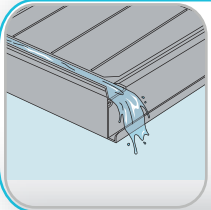


VBHN245SJ25  
VBHN240SJ25  
VBHN235SJ25

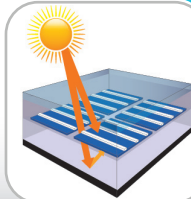


### Water drainage frame

- Rain water is drained off the module surface.
- This avoids not only water accumulation, but also water stains after drying.
- Even in low-angle installations, water drainage corners keep the module clean.

### Power from both sides

- HIT cells generate solar electricity simultaneously on the front and on the back side.
- This additional amount of light is combined with the light taken up by the front side of the module.



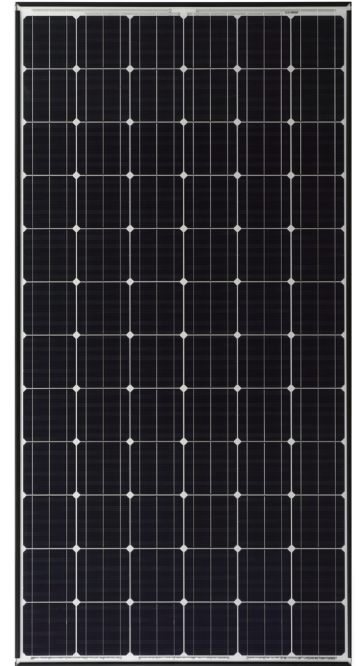
19.4%\*  
194 W/m<sup>2</sup>



### Vertically integrated factory

- Efficient production flow improves product quality as entire process from wafer to cell is done at the same location.
- No risk of damage of individual components during transportation between factories.
- Made in Malaysia

\*VBHN245SJ25



### HIT cell technology

The HIT solar cell is made of a thin monocrystalline silicon wafer surrounded by ultra-thin amorphous silicon layers. This product offers 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 technology in 1975. Our long track record is supported by our claim-rate of only 0.0036% in our European factory in Dorog, Hungary (as of September 2013).

### 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.

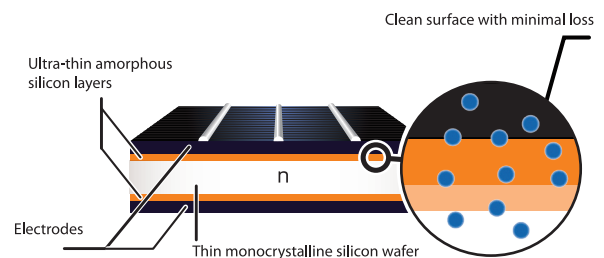
### High performance at high temperatures

With its very low temperature coefficient of only -0.29%/°C, the HIT solar cell can maintain a higher efficiency than a conventional crystalline silicon solar cell, even at high temperatures.

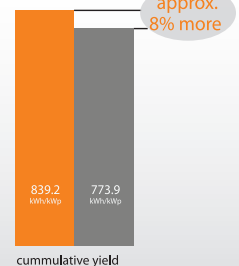
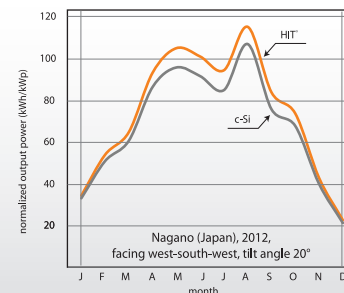
**PID\* Free** \*Potential Induced Degradation

Tested by 3rd party to be PID\* free.

### HIT solar cell structure



### Yield comparison



**HIT**<sup>TM</sup>  
Photovoltaic Module

"HIT" is a trademark of Panasonic Group.

