

# TSM-DA05

## The Performance Panel

-  Easy installation and handling for various applications
-  Module bears load up to 5400Pa
-  Guaranteed power output (0~+3%)
-  Independently certified by international certification body (TUV, UL, ICIM, VDE, JET and SGS)\*
-  Manufactured according to International Quality and Environment Management System (ISO9001, ISO14001)



A high-efficiency module, with maximum power outputs ranging from 220 to 235Wp. Made with six-inch Monocrystalline cells, with module efficiencies up to 15.0%, this module is ideal for residential and rooftops installations.

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



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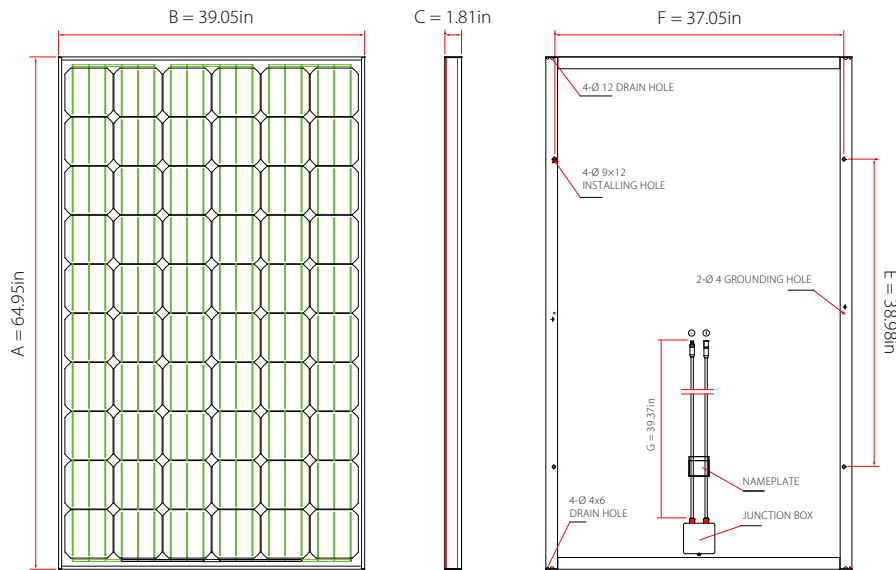
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Founded in 1997, Trina Solar is a vertically integrated PV manufacturer, producing everything from ingots to modules, using both mono and multicrystalline technologies. At the end of 2009, the company had a nameplate module capacity of 600MW. Trina Solar's wide range of products are used in residential, commercial, industrial and public utility applications throughout the world.

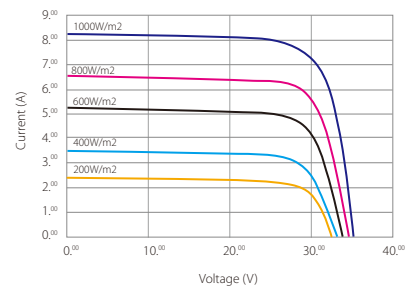
Only by matching an efficient cost-structure with proven performance will we, as an industry, achieve grid parity. And at Trina Solar, we have both.

TSM-DA05 The Performance Panel

Dimensions of PV module TSM-DA05



I-V Curves of PV module TSM-230DA05



Efficiency	up to 15.0
Wattage	up to 240
Years warranty	25

Certification



Electrical Data @ STC	TSM-220DA05	TSM-230DA05	TSM-240DA05
Peak Power Watts- $P_{MAX}$ (WP)	220	230	240
Power Output Tolerance- $P_{MAX}$ (%)	0/+3	0/+3	0/+3
Maximum Power Voltage- $V_{MAX}$ (V)	29.80	30.00	30.60
Maximum Power Current- $I_{MPP}$ (A)	7.39	7.66	7.84
Open Circuit Voltage- $V_{OC}$ (V)	36.80	37.00	37.50
Short Circuit Current- $I_{SC}$ (A)	8.00	8.18	8.38
Encapsulated Cell Efficiency $\eta_c$ (%)	15.50	16.20	16.90
Module Efficiency $\eta_m$ (%)	13.40	14.10	14.70

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 Monocrystalline silicon, 60pcs in series
Glass	High Transmission, Low Iron, Tempered Glass 0.12in
Frame	Anodized Aluminum, 8 Draining Holes in Frame
Junction Box	12AGW, UL Certified with Tyco connector

Temperature Ratings

Nominal Operating Cell Temperature (NOCT)	47°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)	64.95 x 39.05 x 1.81in
Installation Hole Dimensions (E x F)	38.98 x 37.05in
Cable length (G)	39.37in
Weight	43lb
Packing Configuration	20pcs/carton
Quantity/Pallet	1carton/pallet
Loading Capacity	520pcs/40ft, 240pcs/20ft

Maximum Ratings

Operating Temperature	-40 ~ +85°C
Storage Temperature	-40 ~ +85°C
Maximum System Voltage	600VDC
Number of Bypass Diodes	3pcs
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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