



# P-type PERC

BACKSHEET MONOCRYSTALLINE MODULE

TSM-DE19 540-560W

**560W** / MAXIMUM POWER OUTPUT

**21.4%** / MAXIMUM EFFICIENCY



## High customer value

- Lower LCOE (Levelized Cost Of Energy), reduced BOS (Balance Of System) cost, shorter payback time
- Lower first year and annual degradation
- Designed for compatibility with existing mainstream system components
- Higher return on Investment



## High power up to 560W

- Up to 21.4% module efficiency with high density interconnect technology
- Multi-busbar technology for better light trapping effect, lower series resistance and improved current collection



## High reliability

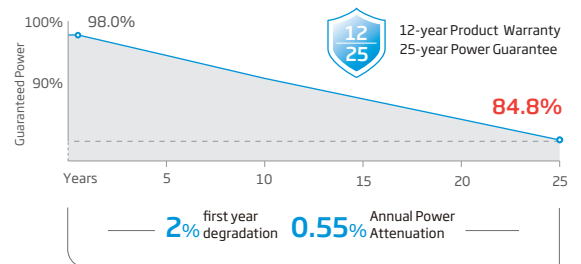
- Minimized micro-cracks with innovative non-destructive cutting technology
- Ensured PID resistance through cell process and module material control
- Mechanical performance up to 5400 Pa positive load and 2400 Pa negative load



## High energy yield

- Excellent IAM (Incident Angle Modifier) and low irradiation performance, validated by 3rd party certifications
- The unique design provides optimized energy production under inter-row shading conditions
- Lower temperature coefficient (-0.34%) and operating temperature

## Performance Warranty



\* Please refer to product warranty for details

## Comprehensive Products and System Certificates

IEC61215/IEC61730/IEC61701/IEC62716/UL61730

ISO 9001: Quality Management System

ISO 14001: Environmental Management System

ISO14064: Greenhouse Gases Emissions Verification

ISO45001: Occupational Health and Safety Management System



**ELECTRICAL DATA (STC)**

Peak Power Watts- $P_{MAX}(W_p)^*$	540	545	550	555	560
Power Selection (W)**	0 ~ +5				
Maximum Power Voltage- $V_{MPP}(V)$	31.2	31.4	31.6	31.8	32.0
Maximum Power Current- $I_{MPP}(A)$	17.33	17.37	17.40	17.45	17.49
Open Circuit Voltage- $V_{oc}(V)$	37.5	37.7	37.9	38.1	38.3
Short Circuit Current- $I_{sc}(A)$	18.41	18.47	18.52	18.56	18.60
Module Efficiency $\eta_m(\%)$	20.7	20.9	21.0	21.2	21.4

STC: Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25°C, Air Mass AM1.5. \*Measuring tolerance: ±3%. \*\*Power selection up to: +3%.

**ELECTRICAL DATA (NOCT)**

Peak Power Watts- $P_{MAX}(W_p)$	409	413	417	420	424
Maximum Power Voltage- $V_{MPP}(V)$	29.0	29.2	29.3	29.5	29.7
Maximum Power Current- $I_{MPP}(A)$	14.10	14.15	14.19	14.23	14.26
Open Circuit Voltage- $V_{oc}(V)$	35.3	35.5	35.7	35.9	36.1
Short Circuit Current- $I_{sc}(A)$	14.84	14.88	14.92	14.96	14.99

