

# HIT PHOTOVOLTAIC MODULE HIP-190BA3



**Power Output: 190 Watts**  
**Cell Efficiency: 18.5%**  
**Module Efficiency: 16.1%**

### Proprietary Technology

SANYO HIT\* solar cells are hybrids, made of thin mono crystal silicon surrounded by ultra-thin amorphous silicon layers.

### Temperature Attributes

As temperatures rise, SANYO HIT solar panels produce more electricity (kWh) than conventional crystalline silicon solar panels at the same temperature.

### Usable Equipment

SANYO HIT solar panels have a black anodized aluminum frame, come pre-equipped with an electrically-safe junction box, lead wires, and plug-n-play connectors.

### Valuable Features

SANYO HIT solar panels are 100% emission free, have no moving parts and produce no noise. The panels are manufactured to resist wind, fire, and hail. Anti-reflective coatings maximize sunlight absorption. The size of the panels allow installers to save space and obtain maximum power on fixed roof space. The panels weigh less than other solar panels. A unique frame helps installers save space, installation time, and money for structure support materials.

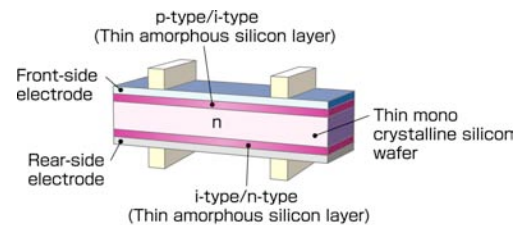
### ISO 9001 & ISO 14001

SANYO HIT solar panels are subject to strict inspections and measurements to ensure compliance with electrical, mechanical, environment and visual criteria. All panels are manufactured in ISO certified factories. SANYO's conservative ratings often result in better financial economics for your customers.

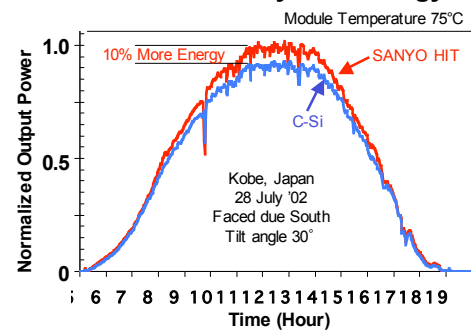
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\*Heterojunction with Intrinsic Thin layer

### HIT Solar Cell Structure



### Generated Daytime Energy



ISO 9001

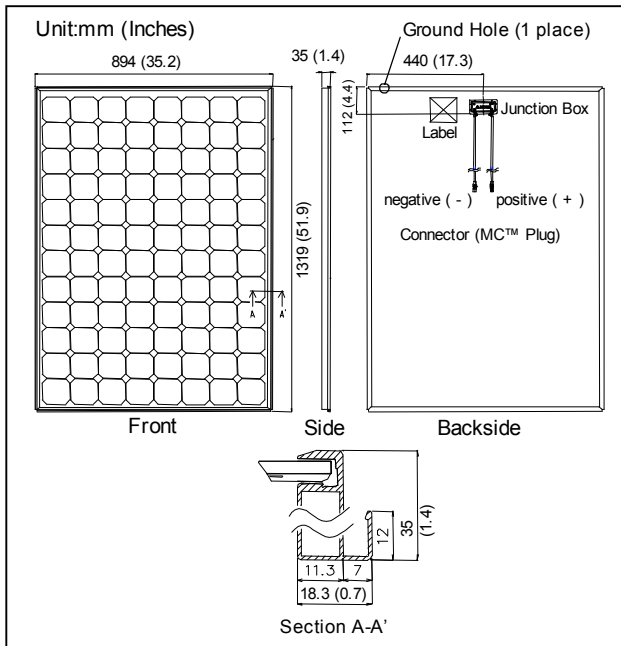


ISO 14001

# Electrical and Mechanical Characteristics HIP-190BA3



## Dimensions

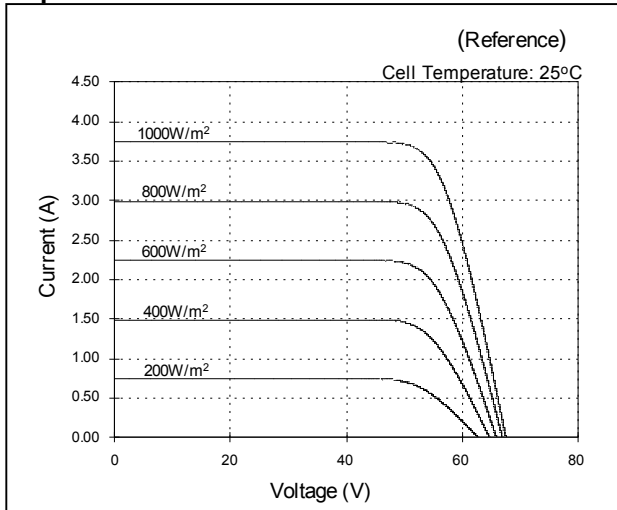


## Electrical

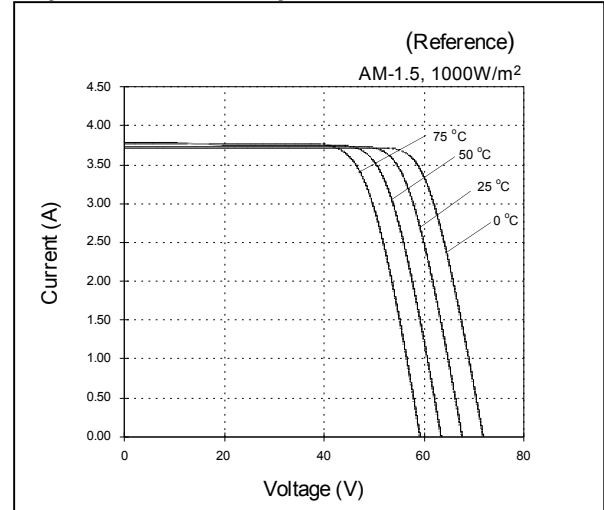
Maximum Power (Pmax) <sup>2</sup>	W	190
Maximum Power Voltage (Vpm)	V	54.8
Maximum Power Current (Ipm)	A	3.47
Open Circuit Voltage (Voc)	V	67.5
Short Circuit Voltage (Isc)	A	3.75
Minimum Power (Pmin)	W	171
Maximum System Voltage	V	600
Series Fuse Rating	A	15
Temperature Coefficient (Pmax)	%/°C	-0.30
Temperature Coefficient (Voc)	V/°C	-0.169
Temperature Coefficient (Isc)	mA/°C	0.86
PTC Rating <sup>3</sup>	W	178.7
Module Area	Ft <sup>2</sup>	12.7
Power Output Per Square Foot	W	15
Weight	Lbs.	30.9
Fire Rating	Class	C

1. Values are nominal.
2. STC: Cell Temp. 25 C, AM 1.5, 1000 W/m<sup>2</sup>
3. PTC: Cell Temp. 20 C, AM 1.5, 1000 W/m<sup>2</sup>, 1 m/s w ind

## Dependence on Irradiance



## Dependence on Temperature



## Limited Warranty

Power Output: 20 years  
Product Workmanship: 2 years

## Certificates

UL 1703, cUL, CEC Listed



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

Due to our policy of continual improvement, the specifications and product above may change without notice.  
\*Development of HIT solar cells was supported in part by NEDO.

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Please consult your authorized representative for more information.