

**R&D  
technology  
adaptation**

Reduction of carrier recombination loss

- preserving as much of the generated electricity as possible
- realizing even higher voltage

Use resources effectively

- by cutting the wafer almost round the HD cell produces less material waste
- compact module size but high power generation

**HD  
cell  
design**

**18.0%\***  
180 W/m<sup>2</sup>

**Anti-  
reflection  
glass**

Reduction of optical loss

- enabling as much incoming sunlight as possible to reach the electrical generating layer (crystalline silicon)
- retrieving even higher current



\* For H250

**HIT cell technology**

The HIT (Heterojunction with Intrinsic Thin layer) solar cell is made of a thin monocrystalline 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. The development of the HIT solar cell was supported in part by the New Energy and Industrial Technology Development Organization (NEDO).

**Quality**

Panasonic is truly committed to quality since it began developing and manufacturing solar PV modules in 1975. Our long track record is supported with our claim-rate of only 0.00214 % or 62 product-guarantee cases out of 2,885,689 solar modules produced in our European factory in Dorog, Hungary (as of Nov. 2011) with 0 cases of output guarantee and 0 guarantee-related legal challenges.

**Special features**

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

**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<sup>®</sup> HD solar cell

Changes in generated power daytime



HIT is a registered trademark of SANYO Electric Co., Ltd. The name "HIT" comes from "Heterojunction with intrinsic Thin-layer" which is an original technology of SANYO Electric Co., Ltd.

The HIT cell and module have very high conversion efficiency in mass production.

Model	Cell Efficiency	Module Efficiency	Output/m <sup>2</sup>
H250	20.8%	18.0%	180 W/m <sup>2</sup>
H245	20.4%	17.7%	177 W/m <sup>2</sup>

### Electrical data (at STC)

	VBHH250AE01	VBHH245AE01
Maximum Power (Pmax) [W]	250	245
Max. power voltage (Vmp) [V]	34.9	34.4
Max. power current (Imp) [A]	7.18	7.14
Open circuit voltage (Voc) [V]	43.1	42.7
Short circuit current (Isc) [A]	7.74	7.73
Maximum over current rating [A]	15	
Output power tolerance [%]	+10/-5*	
Maximum system voltage [V]	1000	

Note: Standard Test Conditions: Air mass 1.5, Irradiance = 1000W/m<sup>2</sup>, cell temperature = 25°C  
 \* All modules measured by SANYO facility have output with positive tolerance

### Temperature characteristics

	VBHH250AE01	VBHH245AE01
Temperature (NOCT) [°C]	46.0	46.0
Temp. coefficient of Pmax [%/°C]	-0.30	-0.30
Temp. coefficient of Voc [V/°C]	-0.108	-0.107
Temp. coefficient of Isc [mA/°C]	2.32	2.32

### At NOCT

	VBHH250AE01	VBHH245AE01
Maximum power (Pmax) [W]	188.9	185.4
Max. power voltage (Vmp) [V]	32.8	32.4
Max. power current (Imp) [A]	5.76	5.73
Open circuit voltage (Voc) [V]	40.5	40.1
Short circuit current (Isc) [A]	6.23	6.23

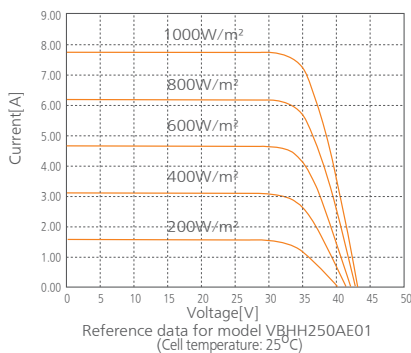
Note: Nominal Operating Cell Temperature : Air mass 1.5 spectrum, Irradiance = 800W/m<sup>2</sup>, Air temperature = 20°C, wind speed 1 m/s

### At low irradiance

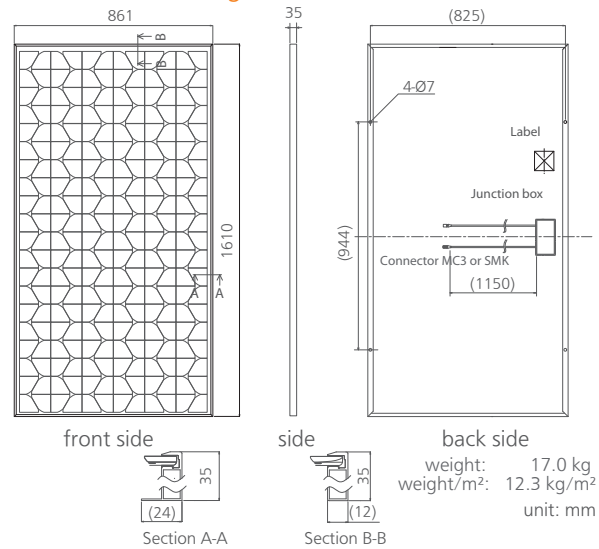
	VBHH250AE01	VBHH245AE01
Maximum power (Pmax) [W]	48.8	47.7
Max. power voltage (Vmp) [V]	34.1	33.6
Max. power current (Imp) [A]	1.43	1.43
Open circuit voltage (Voc) [V]	40.1	39.7
Short circuit current (Isc) [A]	1.55	1.55

Note: Low irradiance: Air mass 1.5 spectrum, Irradiance = 200W/m<sup>2</sup>, cell temp. 25°C

### Dependence on irradiance



### Dimensions and weight



### Guarantee

Power output: 10 years (90% of Pmin) 25 years (80% of Pmin)  
 Product workmanship: 10 years  
 (Based on guarantee documents)

### Materials

Cell material: Honeycomb Design HIT cells  
 Glass material: AR coated tempered glass  
 Frame materials: Black anodized aluminium  
 Connector type: MC3 or SMK

### Certificates

www.tuv.com  
 ID: 000023431

- Quality tested, IEC 61215  
 - Safety tested, IEC 61730  
 - Periodic inspection

Certificate No. MCS PV0034  
 Photovoltaic System

Member of

www.tuv.com  
 ID: 000023431

- Ammonia resistance tested  
 - Salt mist corrosion tested  
 - Periodic inspection

Please consult your local dealer for more information.

**CAUTION!** Please read the installation manual carefully before using the products.

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