


**CDF (Constructional Data Form) for Electrical Products**

Applicant .....	<b>Ningbo Osda Solar Co., Ltd.</b> 1-1, No.136, Haichuan Road, Jiangbei Area Ningbo City, Zhejiang Province, 315100, P.R.China
Manufacturer .....	<b>Ningbo Osda Solar Co., Ltd.</b> 1-1, No.136, Haichuan Road, Jiangbei Area Ningbo City, Zhejiang Province, 315100, P.R.China
Product .....	Crystalline Silicon Terrestrial Photovoltaic (PV) Modules
Standard(s) .....	IEC / EN 61215-1:2016; IEC / EN 61215-1-1:2016; IEC 61215-2:2016 / EN 61215-2:2017 + AC:2017 + AC:2018; IEC 61730-1:2016 / EN IEC 61730-1:2018 + AC:2018; IEC 61730-2:2016 / EN IEC 61730-2:2018 + AC:2018.
Trade mark .....	
Module type(s) .....	<b>PV Modules with 7" Half-cut Mono-crystalline Silicon Solar Cells:</b> 144 cells: ODAxxx-36V-MH (xxx=525-550, in increment of 5) 132 cells: ODAxxx-33V-MH (xxx=480-505, in increment of 5) 120 cells: ODAxxx-30V-MH (xxx=440-460, in increment of 5) 108 cells: ODAxxx-27V-MH (xxx=395-410, in increment of 5) <b>PV Modules with 6" Half-cut Mono-crystalline Silicon Solar Cells:</b> 144 cells: ODAxxx-36V-MH (xxx=430-460, in increment of 5) 132 cells: ODAxxx-33V-MH (xxx=395-420, in increment of 5) 120 cells: ODAxxx-30V-MH (xxx=360-380, in increment of 5)

**Electrical ratings:**

**PV Modules with 7" Half-cut Mono-crystalline Silicon Solar Cells:**

Module type .....	144 cells: ODAxxx-36V-MH (xxx=525-550, in increment of 5) For 7" mono cell 1		
Dimensions [mm] / l x w x h .....	2279 x 1134 x 35		
Rated Pmpp [W] .....	525; 530; 535; 540; 545; 550	Tolerance of rated Pmpp [%] .....	±3
Rated Voc [V] .....	49.10; 49.30; 49.50; 49.70; 49.90; 50.10	Tolerance of rated Voc [%] .....	±3
Rated Isc [A] .....	13.56; 13.65; 13.74; 13.83; 13.92; 14.01	Tolerance of rated Isc [%] .....	±3
Maximum system voltage [V] .....	1500	Safety class acc. to IEC 61140 .....	Class II
Min-creepage distance [mm] .....	13	Fuse rating [A] .....	20

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Design load (positive) [Pa] .....	1600 (for 4 clamps) 3600 (for 6 clamps)	Safety factor (positive).....	1.5
Design load (negative) [Pa] .....	1600	Safety factor (negative) .....	1.5

Module type .....	132 cells: ODAxxx-33V-MH (xxx=480-505, in increment of 5) For 7" mono cell 1		
Dimensions [mm] / l x w x h .....	2094 x 1134 x 35		
Rated Pmpp [W] .....	480; 485; 490; 495; 500; 505	Tolerance of rated Pmpp [%].....	±3
Rated Voc [V].....	44.94; 45.14; 45.34; 45.54; 45.74; 45.94	Tolerance of rated Voc [%].....	±3
Rated Isc [A] .....	13.46; 13.55; 13.64; 13.73; 13.82; 13.91	Tolerance of rated Isc [%].....	±3
Maximum system voltage [V].....	1500	Safety class acc. to IEC 61140.....	Class II
Min-creepage distance [mm] .....	13	Fuse rating [A] .....	20
Design load (positive) [Pa] .....	1600 (for 4 clamps) 3600 (for 6 clamps)	Safety factor (positive).....	1.5
Design load (negative) [Pa] .....	1600	Safety factor (negative) .....	1.5

Module type .....	120 cells: ODAxxx-30V-MH (xxx=440-460, in increment of 5) For 7" mono cell 1		
Dimensions [mm] / l x w x h .....	1909 x 1134 x 35		
Rated Pmpp [W] .....	440; 445; 450; 455; 460	Tolerance of rated Pmpp [%].....	±3
Rated Voc [V].....	41.00; 41.20; 41.40; 41.60; 41.80	Tolerance of rated Voc [%].....	±3
Rated Isc [A] .....	13.56; 13.65; 13.74; 13.83; 13.93	Tolerance of rated Isc [%].....	±3
Maximum system voltage [V].....	1500	Safety class acc. to IEC 61140.....	Class II
Min-creepage distance [mm] .....	13	Fuse rating [A] .....	20
Design load (positive) [Pa] .....	1600 (for 4 clamps) 3600 (for 6 clamps)	Safety factor (positive).....	1.5
Design load (negative) [Pa] .....	1600	Safety factor (negative) .....	1.5

