

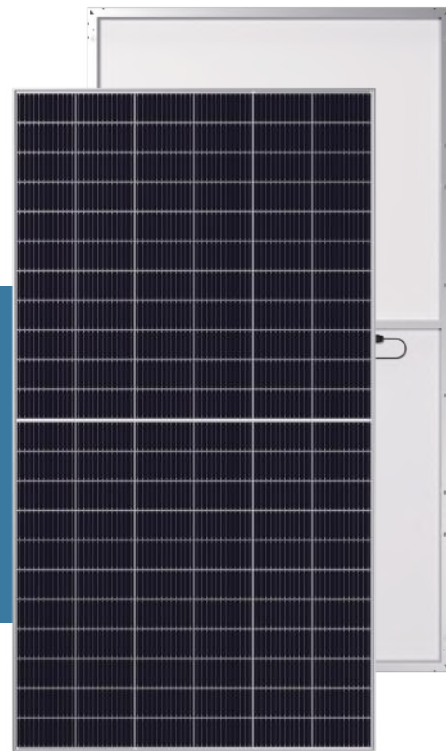
# DuDrive UltraMax Series

## TSHM-132HS 645-655

### Ultra High Efficiency Mono PERC Half-cell Solar Module (210)

#### ABOUT BEYONDSUN

Founded in 2008, Beyondsun is the world's leading PV manufacturer and one-stop solution provider. With multiple manufacturing bases and more than 8 branches around the world, our business covers cells, modules, aluminum frame and PV projects. With its advantages of continuous technological innovation, strong financial performance, and well-established global sales and service networks, Beyondsun has been highly recognized by its global partners. Until now, Beyondsun has distributed more than 8 GW PV products to over 30 countries all over the world. We are committed to collaborate with our partners in driving renewable energy together.



#### ULTRA HIGH MODULE EFFICIENCY

More power output with 210 MBB mono PERC half-cut cell



#### MORE ENERGY YIELD

Lower NMOT and better temperature coefficient by lower cell series resistance, helps boost energy yield



#### LOWER OPERATING TEMPERATURE, MORE RELIABLE

Lower operating temperature and hot spot temperature during the sunny day, making the module prevail during the sunny days



#### BETTER SHADING TOLERANCE

Thanks to paralleling circuit design, more power generated under shading condition and during morning & evening time



#### BETTER MICRO CRACK RESISTANCE

Minimize the impact by micro crack by limiting cell damage and potentially extending area by half-cut module architecture



#### 1500V SYSTEM VOLTAGE

Approved IEC1500Vdc system voltage, saving on BoS cost

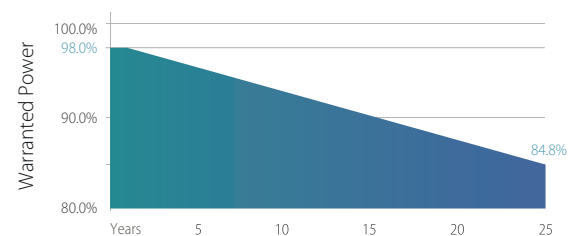
#### QUALIFICATIONS & CERTIFICATES

- IEC 61215 / IEC 61730
- ISO 9001: Quality Management System
- ISO 14001: Environment Management System
- OHSAS 18001: Occupational Health and Safety



#### INDUSTRY LEADING WARRANTY

- 25-Year** Linear Performance Warranty
- 12-Year** Product Material & Workmanship Warranty
- LLOYD'S** Product & Performance Insured by LLOYD'S



#### THE IDEAL SOLUTION FOR



Ground-mounted projects



Commercial / industrial rooftop projects

# DuDrive UltraMax Series TSHM-132HS 645-655

## ELECTRICAL PARAMETERS @ STC\*

Module Type	TSHM645-132HS	TSHM650-132HS	TSHM655-132HS
Max. Power Output Pmax (W)	645	650	655
Power Tolerance	0~+3%	0~+3%	0~+3%
Max. Power Voltage Vmp (V)	37.72	37.93	38.13
Max. Power Current Imp (A)	17.10	17.14	17.18
Open Circuit Voltage Voc (V)	44.82	45.02	45.22
Short Circuit Current Isc (A)	18.34	18.38	18.42
Module Efficiency (%)	20.76%	20.92%	21.09%

\*STC (Standard Test Condition): Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25 °C, Air Mass 1.5

