



CSG PVTech

Solar Cells

Empowering minds for a brighter future

CSG-MM 156 Series 156×156mm Poly-Crystalline Cells

1. High Performance and Advantages

- CSG Solar Cells production processes are fully inspected from the silicon wafer input to cells packaging.
- The results from series production have shown a mean efficiency of 16.60%. Our manufacturing techniques allow us to produce super-efficient solar cells with efficiency up to 17.4 %.

Production and quality control

- Current measurement under STC to avoid module mismatches. Hot spot resistance testing of every single cell via the reverse current characteristic.
- Across-the-board soft handling during production to avoid micro cracks and reduce breakage rates during onward processing.
- High-quality, homogeneous appearance due to mono-crystalline material and steady QC processes.

Electrical Properties

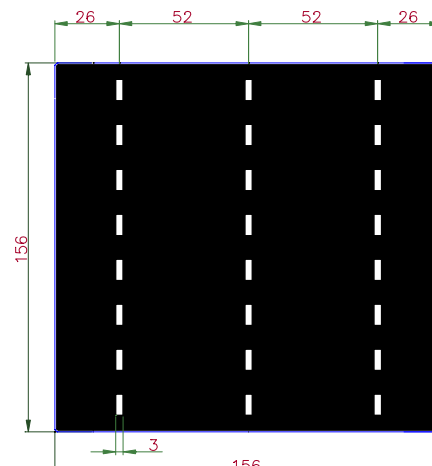
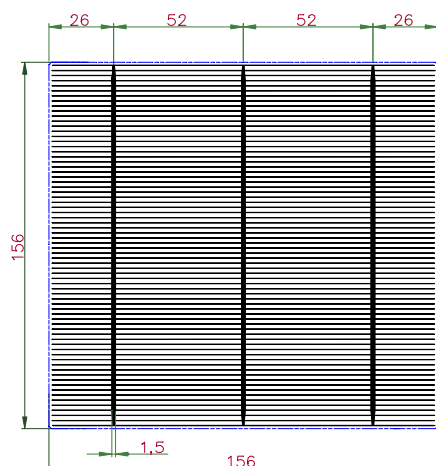
- Excellent long-term electrical stability through crystalline silicon technology.
- Excellent low light behavior thanks to parallel resistance checks on every cell.
- Classification into very narrow current classes.

Onward processing recommendations

- Solder joint: tin-coated copper ribbons, coated with 10 – 15µm 64%Sn/36%Pb.

2. Mechanical Data and Design

- **Product:** Multi-crystalline silicon solar cell
- **Format:** 156mm x 156mm +/- 0.5 mm,
- **Average thickness:** 190µm +/- 30 µm;
- **Front (-):** 1.5 mm bus bars (silver),
blue anti-reflecting coating (silicon nitride)
- **Back (+):** 3.0 mm wide soldering pads (silver),
back surface field (aluminium)





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3. Electrical Characteristics

Class	Efficiency(%)	Max Pwer Pm(Wp)	Max Power Current Im(A)	Max Power Voltage	Short Circuit Current	Open Circuit Voltage
				Vm(mV)	Isc(A)	Voc(mV)
CSG-MM156-E16	>17.60	4.28	8.09	532	8.61±2%	632±2%
CSG-MM156-E15	17.50~17.60	4.26	8.07	530	8.59±2%	631±2%
CSG-MM156-E14	17.40~17.50	4.23	8.05	529	8.57±2%	630±2%
CSG-MM156-E17	17.30~17.40	4.21	8.03	527	8.55±2%	629±2%
CSG-MM156-E16	17.20~17.30	4.18	8.00	525	8.52±2%	628±2%
CSG-MM156-E15	17.10~17.20	4.16	7.97	524	8.49±2%	627±2%
CSG-MM156-E14	17.00~17.10	4.14	7.95	522	8.47±2%	625±2%
CSG-MM156-E13	16.90~17.00	4.11	7.93	520	8.44±2%	624±2%
CSG-MM156-E12	16.80~16.90	4.09	7.90	519	8.41±2%	622±2%
CSG-MM156-E11	16.70~16.80	4.06	7.875	517	8.39±2%	620±2%
CSG-MM156-E10	16.60~16.70	4.04	7.85	516	8.36±2%	618±2%
CSG-MM156-E09	16.50~16.60	4.01	7.83	515	8.33±2%	617±2%
CSG-MM156-E08	16.40~16.50	3.99	7.79	514	8.30±2%	616±2%
CSG-MM156-E07	16.30~16.40	3.97	7.77	512	8.27±2%	614±2%
CSG-MM156-E06	16.20~16.30	3.94	7.745	510	8.26±2%	613±2%
CSG-MM156-E05	16.00~16.20	3.92	7.705	509	8.22±2%	611±2%
CSG-MM156-E04	15.80~16.00	3.87	7.63	508	8.16±2%	609±2%
CSG-MM156-E03	15.00~15.80	3.75	7.55	505	8.13±2%	607±2%
CSG-MM156-E02	13.00~15.00	3.41	7.26	470	8.10±2%	600±2%
CSG-MM156-E01	<13.0	<3.16				

All data at standard testing condition: STC=1000W/m², AM 1.5, 25℃, Pmax: 1.5% rel., Efficiency: 0.2% abs.

4. Performances