Module type .....	108 cells: ODAxxx-27V-MH (xxx=395-410, in increment of 5) For 7" mono cell 1		
Dimensions [mm] / l x w x h .....	1724x 1134 x 35		
Rated Pmpp [W] .....	395; 400; 405; 410	Tolerance of rated Pmpp [%].....	±3

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Rated Voc [V]..... :	36.85; 37.05; 37.25; 37.45	Tolerance of rated Voc [%]..... :	±3
Rated Isc [A] .....	13.58; 13.67; 13.76; 13.85	Tolerance of rated Isc [%]..... :	±3
Maximum system voltage [V]..... :	1500	Safety class acc. to IEC 61140..... :	Class II
Min-creepage distance [mm] .....	13	Fuse rating [A] .....	20
Design load (positive) [Pa] .....	1600 (for 4 clamps) 3600 (for 6 clamps)	Safety factor (positive)..... :	1.5
Design load (negative) [Pa] .....	1600	Safety factor (negative) .....	1.5

**PV Modules with 6" Half-cut Mono-crystalline Silicon Solar Cells:**

Module type .....	144 cells: ODAxxx-36V-MH (xxx=430-460, in increment of 5) For 6" mono cell 1		
Dimensions [mm] / l x w x h .....	2094 x 1038 x 35		
Rated Pmpp [W] .....	430; 435; 440; 445; 450; 455; 460	Tolerance of rated Pmpp [%]..... :	±3
Rated Voc [V]..... :	48.50; 48.70; 48.90; 49.10; 49.30; 49.50; 49.70	Tolerance of rated Voc [%]..... :	±3
Rated Isc [A] .....	11.31; 11.39; 11.46; 11.53; 11.60; 11.66; 11.72	Tolerance of rated Isc [%]..... :	±3
Maximum system voltage [V]..... :	1500	Safety class acc. to IEC 61140..... :	Class II
Min-creepage distance [mm] .....	13	Fuse rating [A] .....	20
Design load (positive) [Pa] .....	1600 (for 4 clamps) 3600 (for 6 clamps)	Safety factor (positive)..... :	1.5
Design load (negative) [Pa] .....	1600	Safety factor (negative) .....	1.5

Module type .....	ODAxxx-33V-MH (xxx=395-420, in increment of 5) For 6" mono cell 1		
Dimensions [mm] / l x w x h .....	1925 x 1038 x 35		
Rated Pmpp [W] .....	395; 400; 405; 410; 415; 420	Tolerance of rated Pmpp [%]..... :	±3
Rated Voc [V]..... :	44.50; 44.70; 44.90; 45.10; 45.30; 45.50;	Tolerance of rated Voc [%]..... :	±3
Rated Isc [A] .....	11.36; 11.42; 11.48; 11.54; 11.60; 11.66	Tolerance of rated Isc [%]..... :	±3
Maximum system voltage [V]..... :	1500	Safety class acc. to IEC 61140..... :	Class II
Min-creepage distance [mm] .....	13	Fuse rating [A] .....	20

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File No.: PVP12078/21P

Attached to Test Report No.: 492011642.002

Design load (positive) [Pa] .....	1600 (for 4 clamps) 3600 (for 6 clamps)	Safety factor (positive).....	1.5
Design load (negative) [Pa] .....	1600	Safety factor (negative) .....	1.5

Module type .....	120 cells: ODAxxx-30V-MH (xxx=360-380, in increment of 5) For 6" mono cell 1		
Dimensions [mm] / l x w x h .....	1755 x 1038 x 35		
Rated Pmpp [W] .....	360; 365; 370; 375; 380	Tolerance of rated Pmpp [%].....	±3
Rated Voc [V].....	40.50; 40.80; 40.90; 41.10; 41.30	Tolerance of rated Voc [%] .....	±3
Rated Isc [A] .....	11.35; 11.43; 11.52; 11.60; 11.69	Tolerance of rated Isc [%].....	±3
Maximum system voltage [V].....	1500	Safety class acc. to IEC 61140.....	Class II
Min-creepage distance [mm] .....	13	Fuse rating [A] .....	20
Design load (positive) [Pa] .....	1600 (for 4 clamps) 3600 (for 6 clamps)	Safety factor (positive).....	1.5
Design load (negative) [Pa] .....	1600	Safety factor (negative) .....	1.5


