

# TSM-PC05 TSM-PA05

## THE UNIVERSAL SOLUTION

**15.0%**  
MAX EFFICIENCY

**245W**  
MAX POWER OUTPUT

**10 YEAR**  
PRODUCT WARRANTY

**25 YEAR**  
LINEAR POWER WARRANTY

Founded in 1997, Trina Solar is a vertically integrated PV manufacturer, involved in the production of ingots, wafers and cells to the assembly of high quality modules, using both mono and multicrystalline technologies. As of July 2011, the Company has already achieved an annualized nameplate module capacity of approximately 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.

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**



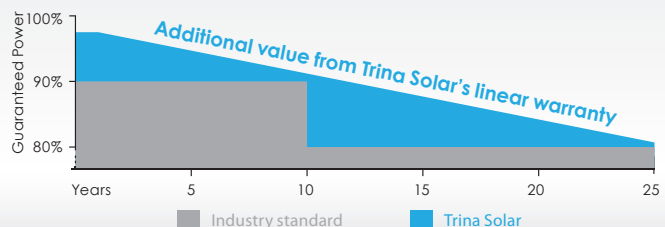
Independently certified by international certification bodies  
**IEC61215, IEC61730, UL1703, TUV Safety Class II, CE**



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

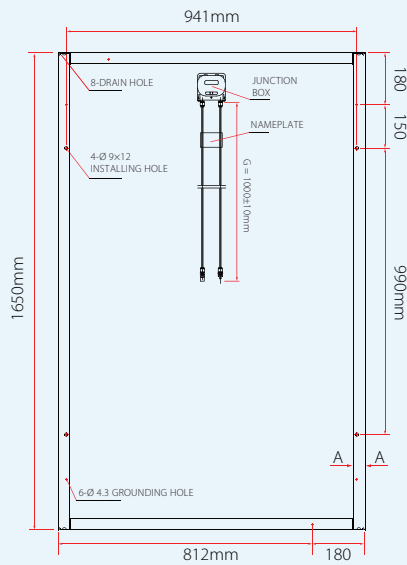
### LINEAR PERFORMANCE WARRANTY

10 Year Product Warranty • 25 Year Linear Power Warranty

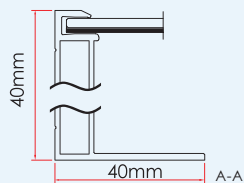


# TSM-PC05 / TSM-PA05 THE UNIVERSAL SOLUTION

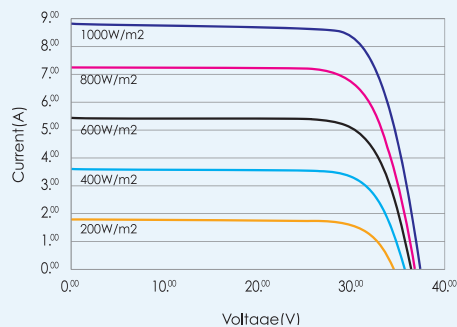
## DIMENSIONS OF PV MODULE TSM-PC/PA 05



Back View



## I-V CURVES OF PV MODULE TSM-230 PC/PA 05



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

## CERTIFICATION



ELECTRICAL DATA @ STC	TSM-225 PC/PA05	TSM-230 PC/PA05	TSM-235 PC/PA05	TSM-240 PC/PA05	TSM-245 PC/PA05
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- $V_{MP}$ (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).

ELECTRICAL DATA @ NOCT	TSM-225 PC/PA05	TSM-230 PC/PA05	TSM-235 PC/PA05	TSM-240 PC/PA05	TSM-245 PC/PA05
Maximum Power (W)	164	168	172	175	178
Maximum Power Voltage (V)	26.9	27.1	27.4	27.7	27.8
Maximum Power Current (A)	6.12	6.20	6.27	6.32	6.41
Open Circuit Voltage (V)	33.8	33.9	34.0	34.1	34.2
Short Circuit Current (A)	6.62	6.68	6.70	6.75	6.83

NOCT: Irradiance at 800W/m<sup>2</sup>, Ambient Temperature 20°C, Wind Speed 1M/s.

## MECHANICAL DATA

Solar cells	Multicrystalline 156 × 156mm (6 inches)
Cell orientation	60 cells (6 × 10)
Module dimension	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 / Connector	Photovoltaic Technology cable 4.0mm <sup>2</sup> (0.006 inches <sup>2</sup> ), 1000mm (39.4 inches), MC4 / H4

## TEMPERATURE RATINGS

Nominal Operating Cell Temperature (NOCT)	46°C (±2°C)
Temperature Coefficient of $P_{MAX}$	- 0.43%/°C
Temperature Coefficient of $V_{OC}$	- 0.32%/°C
Temperature Coefficient of $I_{SC}$	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: 25 pcs  
 Modules per 40' container: 650 pcs