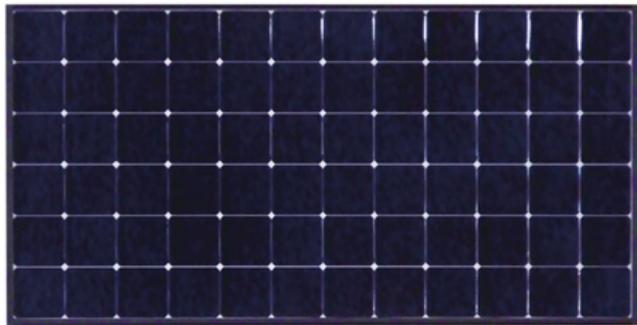


Mar 02, 2016

## Panasonic Photovoltaic Module Achieves World's Highest Energy Conversion Efficiency\*1 of 23.8%\*2 at Research Level



【Image of Module】

**Osaka, Japan** - Panasonic Corporation today announced that it has achieved a photovoltaic module conversion efficiency of 23.8% (aperture area\*3 : 11,562 cm<sup>2</sup>) at research level, a major increase over the previous world record for crystalline silicon-based photovoltaic modules.

The previous record for the conversion efficiency of a crystalline silicon-based photovoltaic module was 22.8% \*4. Panasonic has broken the record for the world highest conversion efficiency by a full percentage point. Panasonic had announced a world's highest conversion efficiency of 25.6%\*4 in its silicon heterojunction cells in April 2014. Herewith, Panasonic holds the world records of conversion efficiency for both crystalline silicon-based solar cells and modules.

Panasonic developed a unique silicon heterojunction structure\*5 composed of crystalline silicon substrate and amorphous silicon layers, and has continuously improved its photovoltaic module HIT™ using silicon heterojunction since the start of commercial production. This new record was achieved by further development of Panasonic's proprietary heterojunction technology for high-efficiency solar cells and modules adopting a back-contact solar cell structure\*6.

Going forward, Panasonic will continue to pursue technology development of its photovoltaic module HIT™, aimed at realizing higher efficiency, higher reliability and lower costs, and will work towards mass production.

\*HIT is a trademark of the Panasonic Group.

\*1 According to research by Panasonic as of February 18, 2016, for crystalline silicon photovoltaic modules.

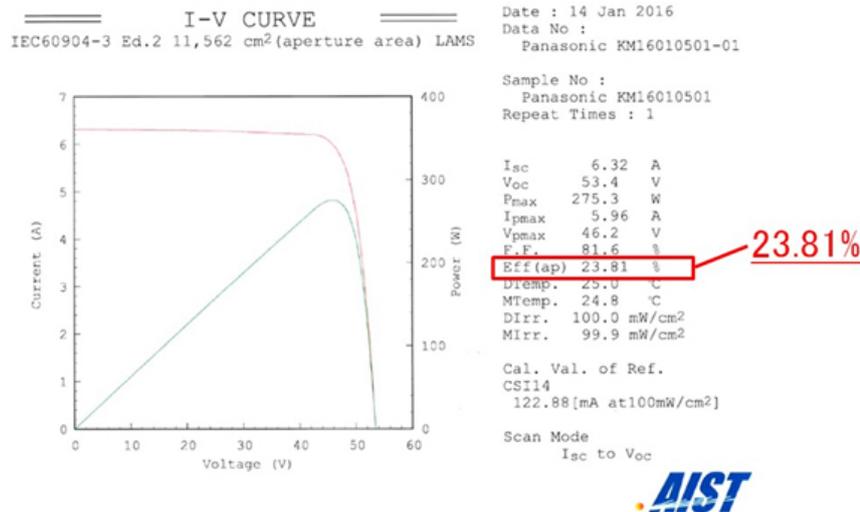
\*2 Result of evaluations at the National Institute of Advanced Industrial Science and Technology (AIST).

\*3 The module area is the aperture area opened by the masks (11,562 cm<sup>2</sup>).

\*4 SunPower (USA) November, 2015. Judged from the "Solar cell efficiency tables(version 47)" [Prog. Photovolt: Res. Appl. 2016; 24:3-11]

\*5 Technology for junction formation required for solar cells that covers the silicon base surface with an amorphous silicon layer. This technology has the key feature of superior passivation to compensate for the many flaws around the silicon base surface area.

\*6 Technology for eliminating the shadow loss on the front side electrode with the electrodes on the back of the solar cell, which allows the more efficient utilization of sunlight.



【Results at the National Institute of Advanced Industrial Science and Technology (AIST)】

## About Panasonic

Panasonic Corporation is a worldwide leader in the development of diverse electronics technologies and solutions for customers in the consumer electronics, housing, automotive, enterprise solutions and device industries. Since its founding in 1918, the company has expanded globally and now operates 468 subsidiaries and 94 associated companies worldwide, recording consolidated net sales of 7.715 trillion yen for the year ended March 31, 2015. Committed to pursuing new value through innovation across divisional lines, the company uses its technologies to create a better life and a better world for its customers. To learn more about Panasonic:

<http://www.panasonic.com/global>

## Media Contacts:

### Public Relations Department

Panasonic Corporation

Tel: +81-(0)3-3574-5664 Fax: +81-(0)3-3574-5699

Panasonic News Bureau

Tel: +81-(0)3-3542-6205 Fax: +81-(0)3-3542-9018

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