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

**TEMPERATURE RATINGS**

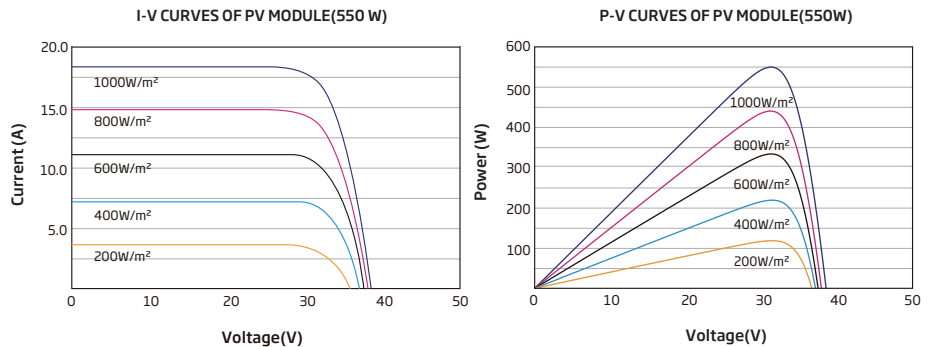
NOCT (Nominal Operating Cell Temperature)	43°C (±2°C)
Temperature Coefficient of $P_{MAX}$	-0.34% /°C
Temperature Coefficient of $V_{oc}$	-0.25% /°C
Temperature Coefficient of $I_{sc}$	0.04% /°C

Due to different testing methods, the actual performances might differ from the declared specifications.

**MAXIMUM RATINGS**

Operational Temperature	-40 ~ +85°C
Maximum System Voltage	1500V DC (IEC) 1500V DC (UL)
Max Series Fuse Rating	30A

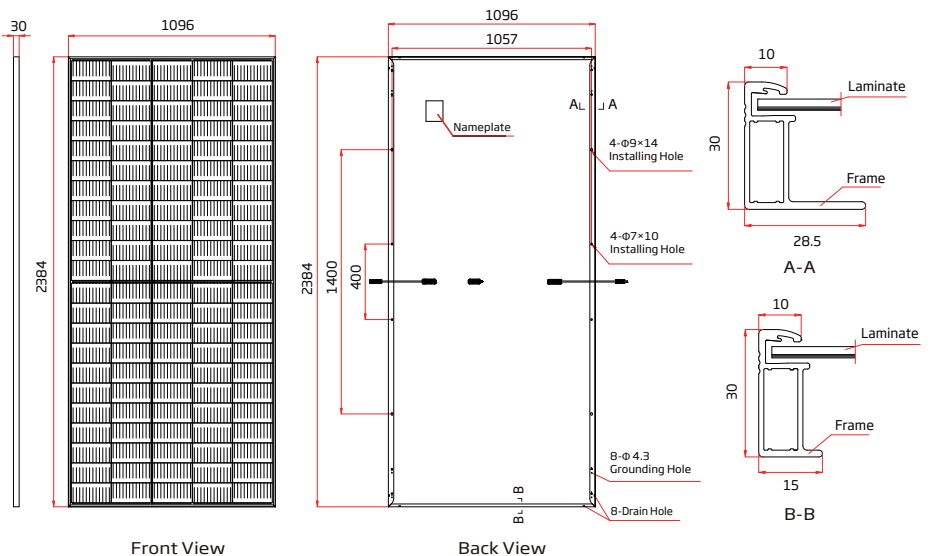
**CURVES OF PV MODULE**



**MECHANICAL DATA**

Solar Cells	Monocrystalline
No. of cells	110 cells
Module Dimensions	2384 × 1096 × 30 mm (93.86 × 43.15 × 1.18 inches)
Weight	28.3 kg (62.39 lb)
Front Glass	3.2mm (0.13inches), AR Coating Tempered Glass
Backsheet	White
Frame	30mm (1.18 inches) Anodized Aluminium Alloy
J-Box	IP 68 rated
Cables	Photovoltaic Technology Cable 4.0mm <sup>2</sup> (0.006 inches <sup>2</sup> ) Portrait: 350/280 mm (13.78/11.02 inches) Length can be customized
Connector	MC4 EV02 / TS4 Plus / TS4*
Packaging	Modules per box: 36 pieces Modules per 40' container: 720pieces

\*Please refer to regional datasheet for specified connector.



www.trinasolar.com

CAUTION: READ SAFETY AND INSTALLATION INSTRUCTIONS BEFORE USING THE PRODUCT.  
© 2024 Trina Solar Co., Ltd. All rights reserved. Specifications included in this datasheet are subject to change without notice.  
The right of final interpretation belongs to Trina Solar Co., Ltd.

Version number: TSM\_EN\_2024\_A