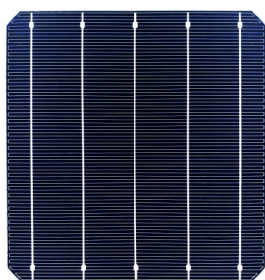




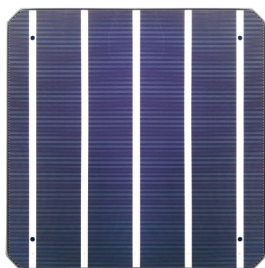
Specification of N-type mono-crystalline silicon hetero-junction double-sided solar cell

High efficiency mono-crystalline hetero-junction double-sided solar cell (HDT), can generate power from both sides. It uses N-type mono-crystalline silicon as substrate. A thin layer of intrinsic hydrogenated amorphous silicon is deposited on both sides of the silicon substrate followed by the P-type and N-type thin film silicon.

This process improves the performance of P N junction, enabling the HDT solar cell to achieve one of the highest conversion efficiency in the world. HDT solar cell has low manufacturing process temperature, high conversion efficiency and low temperature coefficient.



Front side



Rear side

Characteristics



High efficiency

HDT solar cells adopt high conductive metallic bars technology, and the conversion efficiency is improved by **10%-20%** compared with traditional crystalline silicon cells.



Double-sided power generation

The double-sided light absorption of the cells can be packaged into double-glass module, Rear power generation can increase power generation gain by **10%-20%**.



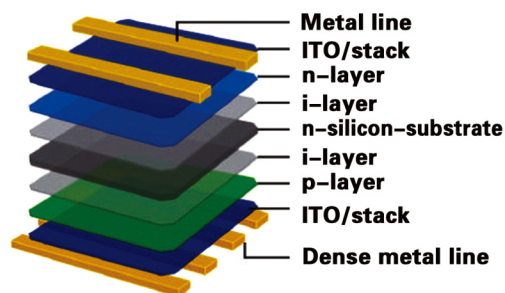
Excellent temperature performance

The power coefficient of the cell is lower than $-0.28\%/^{\circ}\text{C}$. Compared with the traditional crystalline silicon cell, the temperature coefficient is reduced by 40% under high temperature environment which result in the power generation increase by 6-9%.

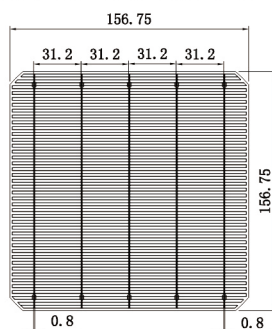


High stability

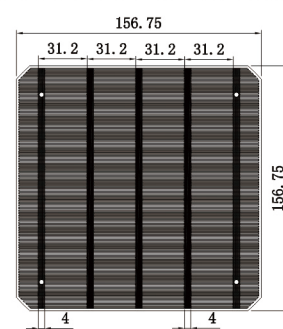
The cell adopts N-type single crystalline silicon cell has no PID and LETID effect into the GS anti-high temperature technology. Compared with the traditional crystalline silicon cell, the light-induced attenuation rate is reduced by **50%**.



The chip structure of HDT solar cell



Front side grid line pattern



Rear side grid line pattern

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E-mail: sales@gs-solar.com



Physical Parameters

Substrate Material	N-type mono-crystalline silicon wafer
Size	156.75 mm × 156.75 mm ± 0.25 mm
Thickness	180 μm ± 20 μm
Rear Side Electrode (+)	5Busbars/4 mm width
Front Side Electrode (-)	5Busbars/0.8 mm width

Electrical Parameters

Name	N-type monocrystalline silicon heterojunction double-side solar cell									
Type	HDT-C-C									
Bin	HC216		HC218		HC220		HC222		HC224	
	Front side	Rear side	Front side	Rear side	Front side	Rear side	Front side	Rear side	Front side	Rear side
Efficiency contribution(%)	21.6–21.8	18.8–19.2	21.8–22.0	19.1–19.5	22.0–22.2	19.3–19.7	22.2–22.4	19.4–19.8	22.4–22.6	19.5–19.8
Isc (A)	9.19	8.09	9.20	8.10	9.21	8.11	9.21	8.11	9.21	8.12
Voc (v)	0.725	0.722	0.727	0.724	0.730	0.727	0.732	0.730	0.733	0.731
FF (%)	79.6	79.2	79.9	79.6	80.2	80.0	80.8	80.6	81.1	80.9
Imp (A)	8.62	7.57	8.61	7.60	8.65	7.61	8.66	7.61	8.66	7.62
Vmpp (v)	0.615	0.611	0.618	0.615	0.624	0.620	0.629	0.626	0.632	0.630
Pmpp (w)	5.30	4.63	5.34	4.68	5.39	4.73	5.45	4.77	5.48	4.80

Standard test condition (STC): Air Mass 1.5, Irradiance 1000W/m², Cell Temperature 25°C

Temperature coefficient

Temperature coefficient of Isc	Temperature coefficient of Voc	Temperature coefficient of Pmax
+0.059%/K	-0.277%/K	-0.28%/K

• Operating Temperature

Operating temperature range: -40°C ~ +85°C.

• Packaging

1. 120 pieces of solar cell per inner box;
2. 10 boxes per carton, total 1200 pieces of solar cell per carton.

• Attentions

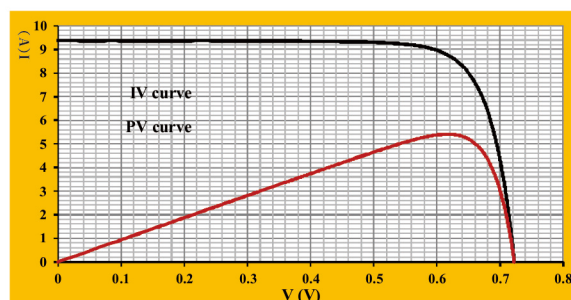
To avoid electrical and soldering performance degradation, the following operations should be avoided:

1. DO NOT touch the solar cells by bare hand;
2. Keep solar cells away from chemical solutions or gases;
3. Keep solar cells away from oil;
4. DO NOT wiping the surface of the solar cells;
5. The soldering temperature should be less than 200 °C, and the soldering time should be less than 3 seconds.

• Storage

1. Away from corrosion chemical liquid or gases, the temperature of the storage environment is 25 ± 3 °C, and the humidity is < 60%;
2. Suggested to use within 6 months, and please keep the cells in the packing box .

I-V Curve



Standard test condition (STC):

Air Mass 1.5, Irradiance 1000W/m², Cell Temperature 25°C

• Certifications



• Note:

Due to ongoing research and development, innovation and product upgrading, the content in the product specification can be changed without prior notice.