

DATASHEET SOLAR CELLS PERC 5BB G1 - 158.75 mm

Normative references

Document number	Title
IEC 60904-1 Ed.2.0	Photovoltaic devices – Part 1: measurements of photovoltaic current-voltage characteristics
IEC 60904-3 Ed.2.0	Photovoltaic devices – Part 3: Measurement principles for terrestrial photovoltaic (PV) solar devices with reference spectral irradiance data
IEC 60904-7 Ed.3.0	Photovoltaic devices – Part 7: Computation of spectral mismatch error introduced in the testing of a photovoltaic device
IEC 61215 Ed.2.0	Crystalline silicon terrestrial photovoltaic (PV) modules – Design qualification and type approval

Specification

3.1 Cell structure

Tab 1 Cell Structure

Substrate material	P-type mono-crystalline silicon wafer - PERC
Cell thickness	180µm±20µm,
Dimension	158.75±0.5mm
Diagonal	223mm±0.5mm
Front(-)	Alkali textured surface, blue silicon nitride AR coating
	Silver busbars for the front electrodes
Back(+)	Aluminum oxide back-surface field
	silver soldering pads for the backside electrodes

Front silver pastes : DKEM Series, SAMSUNG Series 8800, Heraeus Series, JuHe Series, GiGaSolar Series.

Aluminum pastes : Rutech Series 28DXX, T-SUN Series, HOYI Series.

Back silver pastes : HOYI Series, Rutech Series, Gonda Series,



Tel e Fax n° +39 0131 1850037
Via F.Santi 27 – Zona ind. D4
15121 Alessandria ITALY
Vat code IT 02186780066

3.2 Printing pattern and Electric characteristics

3.2.1 Electrical Data

Grade	Unit	2230	2220	2210	2200	2190	2180
Voc	V	0.679	0.678	0.677	0.676	0.674	0.673
Isc	A	10.310	10.306	10.290	10.280	10.268	10.243
Vmp	V	0.579	0.578	0.576	0.574	0.572	0.571
Imp	A	9.790	9.776	9.756	9.745	9.728	9.710
Pmax	W	5.62	5.59	5.57	5.54	5.52	5.49
Efficiency	%	22.3	22.2	22.1	22.0	21.9	21.8

Electrical Data of P-type mono-Crystalline PERC silicon solar cells

Irev2: <1A @-12V Rsh>30Ω

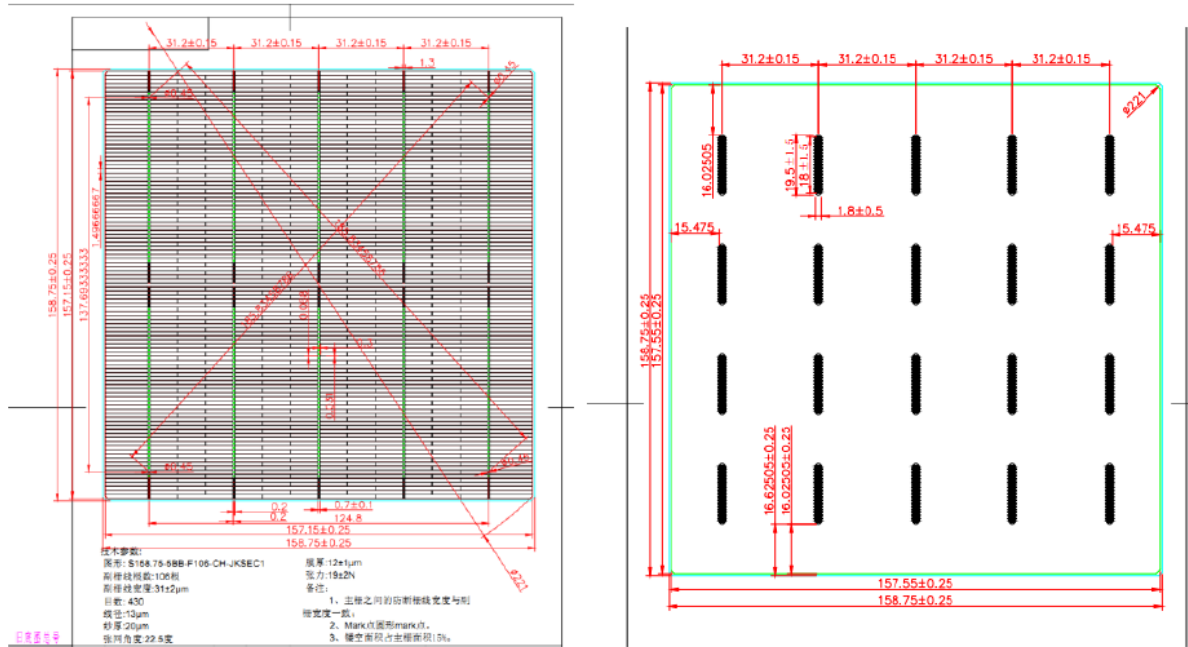
The electrical data apply to standard test conditions(STC):

Irradiance of 1000W/m², with spectrum AM 1.5 and a cell temperature of 25 °C.

The above data are average figures presently measured. Reference data are calibrated by Fraunhofer ISE.

Just for reference.

3.2.2 Printing patterns and parameters



Patterns and parameters of mono-Crystalline PERC silicon solar cell

Temperature Coefficient (Typical data for reference)

Voc.Temp.Coef	- (2.244±0.005) mV/K
Isc.Temp.Coef	+ (0.024±0.005) mA/cm²/K

3.3 Light induced degradation test

Using Xenon lamp (Irradiance of 1000W/m², with spectrum AM 1.5) to irradiate test cells, after a total irradiation of 5 kwh/m², the degradation of maximum output power of cells is ≤1.8%.

3.4 CTM

Lower cell to module(CTM) power loss : <4%.

3.5 Anti-PID

Potential Induced Degradation(-1000V,96Hrs):<5%