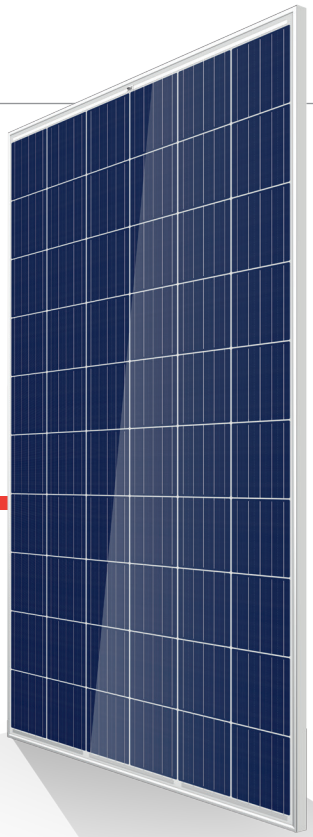
# Honey MODULE

## TSM-PD05



**60 CELL**
MULTICRYSTALLINE MODULE

**270-285W**
POWER OUTPUT RANGE

**17.4%**
MAXIMUM EFFICIENCY

**0/+5W**
POSITIVE POWER TOLERANCE

Founded in 1997, Trina Solar is the world's leading comprehensive solutions provider for solar energy. We believe close cooperation with our partners is critical to success. Trina Solar now distributes its PV products to over 60 countries all over the world. Trina Solar is able to provide exceptional service to each customer in each market and supplement our innovative, reliable products with the backing of Trina Solar as a strong, bankable partner. We are committed to building strategic, mutually beneficial collaboration with installers, developers, distributors and other partners.

### Comprehensive Product And System Certificates

IEC61215/IEC61730/UL1703/IEC61701/IEC62716
ISO 9001: Quality Management System
ISO 14001: Environmental Management System
ISO14064: Greenhouse Gas Emissions Verification
OHSAS 18001: Occupational Health and Safety Management System

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### Excellent low light performance on cloudy days, mornings and evenings

- Advanced surface texturing
- Back surface field
- Selective emitter

### Maximize Limited Space

- 60-cell module power output up to 285 W
- Up to 174 W/m² power density

### Highly reliable due to stringent quality control

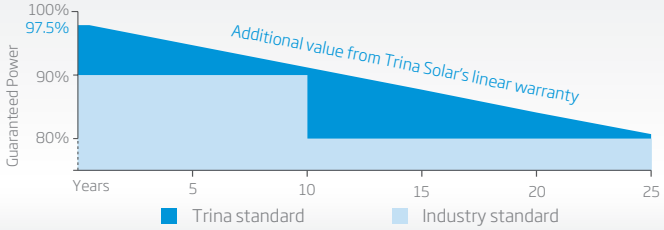
- All modules have to pass electroluminescence (EL) inspection
- Over 30 in-house tests (UV, TC, HF, and many more)
- In-house testing goes well beyond certification requirements
- PID resistant
- 1000 V UL/1000 V IEC certified

### Certified to withstand challenging environmental conditions

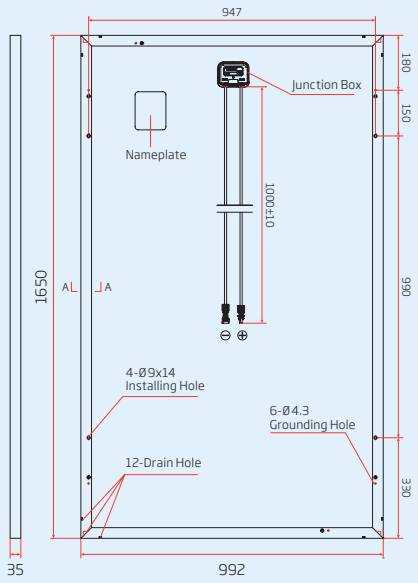
- 130 km/h wind load (2400 Pa)
- 900 kg snow load per module (5400 Pa)
- 35 mm hail stones at 97 km/h
- Ammonia resistance
- Salt mist resistance
- Resistance to sand and dust abrasion

### LINEAR PERFORMANCE WARRANTY

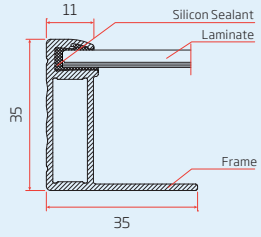
**10 Year Product Warranty · 25 Year Linear Power Warranty**



