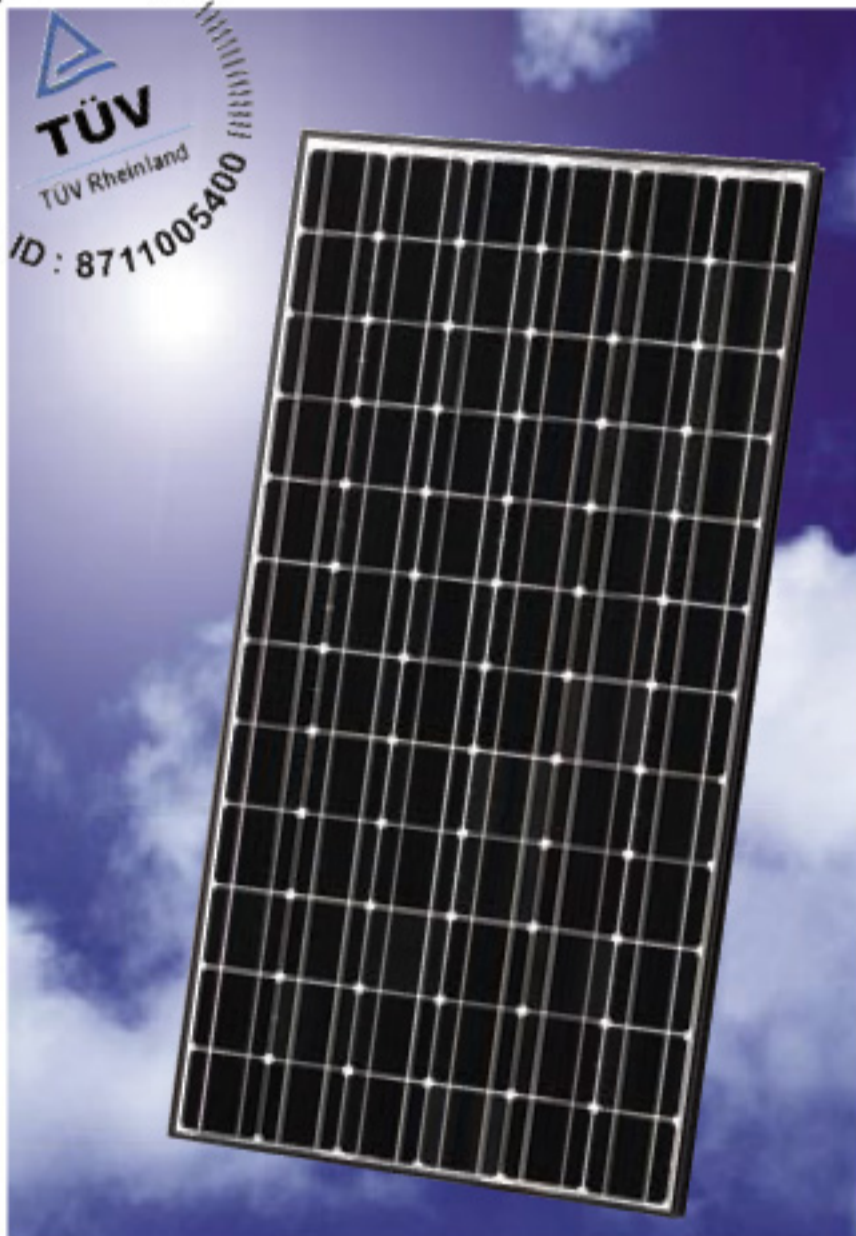


# HIT PHOTOVOLTAIC MODULE

## HIP-215NHE5, HIP-210NHE5, HIP-205NHE5

The SANYO HIT (Heterojunction with Intrinsic Thin layer) solar cell is made of a thin mono crystalline silicon wafer surrounded by ultra-thin amorphous silicon layers. This product provides the industry's leading performance and value using state-of-the-art manufacturing techniques.



