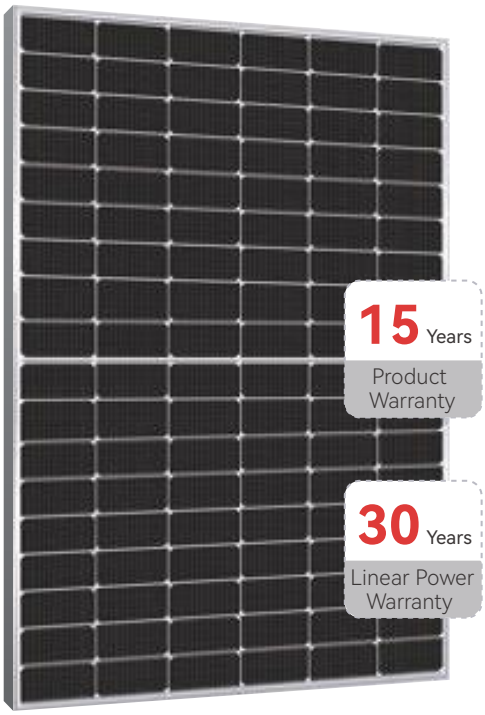
Grand Sunergy

Web: www.grandsunergy.com E-mail:sales@grandsunergy.com
Add: South Side to Pengcheng Boulevard, Xuzhou, China

High Efficiency HJT Module

GSM-MH4/108-BHDG450

430W | 435W | 440W | 445W | 450W

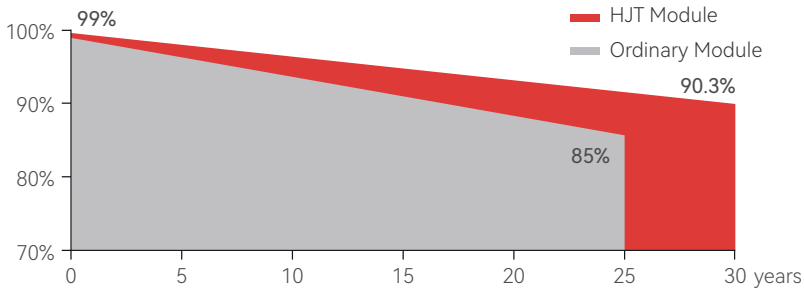


450W
Maximum Power Output

23.04%
Maximum Efficiency

90%+
Bifaciality

Quality Assurance



Product Features

SMBB Half Cell
Multi-busbar half-cell design, higher module efficiency and power output

G10 Cell / Module
G10 size wafer, applicable to multiple scenarios

High Reliability
Certified mechanical performance up to 5400 Pa positive load and 2400 Pa negative load, with better protection against harsh weather

High Energy Yield
Maximum Module Efficiency up to 23.04% achieved by mature mass production HJT cell technology

Better Warranty
Extremely low LID/PID in longer service life, with 9.7% power degradation over 30 years

Higher Performance
Excellent weak light performance and lower temperature coefficient, resulting in better energy yield in all-weather

Certificates

JP-AC

Grand Sunergy

GSM-MH4/108-BHDG 430-450 W

Electrical Data(STC)

Model	GSM-MH4/108-BHDG430	GSM-MH4/108-BHDG435	GSM-MH4/108-BHDG440	GSM-MH4/108-BHDG445	GSM-MH4/108-BHDG450
Pmax(Wp)	430	435	440	445	450
Voc(V)	40.30	40.55	40.80	41.05	41.30
Isc(A)	13.28	13.33	13.38	13.43	13.48
Vmpp(V)	33.54	33.79	34.04	34.29	34.54
Impp(A)	12.83	12.88	12.93	12.98	13.03
Efficiency	22.02%	22.28%	22.53%	22.79%	23.04%

STC: AM1.5 Irradiance: 1000W/m², Temperature=25℃

Electrical Characteristics(BSTC)

Model	GSM-MH4/108-BHDG430	GSM-MH4/108-BHDG435	GSM-MH4/108-BHDG440	GSM-MH4/108-BHDG445	GSM-MH4/108-BHDG450
Pmax(Wp)	489	494	499	504	509
Voc(V)	41.32	41.57	41.82	42.07	42.32
Isc(A)	14.67	14.71	14.75	14.89	15.03
Vmpp(V)	34.49	34.74	34.99	35.24	35.49
Impp(A)	14.18	14.22	14.26	14.30	14.34

αIsc (%/K): 0.04; βVoc (%/K): -0.24; γPmp (%/K): -0.24

BSTC: AM1.5, Front irradiance: 1000W/m², Back Irradiance135W/m², Temperature=25℃

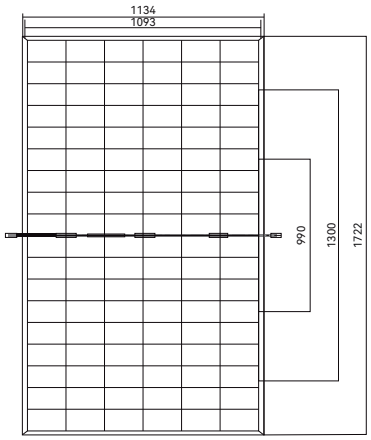
Mechanical Data

Cell(mm)	182×91 All Dimensions
Weight(kg)	21.5±0.5kg
Dimension(L×W×H)(mm)	1722×1134×30mm
Cable(mm)	4mm², 300mm (customized length based on needs)
Frame	Anodized aluminum
Junction Box	IP68, 1500VDC, 3Diodes
Packaging configuration (40'Container; 17.5'Trailer)	36pcs/pallet; 26pallet/container; 936pcs/container 36pcs/pallet; 32pallet/Trailer; 1152pcs/Trailer

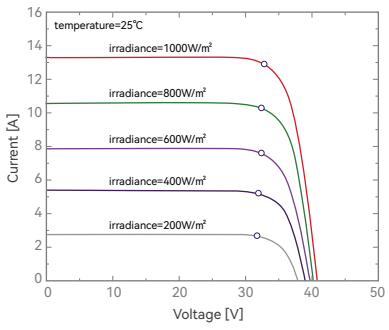
Working Condition

Maximum System Voltage	1500VDC
Operating Temperature	-40℃ ~ +85℃
Maximum Fuse Rating	30A
Rear Side Mechanical Load	2400Pa
Front Side Mechanical Load	5400Pa
NOCT	44±2℃
Safety Rating	Class II
Grounding Electric Conductivity	< 0.1Ω

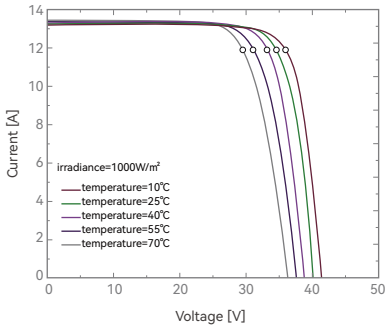
Dimensions (mm)



I-V Diagram



Different Irradiance



Different Temperature

*If the data is subject to change, the latest release shall prevail.

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