**Copy of marking plate:**




**Model: ODAxxx-xxv-MH**

Rated Maximum Power (Pmax)	XXXXW
Tolerance (Tol)	±3%
Voltage at Pmax (Vmp)	XXXXV
Current at Pmax (Imp)	XXXXA
Open-Circuit Voltage (Voc)	XXXX±3V
Short-Circuit Current (Isc)	XXXX±3A
Nominal Operating Cell Temperature (NOCT)	45±2°C
Maximum System Voltage	1500VDC
Maximum Series Fuse Rating	20A
Operating Temperature	-40°C to 85°C
Application Class	Class A
Cell Technology	Mono-Si
Weight (kg)	XXXX
Dimensions (mm)	XXXX.XXX.XXX




Technical performance data recorded at Standard Test Conditions (STC)  
Am=1.5 E=1000 W/m<sup>2</sup> TC=25°C



**WARNING**  
Attention  
This unit contains hazardous materials.  
Do not dismantle or repair.  
See user manual for more details.



**Electrical Hazard**  
Resistor discharge






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**List of critical materials and components:**

Object	Manufacturer	Type	Technical Data	Remark
<b>Components</b>				
7" Mono cell 1	JA SOLAR Technology Co., Ltd.	JAC MEBP-B	Dimension (w x l) = 182mm x 91mm Cell area = 16507mm <sup>2</sup> Thickness = 180±18µm 11 busbars	Tested with PV modules
6" Mono cell 1	JA SOLAR Technology Co., Ltd.	JAC MABP-9	Dimension (w x l) = 166mm x 83mm Cell area = 13708mm <sup>2</sup> Thickness = 180±18µm 9 busbars	Tested with PV modules
Front cover	Xinyi PV products(Anhui) Holdings LTD.	AR coating tempered glass	Thickness = 3.2mm	Tested with PV modules
Rear cover	Cybird Technologies Inc.	Cynagard 205A(R)	PVDF / Polyester / PET / Primer coating 20µm / 8µm / 288µm / 4µm 320µm in total CTI = 600 (V) Color: White	Tested with PV modules CTI report no. 50176745 001 issued by TÜV Rheinland
Encapsulation material	Shanghai Tianyang Hot Melt Adhesives Co.,Ltd.	JCC-105P-T (between front cover and cell) / JCC-105P (between cell and rear cover)	Thickness = 0.45 - 0.55 mm CTI = 600 (V) Color: Transparent	Tested with PV modules CTI report no. 2017DACS00055 issued by CPVT
Frame parts	Jiangyin South New Energy Technology Co., Ltd.	6063-T5	Thickness = 35 mm Color: silvery Assembled by corner brace	Tested with PV modules
Adhesive (frame)	Shanghai Huitian New Chemical Co., Ltd.	HT906Z	Color: white	Tested with PV modules
Internal wiring (for interconnection cell-to-cell bus bar)	Greateen New Energy Technology Co., Ltd.	Copper belt with tin plated	Φ = 0.32mm Sn60%Pb40%	Tested with PV modules
Internal wiring (for inter-string connection)	Greateen New Energy Technology Co., Ltd.	Copper belt with tin plated	6.0 x 0.35 mm Sn60%Pb40%	Tested with PV modules
Soldering material	N/A	N/A	N/A	N/A
Fluxing agent	Singapore Asahi Chemical and Solder Industries Pte Ltd	SF105	-	Tested with PV modules
Fixing tape	Mctape electrical materials(Shanghai)Co., Ltd.	MK-8	Width = 8mm	Tested with PV modules
Insulation tape	Suzhou Usg Solar Technology Service Co., Ltd.	USG	Thickness = 0.3 mm	Tested with PV modules

