina Solar has developed a vertically integrated business model, with in-house production of ingots, wafers, cells and solar panels in both mono and multicrystalline technologies. Its manufacturing capacity for solar panels will be 2.4GW by the end of 2012, making it one of the largest solar manufacturers in the world. Trina Solar's extensive portfolio includes panels for all kinds of applications- residential, utility, offgrid, BIPV as well as innovative system solutions.

With 20 branch offices around the world, Trina Solar is serving leading installers, distributors, utilities and developers in all major PV markets. Trina Solar is committed to driving down the cost of solar and making it more affordable for all.

Trina Solar Limited  
[www.trinasolar.com](http://www.trinasolar.com)



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**



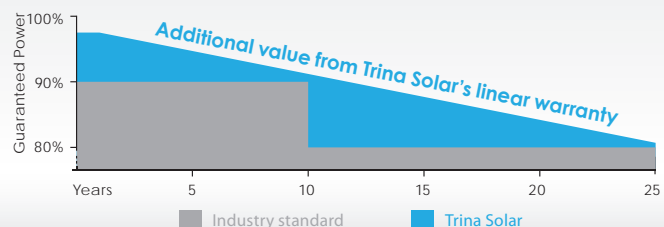
Manufactured according to International Quality and Environment Management System Standards  
**ISO9001, ISO14001**



Approved **original MC4** Photovoltaic connector used with highest reliability

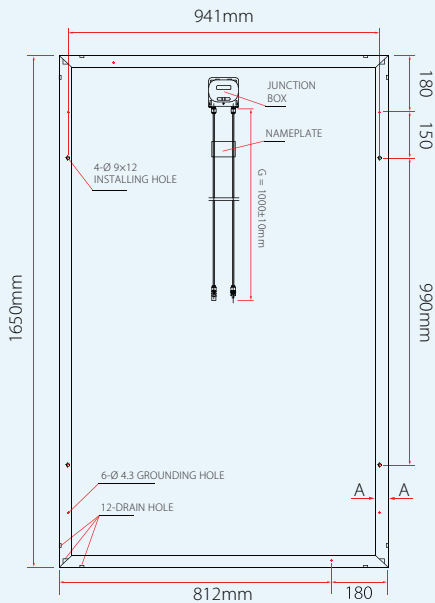
### LINEAR PERFORMANCE WARRANTY

10 Year Product Warranty • 25 Year Linear Power Warranty

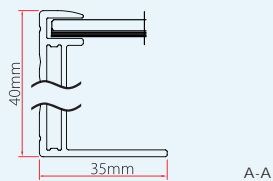


# TSM-PC05 / TSM-PA05 THE UNIVERSAL SOLUTION

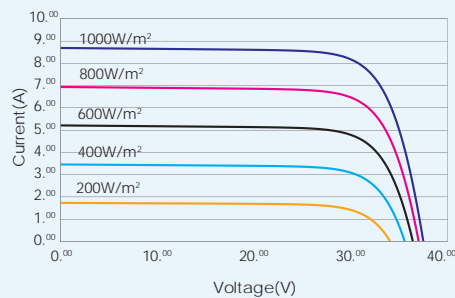
## DIMENSIONS OF PV MODULE TSM-PC/PA05



Back View

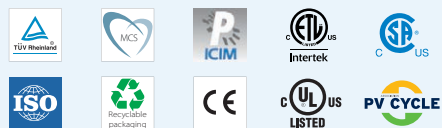


## I-V CURVES OF PV MODULE TSM-245 PC/PA05



Average efficiency reduction of 4.5% at 200W/m<sup>2</sup> according to EN 60904-1.

## CERTIFICATION



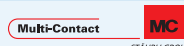
| ELECTRICAL DATA @ STC                       | TSM-235 PC/PA05 | TSM-240 PC/PA05 | TSM-245 PC/PA05 | TSM-250 PC/PA05 |
|---|-----------------|-----------------|-----------------|-----------------|
| Peak Power Watts-P <sub>MAX</sub> (Wp)      | 235             | 240             | 245             | 250             |
| Power Output Tolerance-P <sub>MAX</sub> (%) | 0/+3            | 0/+3            | 0/+3            | 0/+3            |
| Maximum Power Voltage-V <sub>MPP</sub> (V)  | 29.3            | 29.7            | 30.2            | 30.3            |
| Maximum Power Current-I <sub>MPP</sub> (A)  | 8.03            | 8.10            | 8.13            | 8.27            |
| Open Circuit Voltage-V <sub>OC</sub> (V)    | 37.2            | 37.3            | 37.5            | 37.6            |
| Short Circuit Current-I <sub>SC</sub> (A)   | 8.55            | 8.62            | 8.68            | 8.85            |
| Module Efficiency η <sub>m</sub> (%)        | 14.4            | 14.7            | 15.0            | 15.3            |

Values at Standard Test Conditions STC (Air Mass AM1.5, Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25°C). Power measurement tolerance: ±3%

| ELECTRICAL DATA @ NOCT                        | TSM-235 PC/PA05 | TSM-240 PC/PA05 | TSM-245 PC/PA05 | TSM-250 PC/PA05 |
|---|-----------------|-----------------|-----------------|-----------------|
| Maximum Power-P <sub>MAX</sub> (Wp)           | 171             | 174             | 178             | 181             |
| Maximum Power Voltage-V <sub>MPP</sub> (V)    | 26.4            | 26.6            | 26.8            | 27.0            |
| Maximum Power Current-I <sub>MPP</sub> (A)    | 6.48            | 6.55            | 6.64            | 6.70            |
| Open Circuit Voltage (V)-V <sub>OC</sub> (V)  | 34.0            | 34.1            | 34.2            | 34.3            |
| Short Circuit Current (A)-I <sub>SC</sub> (A) | 6.97            | 7.04            | 7.10            | 7.25            |

NOCT: Irradiance at 800W/m<sup>2</sup>, Ambient Temperature 20°C, Wind Speed 1m/s. Power measurement tolerance: ±3%

## MECHANICAL DATA

|                   |   |
|-------------------|---|
| Solar cells       | Multicrystalline 156 × 156mm (6 inches)   |
| Cell orientation  | 60 cells (6 × 10)   |
| Module dimensions | 1650 × 992 × 40mm (64.95 × 39.05 × 1.57 inches)   |
| Weight            | 19.5kg (43.0 lb)  |
| Glass             | High transparency solar glass 3.2mm (0.13 inches)   |
| Frame             | Anodized aluminium alloy  |
| J-Box             | IP 65 rated   |
| Cables            | Photovoltaic Technology cable 4.0mm <sup>2</sup> (0.006 inches <sup>2</sup> ), 1000mm (39.4 inches) |
| Connector         | MC4             |

## TEMPERATURE RATINGS

|   |             |
|---|-------------|
| Nominal Operating Cell Temperature (NOCT)   | 45°C (±2°C) |
| Temperature Coefficient of P <sub>MAX</sub> | -0.43%/°C   |
| Temperature Coefficient of V <sub>OC</sub>  | -0.32%/°C   |
| Temperature Coefficient of I <sub>SC</sub>  | 0.047%/°C   |

## MAXIMUM RATINGS

|                         |                           |
|-------------------------|---------------------------|
| Operational Temperature | -40~+85°C                 |
| Maximum System Voltage  | 1000V DC(IEC)/600V DC(UL) |
| Max Series Fuse Rating  | 15A                       |

## WARRANTY

- 10 year workmanship warranty
  - 25 year linear performance warranty
- (Please refer to product warranty for details)

## PACKAGING CONFIGURATION

- Modules per box: 24 pcs
- Modules per 40' container: 672 pcs