### Benefit in Terms of Performance

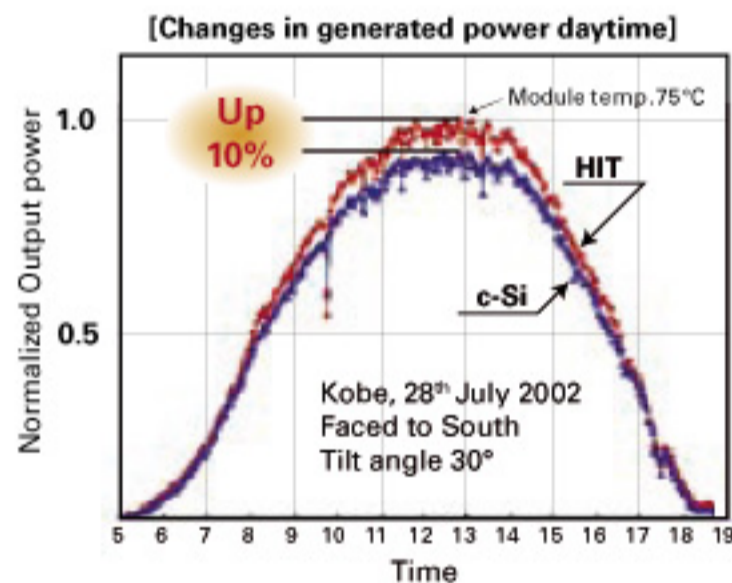
High efficiency cell

| Model       | Cell Efficiency | Module Efficiency |
|-------------|-----------------|-------------------|
| HIP-215NHE5 | 19.3%           | 17.2%             |
| HIP-210NHE5 | 18.7%           | 16.8%             |
| HIP-205NHE5 | 18.2%           | 16.4%             |

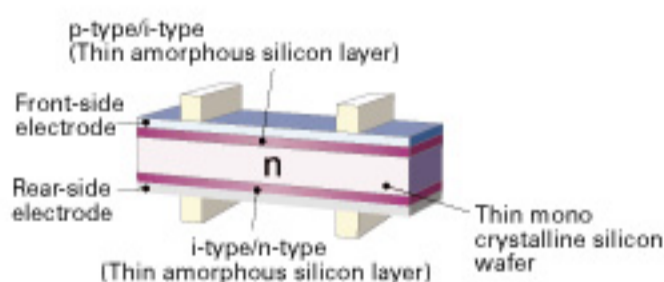
The HIT cell and module have the world's highest level of conversion efficiency in mass production.

### High performance at high temperatures

Even at high temperatures, the HIT solar cell can maintain higher efficiency than a conventional crystalline silicon solar cell.



### HIT Solar Cell Structure



Development of HIT solar cell was supported in part by the New Energy and Industrial Technology Development Organization (NEDO).

### Environmental Friendly Solar Cell

#### More Clean Energy

HIT can generate more annual power output per unit area than other conventional crystalline silicon solar cells.

#### Special Features

SANYO HIT solar modules are 100% emission free, have no moving parts and produce no noise. The dimensions of the HIT modules allow space-saving installation and achievement of maximum output power possible on given roof area.

### Benefit in Terms of Quality

#### High quality in accordance with ISO 9001 and 14001 standards

HIT solar cell and modules are subject to strict inspections and measurements to ensure compliance with electrical, mechanical and visual criteria.