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Object	Manufacturer	Type	Technical Data	Remark
<b>Junction box set 1</b>				
Junction box	Ningbo Economic & Technical Development zone hengda electrical CO., LTD	PV-JB070	Rated voltage = 1500VDC Rated current = 20A for junction box with diodes of GFT3050SM Rated current = 25A for junction box with diodes of GFT4050SM Number of diodes: 3	Certificate no. B 089469 0011 Rev.00
Adhesive (junction box)	Suzhou Tosan Adhesive Co., Ltd.	1527	Color: white	-
Potting material	Shanghai Huitian New Material Co.,Ltd.	HT-5299W	Color: white	-
Bypass diodes	SUZHOU GOOD-ARK ELECTRONIC CO., LTD	GFT4050SM	Tj max = 200°C If = 40A	-
	SUZHOU GOOD-ARK ELECTRONIC CO., LTD	GFT3050SM	Tj max = 200°C If = 30A	-
Cable	Wuxi Xinhongye Wire & Cable Co., Ltd.	H1Z2Z2-K 1x4.0 mm <sup>2</sup>	Rated voltage = 1500VDC	Certificate no. R 50311889
	Huzhou Shangfu Wire & Cable High Technology Co., Ltd.	H1Z2Z2-K 1x4.0 mm <sup>2</sup>	Rated voltage = 1500VDC	Certificate no. R 50334055
Connectors	Ningbo Economic & Technical development zone hengda electrical CO., LTD	PV-ST101	Rated voltage = 1500VDC Rated current = 30A	Certificate no. R 50386195
<b>Junction box set 2</b>				
Junction box	Jiangxi Jinko PV Material Co., Ltd.	PV-JK09Lxy (x = 2, y = 1 or 2)	Rated voltage = 1500VDC Rated current = 25A (x = 2, y = 1) Rated current = 30A (x = 2, y = 2) Number of diodes: 3	Certificate no. R 50354415
Adhesive	Shanghai Huitian New Material Co., Ltd.	HT906Z	Color: white	-
	TOSAN ADHESIVE INC	1527	Color: white	-
Potting material	Shanghai Huitian New Chemical Material Co., Ltd.	5299W-S	Color: white	-
	TOSAN ADHESIVE INC	1521	Color: white	-
Bypass diodes	Jiangxi Jinko PV Material Co., Ltd.	TPA4050-T (x = 2, y = 1)	Tj max=200°C If=40A	-
		TPA4050B-T (x = 2, y = 1)	Tj max=200°C If=40A	-
		TPA4050A-T (x = 2, y = 2)	Tj max=200°C If=40A	-
Cable	DongGuan xinbeisen Wire and Cable Co., Ltd.	H1Z2Z2-K 1x4.0mm <sup>2</sup>	Rated voltage = 1500VDC	Certificate no. R 50355846
	Suzhou Baohing Electric Wire & Cable Co., Ltd.	H1Z2Z2-K 1x4.0mm <sup>2</sup>	Rated voltage = 1500VDC	Certificate no. R 50310426

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Object	Manufacturer	Type	Technical Data	Remark
	Jiangxi HeJia Technology Co., Ltd.	H1Z2Z2-K 1×4.0mm <sup>2</sup>	Rated voltage = 1500VDC	Certificate no. R 50346833
	Ningbo Kibor Wire&Cable Co., Ltd.	H1Z2Z2-K 1×4.0mm <sup>2</sup>	Rated voltage = 1500VDC	Certificate no. R 50302047
	Wuxi Xinhongye Wire&Cable Co., Ltd.	H1Z2Z2-K 1×4.0mm <sup>2</sup>	Rated voltage = 1500VDC	Certificate no. R 50311889
Connectors	Jiangxi Jinko PV Material Co., Ltd.	PV-JK03M/xy (Plug +Socket) (x=2, y=B)	Rated voltage = 1500VDC Rated current = 45A	Certificate no.: R 50318165
<b>Junction box set 3</b>				
Junction box	Shanghai JA Solar Technology Co., Ltd.	PVJB-JA-004	Rated voltage =1500VDC Rated current = 25A Number of diodes: 3	Certificate no. B 072092 0287 Rev.05 Test with modules
Adhesive	Shanghai Huitian New Material Co., Ltd.	HT906Z	Color: white	-
	Suzhou Tosan Adhesive Co., Ltd.	1527	Color: white	Test with modules
Potting material	Shanghai Huitian New Chemical Material Co., Ltd.	HT-5299W-S	Color: white	-
	TOSAN ADHESIVE INC	TS1521	Color: white	-
Bypass diodes	PAN JIT INTERNATONAL INC	SBT4050DY	Tj max=200°C If=40A	-
Cable	Shanghai JA Solar Technology Co., Ltd.	H1Z2Z2-K 1×4.0mm <sup>2</sup>	Rated voltage = 1500VDC	Certificate no. B 161172092162
Connectors	QC Solar(Suzhou) Corporation.	QC4.10-cd	Rated voltage = 1500VDC Rated current = 41A	Certificate no.: R 50353779

Remark:

- (1) Fire test Class C according to ANSI/UL 1703-2018 (MST 23 of IEC / EN 61730-2) has been evaluated on all the raw materials listed above.
- (2) Pollution degree I (Sequence B1 of IEC / EN 61730-2) has been evaluated on all the raw materials listed above.
- (3) Those materials marked in blue are added in most recent project.

----- End of CDF -----

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