

# HIT<sup>®</sup> photovoltaic module



HIP-214NKHE5

## High Performance at High Temperatures

Even at high temperatures, the HIT solar cell produces 10% or more electricity than conventional crystalline silicon solar cells at the same temperature.

HIT solar cells generate cleaner energy than other conventional crystalline solar cells.

## Environmentally Friendly Solar Cell

## Aesthetic design

All visible parts including the frame and cells are black. This gives a homogeneous appearance.

**17.0%**  
170W/m<sup>2</sup>



## Why SANYO?

### Experience

More than 30 years of experience in solar technology have earned us a reputation for the highest reliability with our customers. SANYO has been manufacturing solar cells since 1978. Our highly successful as well as high performance and long-life HIT Modules have been produced since 1997 for a constantly growing market.

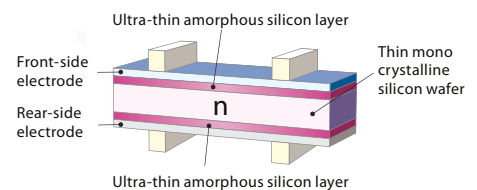
### Reliability

SANYO HIT Solar Modules provide the highest reliability and maximum security for full energy yields over the system's entire life cycle.

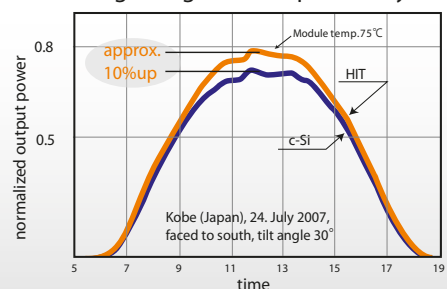
### Efficiency

SANYO HIT Modules combine a thin single crystal wafer with an ultrathin amorphous silicon layer. This means greater energy recovery on a smaller roof area.

## HIT<sup>®</sup> Solar Cell Structure



## Changes in generated power daytime



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

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

Model	Cell Efficiency	Module Efficiency	Output / m <sup>2</sup>
HIP-214NKHE5	19.2%	17.0%	170 W/m <sup>2</sup>

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.

### Electrical data (at STC)

Model HIP-214NKHE5

	<b>214</b>
Maximum power (Pmax) [W]	214
Max. power voltage (Vmp) [V]	41.9
Max. power current (Imp) [A]	5.12
Open circuit voltage (Voc) [V]	51.5
Short circuit current (Isc) [A]	5.60
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

Temperature (NOCT) [°C]	48.0
Temperature coefficient of Pmax [%/°C]	-0.30
Temperature coefficient of Voc [V/°C]	-0.129
Temperature coefficient of Isc [mA/°C]	1.68

#### At NOCT

Maximum power (Pmax) [W]	160
Max. power voltage (Vmp) [V]	39,2
Max. power current (Imp) [A]	4,11
Open circuit voltage (Voc) [V]	48,1
Short circuit current (Isc) [A]	4,51

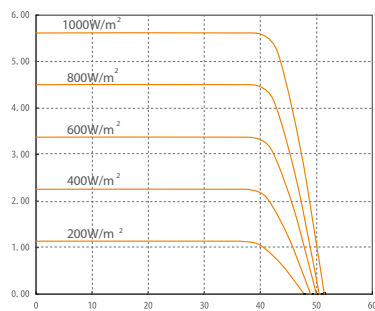
Note: Nominal Operating Cell Temperature : Air mass 1.5 spectrum, Irradiance = 800W/m<sup>2</sup>, Air temperature = 20°C, wind speed 1 m/s

#### At low irradiance

Maximum power (Pmax) [W]	42,0
Max. power voltage (Vmp) [V]	40,8
Max. power current (Imp) [A]	1,03
Open circuit voltage (Voc) [V]	47,7
Short circuit current (Isc) [A]	1,12

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

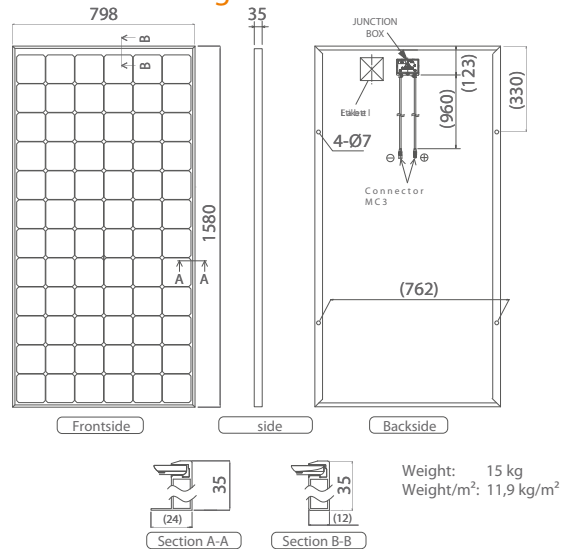
### Dependence on irradiance



Reference data for model HIP-214NKHE5  
(Cell temperature: 25°C)

### Dimensions and weight

unit: mm



### Guarantee

Power output: 10 years (90% of Pmin) 20 years (80% of Pmin)  
 Product workmanship: 10 years  
 (Based on guarantee document)

### Materials

Cell material: 5 inch HIT cells  
 Glass material: tempered glass  
 Frame materials: Black anodized aluminium  
 Connectors type: MC3

### Certificates



• Safety tested,  
 IEC 61730  
 • Periodic inspection

IEC 61730

IEC 61215



### Member of



Please consult your local dealer for more information.

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

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