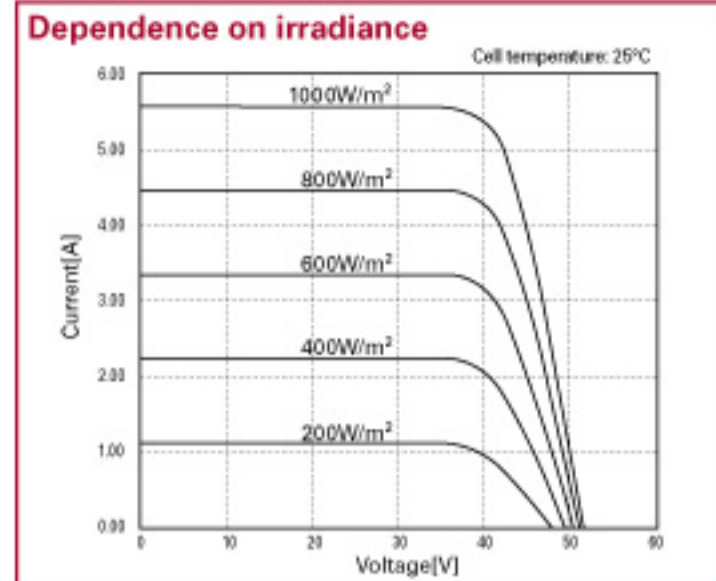
# Electrical and Mechanical Characteristics

## HIP-215NHE5, HIP-210NHE5, HIP-205NHE5

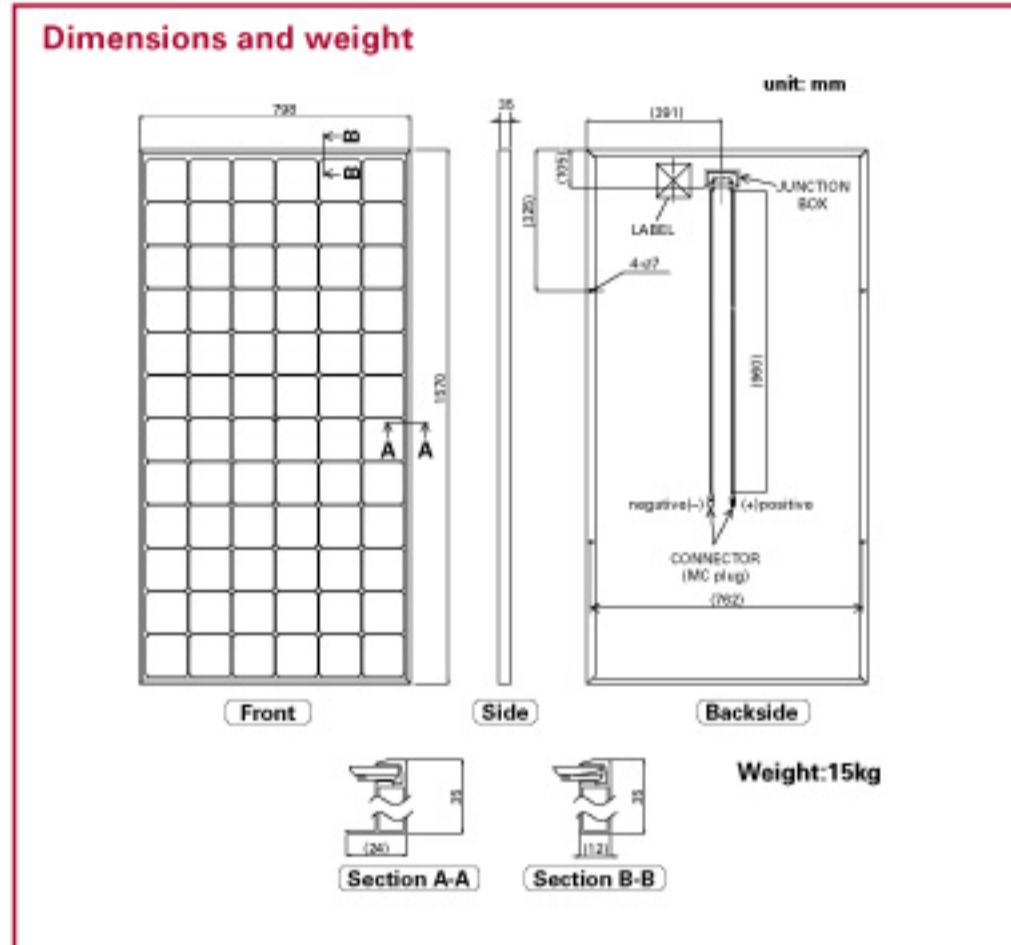
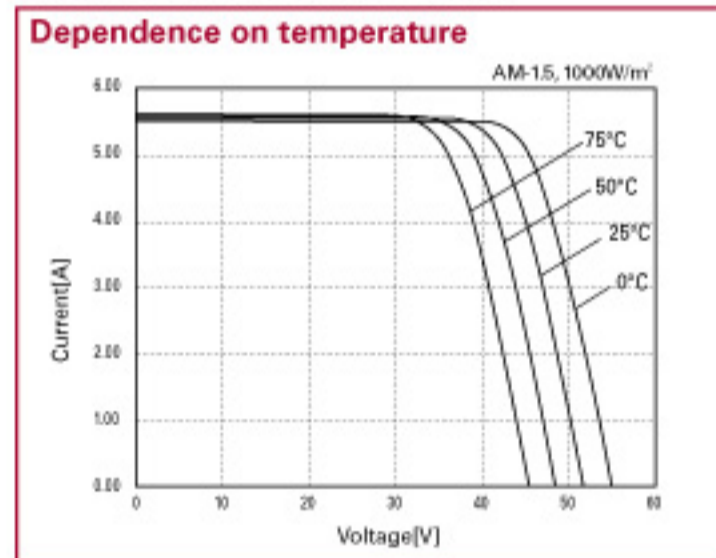
| Models HIP-xxxNHE5              |             |        |        |        |
|---------------------------------|-------------|--------|--------|--------|
| Electrical data                 |             | 215    | 210    | 205    |
| Maximum power (Pmax)            | [W]         | 215    | 210    | 205    |
| Max. power voltage (Vpm)        | [V]         | 42.0   | 41.3   | 40.7   |
| Max. power current (Ipm)        | [A]         | 5.13   | 5.09   | 5.05   |
| Open circuit voltage (Voc)      | [V]         | 51.6   | 50.9   | 50.3   |
| Short circuit current (Isc)     | [A]         | 5.61   | 5.57   | 5.54   |
| Warranted minimum power (Pmin)  | [W]         | 204.3  | 199.5  | 194.8  |
| Output power tolerance          | [%]         | +10/-5 |        |        |
| Maximum system voltage          | [Vdc]       | 1000   |        |        |
| Temperature coefficient of Pmax | [%/°C]      | -0.3   |        |        |
|                                 | Voc [V/°C]  | -0.129 | -0.127 | -0.126 |