## ELECTRICAL PARAMETERS @ NMOT\*

	484	488	492
Max. Power Output Pmax (W)	484	488	492
Max. Power Voltage Vmp (V)	35.10	35.32	35.50
Max. Power Current Imp (A)	13.79	13.82	13.86
Open Circuit Voltage Voc (V)	42.61	42.81	42.99
Short Circuit Current Isc (A)	14.79	14.83	14.86

\*NMOT (Nominal Module Operating Temperature), Irradiance of 800W/ m<sup>2</sup>, Spectrum AM 1.5, Ambient Temperature 20°C, Wind Speed 1m/s

## TEMPERATURE COEFFICIENTS

Temperature Coefficients of Pmp	-0.36%/°C
Temperature Coefficients of Voc	-0.29%/°C
Temperature Coefficients of Isc	+0.048 %/°C
NMOT	42°C±3°C

## MECHANICAL PARAMETERS

Cell Type	Mono, 210×105mm
Cell Arrangement	132pcs 2×(6×11)
Dimension (L×W×H)	2384×1303×35mm
Weight	34.5kg
Front Cover	3.2mm Tempered Glass
Frame	Anodized Aluminium Alloy
Junction Box	IP68, 3 Bypass Diodes
Cable	4mm <sup>2</sup>
Connector	PV Connector

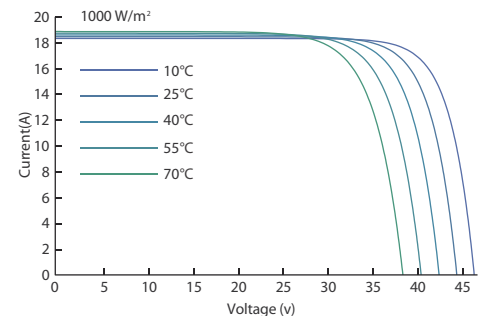
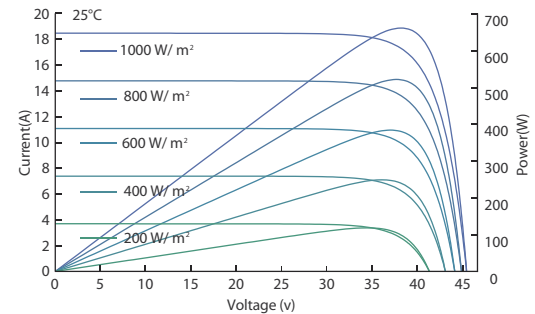
## OPERATING PARAMETERS

Maximum System Voltage(V)	1500V
Operating Temperature(°C)	-40°C ~ +85
Max. Wind Load / Snow Load(Pa)	2400/5400
Max. Over Current(A)	25
Application Class	Class A
Fire Rating	Class C

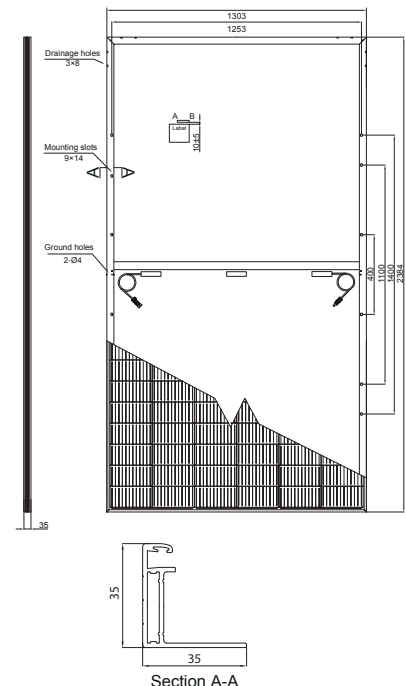
## PACKAGE INFORMATION

Quantity / Pallet	31 pcs
Container 40'HQ	17 pallets, 527 pcs

## I-V CURVES



## TECHNICAL DRAWINGS



\*The specification and key features described in this datasheet may deviate slightly and are not guaranteed. Due to ongoing innovation, R&D enhancement, Zhejiang Beyondsun Green Energy Technology Co., Ltd. reserves the right to make any adjustment to the information described herein at any time without notice. Please always obtain the most recent version of the datasheet which shall be duly incorporated into the binding contract made by the parties governing all transactions related to the purchase and sale of the products described herein.