## DIMENSIONS OF PV MODULE TSM-PD05 (unit: mm)

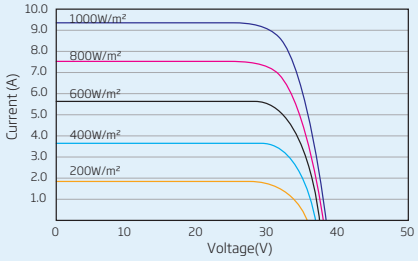



Back View

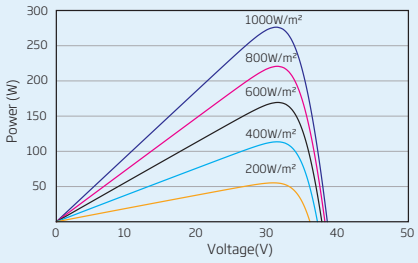



(A-A)

## I-V CURVES OF PV MODULE (280W)




## P-V CURVES OF PV MODULE (280W)




| ELECTRICAL DATA @ STC | TSM-270 PD05 | TSM-275 PD05 | TSM-280 PD05 | TSM-285 PD05 |
|---|---|---|---|---|
| Peak Power Watts-$P_{MAX}$ (Wp)* | 270 | 275 | 280 | 285 |
| Power Output Tolerance-$P_{MAX}$ (W) | 0/+5 | 0/+5 | 0/+5 | 0/+5 |
| Maximum Power Voltage-$V_{MPP}$ (V) | 30.9 | 31.1 | 31.4 | 31.6 |
| Maximum Power Current-$I_{MPP}$ (A) | 8.73 | 8.84 | 8.92 | 9.02 |
| Open Circuit Voltage-$V_{OC}$ (V) | 37.9 | 38.1 | 38.2 | 38.3 |
| Short Circuit Current-$I_{SC}$ (A) | 9.22 | 9.32 | 9.40 | 9.49 |
| Module Efficiency $\eta_m$ (%) | 16.5 | 16.8 | 17.1 | 17.4 |

STC: Irradiance 1000 W/m², Cell Temperature 25 °C, Air Mass AM1.5
* Measuring tolerance: ±3%

| ELECTRICAL DATA @ NOCT | TSM-270 PD05 | TSM-275 PD05 | TSM-280 PD05 | TSM-285 PD05 |
|---|---|---|---|---|
| Maximum Power-$P_{MAX}$ (Wp) | 200 | 204 | 208 | 211 |
| Maximum Power Voltage-$U_{MPP}$ (V) | 28.6 | 28.8 | 29.0 | 29.2 |
| Maximum Power Current-$I_{MPP}$ (A) | 7.00 | 7.09 | 7.15 | 7.23 |
| Open Circuit Voltage-$U_{OC}$ (V) | 35.1 | 35.3 | 35.4 | 35.5 |
| Short Circuit Current-$I_{SC}$ (A) | 7.44 | 7.52 | 7.59 | 7.66 |

NOCT: Irradiance at 800 W/m², Ambient Temperature 20 °C, Wind Speed 1 m/s.

## MECHANICAL DATA

| | |
|---|---|
| Solar Cells | Multicrystalline 156.75 × 156.75 mm |
| Cell Orientation | 60 cells (6 x 10) |
| Module Dimensions | 1650 × 992 × 35 mm |
| Weight | 18.6 kg |
| Glass | 3.2 mm, high transparency, AR coated and heat tempered solar glass |
| Backsheet | White |
| Frame | Silver Anodized Aluminium Alloy |
| J-Box | IP 67 or IP 68 rated |
| Cables | Photovoltaic Technology Cable 4.0mm², 1000 mm |
| Connector | EU Countries: 28 MC4 / UTX / TS4, Non-EU Countries: 28 QC4 / TS4 |

## TEMPERATURE RATINGS

| | |
|---|---|
| Nominal Operating Cell Temperature (NOCT) | 44°C (±2K) |
| Temperature Coefficient of $P_{MAX}$ | - 0.41%/K |
| Temperature Coefficient of $V_{OC}$ | - 0.32%/K |
| Temperature Coefficient of $I_{SC}$ | 0.05%/K |

## MAXIMUM RATINGS

| | |
|---|---|
| Operational Temperature | -40 to +85°C |
| Maximum System Voltage | 1000 V DC (IEC) 1000 V DC (UL) |
| Max Series Fuse Rating* | 15 A |
| Mechanical Load | 5400 Pa |
| Wind Load | 2400 Pa |

* DO NOT connect fuse in combiner box with two or more strings in parallel connection

## WARRANTY

10 year Product Workmanship Warranty

25 year Linear Performance Warranty

(Please refer to product warranty for details)

## PACKAGING CONFIGURATION

| | |
|---|---|
| Modules per box: | 30 pieces |
| Modules per 40' container: | 840 pieces |

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



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