Model	Cell efficiency	Module efficiency	Output/m <sup>2</sup>
VBHN245SJ25	22.0%	19.4%	194W/m <sup>2</sup>
VBHN240SJ25	21.6%	19.0%	190 W/m <sup>2</sup>
VBHN235SJ25	21.1%	18.6%	186 W/m <sup>2</sup>

### Electrical data (at STC)

	VBHN245SJ25	VBHN240SJ25	VBHN235SJ25
Max. power (Pmax) [W]	245	240	235
Max. power voltage (Vmp) [V]	44.3	43.6	43.0
Max. power current (Imp) [A]	5.54	5.51	5.48
Open circuit voltage (Voc) [V]	53.0	52.4	51.8
Short circuit current (Isc) [A]	5.86	5.85	5.84
Max. over current rating [A]	15		
Production tolerance power [%]	+10/-5*		
Max. system voltage [V]	1000		

Note: Standard Test Conditions: Air mass 1.5; Irradiance = 1000W/m<sup>2</sup>; cell temp. 25°C

### Temperature characteristics

Temperature (NOCT) [°C]	44.0		
Temp. coefficient of Pmax [%/°C]	-0.29		
Temp. coefficient of Voc [V/°C]	-0.133	-0.131	-0.130
Temp. coefficient of Isc [mA/°C]	1.76	1.76	1.75

### At NOCT (Normal Operating Conditions)

Max. power (Pmax) [W]	187.4	183.2	178.4
Max. power voltage (Vmp) [V]	42.5	41.7	41.0
Max. power current (Imp) [A]	4.41	4.39	4.35
Open circuit voltage (Voc) [V]	50.3	49.7	48.9
Short circuit current (Isc) [A]	4.71	4.71	4.70

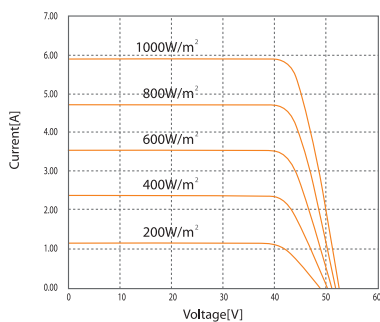
Note: Nominal Operating Cell Temp.: Air mass 1.5; Irradiance = 800W/m<sup>2</sup>; Air temperature 20°C; wind speed 1 m/s

### At low irradiance (20%)

Max. power (Pmax) [W]	47.0	45.9	45.0
Max. power voltage (Vmp) [V]	43.2	42.2	41.6
Max. power current (Imp) [A]	1.09	1.09	1.08
Open circuit voltage (Voc) [V]	49.6	49.0	48.4
Short circuit current (Isc) [A]	1.17		

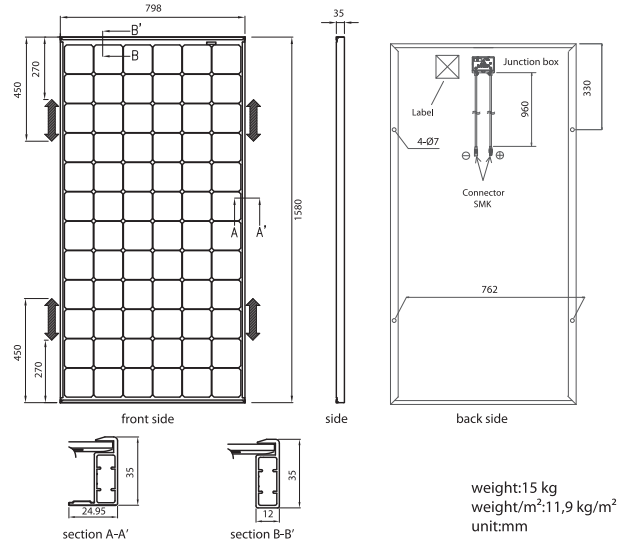
Note: Low irradiance: Air mass 1.5; Irradiance = 200W/m<sup>2</sup>; cell temp. = 25°C

### Dependence on irradiance



Reference data for model VBHN245SJ25

### Dimensions and weight



### Guarantee

Power output: 10 years (90% of Pmin), 25 years (80% of Pmin)  
Product workmanship: 10 years (based on guarantee document)

### Materials

Cell material: 5 inch HIT cells  
Glass material: AR coated tempered glass  
Frame materials: Black anodized aluminium  
Connectors type: SMK

### Certificates



### Member of



IEC61215  
IEC61730-1  
IEC61730-2



Manufactured by SANYO Electric Co., Ltd.

Please consult your local dealer for more information.

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

# Panasonic®