|                                 | Isc [mA/°C] | 1.68   | 1.67   | 1.66   |

Note 1: Standard test conditions: Air mass 1.5, Irradiance = 1000W/m<sup>2</sup>, Cell temperature = 25°C  
 Note 2: The values in the above table are nominal.

Reference data for model HIP-215NHE5



Reference data for model HIP-215NHE5



### Certificates



Please consult your local dealer for more information.

### Warranty

Power output: 20 years (80% of minimum output power (Pmin))  
 Product workmanship: 2 years  
 (Based on contract terms)

**CAUTION!** Please read the operating instructions carefully before using the products.

Due to our policy of continual improvement the products covered by this brochure may be changed without notice.

SANYO Component Europe GmbH  
 Clean Energy Division

Stahlgruberring 4  
 81829 Munich, Germany  
 TEL: +49-(0)89-46 00 95-0  
 FAX: +49-(0)89-46 00 95-170  
<http://www.sanyo-component.com>  
 email: info.solar@sanyo-component.com



SANYO Electric Co., Ltd.  
 Clean Energy Company

[http://www.sanyo.co.jp/clean/solar/hit\\_e/index\\_e.html](http://www.sanyo.co.jp/clean/solar/hit_e/index_e.html)  
 email: sola1011115@sanyo.co.jp