



# P-type PERC

BACKSHEET MONOCRYSTALLINE MODULE

TSM-DE19R 565-585W

**585W** / MAXIMUM  
POWER OUTPUT

**21.7%** / 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 585W

- Up to 21.7% module efficiency with high density interconnect technology
- Multi-busbar technology for better light trapping effect, lower series resistance and improved current collection



## High reliability

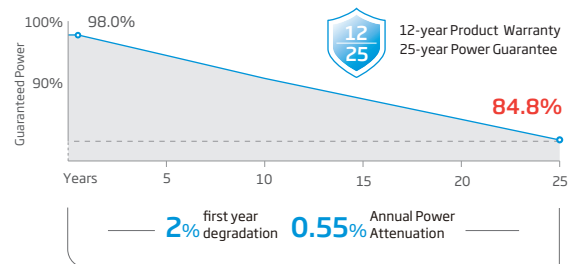
- Minimized micro-cracks with innovative non-destructive cutting technology
- Ensured PID resistance through cell process and module material control
- Mechanical performance up to 5400 Pa positive load and 2400 Pa negative load



## 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

ISO 9001: Quality Management System

ISO 14001: Environmental Management System

ISO14064: Greenhouse Gases Emissions Verification

ISO45001: Occupational Health and Safety Management System



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

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## ELECTRICAL DATA (STC)

Peak Power Watts- $P_{MAX}(W_p)^*$	565	570	575	580	585
Power Selection (W)**	0 ~ +5				
Maximum Power Voltage- $V_{MPP}$ (V)	38.3	38.5	38.8	39.0	39.3
Maximum Power Current- $I_{MPP}$ (A)	14.76	14.79	14.83	14.86	14.90
Open Circuit Voltage- $V_{oc}$ (V)	45.6	45.8	46.1	46.3	46.6
Short Circuit Current- $I_{sc}$ (A)	15.81	15.85	15.90	15.94	15.99
Module Efficiency $\eta_m$ (%)	20.9	21.1	21.3	21.5	21.7

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- $P_{MAX}(W_p)$	428	431	435	439	443
Maximum Power Voltage- $V_{MPP}$ (V)	35.3	35.5	35.8	35.9	36.2
Maximum Power Current- $I_{MPP}$ (A)	12.10	12.13	12.17	12.20	12.24
Open Circuit Voltage- $V_{oc}$ (V)	42.9	43.1	43.4	43.6	43.9
Short Circuit Current- $I_{sc}$ (A)	12.74	12.77	12.81	12.84	12.88

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.

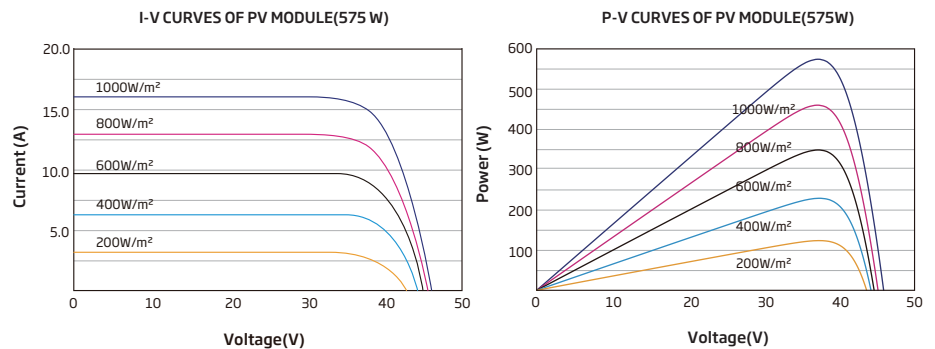
## MAXIMUM RATINGS

Operational Temperature -40~+85°C

Maximum System Voltage 1500V DC (IEC)

Max Series Fuse Rating 30A

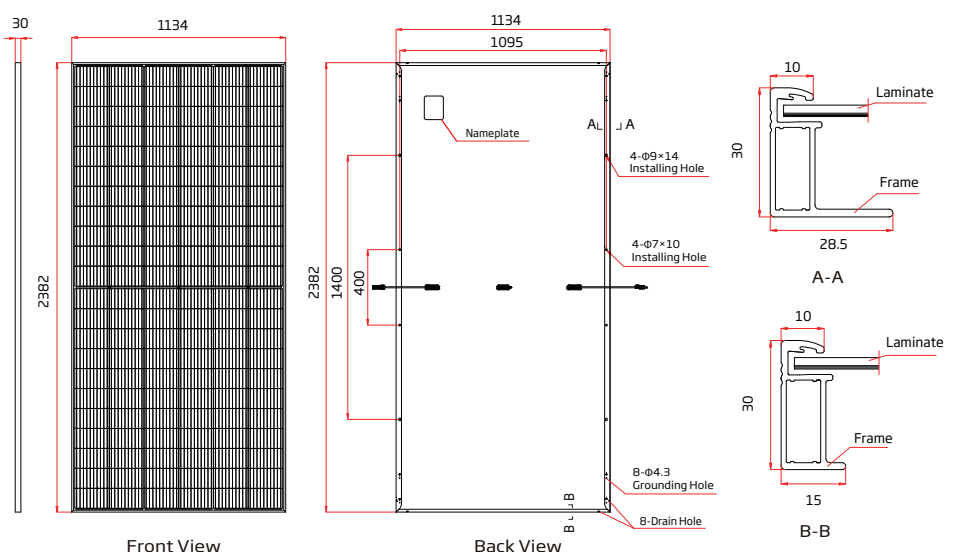
## CURVES OF PV MODULE



## MECHANICAL DATA

Solar Cells	Monocrystalline
No. of cells	132 cells
Module Dimensions	2382×1134×30 mm (93.78×44.65×1.18 inches)
Weight	28.1 kg (61.9 lb)
Front Glass	3.2mm (0.13 inches), 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: 720 pieces

\*Please refer to regional datasheet for specified connector.



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