High-efficiency photovoltaic module using silicon nitride multicrystalline silicon cells.

Performance

- Rated power ($P_{\text{max}}$) 50W
- Power tolerance ± 10%
- Nominal voltage 12V
- Limited Warranty¹ 25 years

Configuration

- Clear universal frame and standard J-Box

Electrical Characteristics²

- Maximum power ($P_{\text{max}}$) 50W
- Voltage at Pmax ($V_{\text{mp}}$) 17.5V
- Current at Pmax ($I_{\text{mp}}$) 2.9A
- Warranted minimum $P_{\text{max}}$ 45W
- Short-circuit current ($I_{\text{sc}}$) 3.2A
- Open-circuit voltage ($V_{\text{oc}}$) 21.8V
- Temperature coefficient of $I_{\text{sc}}$ $(0.065\pm0.015)/^\circ\text{C}$
- Temperature coefficient of $V_{\text{oc}}$ $-$(80±10)mV/°C
- Temperature coefficient of power $-$(0.5±0.05)/°C
- NOCT (Air 20°C; Sun 0.8kW/m²; wind 1m/s) 47±2°C
- Maximum series fuse rating 20A
- Maximum system voltage 50V (U.S. NEC rating)

Mechanical Characteristics

- Dimensions
  - Length: 839mm (33”)
  - Width: 537mm (21.1”)
  - Depth: 50mm (1.97”)
- Weight 6.0 kg (13.2 pounds)
- Solar Cells
  - 72 cells (42mm x 125mm) in a 4x18 matrix connected in 2 parallel strings of 36 in series
- Junction Box
  - J-Version junction box with 4-terminal connection block; IP 65, accepts PG 13.5, M20, ½ inch conduit, or cable fittings accepting 6-12mm diameter cable. Terminals accept 2.5 to 10mm² (8 to 14 AWG) wire.
- Diodes
  - One 9A, 45V Schottky by-pass diode included
- Construction
  - Front: High-transmission 3mm (1/8th inch) tempered glass; Back: White Polyester; Encapsulant: EVA
- Frame
  - Clear anodized aluminum alloy type 6063T6 Universal frame; Color: silver

¹. Module Warranty: 25-year limited warranty of 85% power output; 12-year limited warranty of 93% power output; 5-year limited warranty of materials and workmanship. See your local representative for full terms of these warranties.

². This data represents the performance of typical BP modules, and are based on measurements made in accordance with ASTM E1036 corrected to SRC (STC.)

³. During the stabilization process that occurs during the first few months of deployment, module power may decrease by approx. 1% from typical $P_{\text{max}}$.

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Quality and Safety

Listed to UL 1703 Standard for safety by Intertek ETL (Class C fire rating)

Approved by Intertek ETL for use in NEC Class 1, Division 2, Groups A to D hazardous locations.

Qualification Test Parameters
- Temperature cycling range: -40°C to +85°C (-40°F to 185°F)
- Humidity freeze, damp heat: 85% RH
- Static load front and back (e.g. wind): 50psf (2400 pascals)
- Front loading (e.g. snow): 113psf (5400 pascals)
- Hailstone impact: 25mm (1 inch) at 23 m/s (52mph)

Module Diagram
Dimensions in brackets are in inches. Un-bracketed dimensions are in millimeters.
Overall tolerances ±3mm (1/8”)

Included with each module: self-tapping grounding screw, instruction sheet, and warranty document.

Note: This publication summarizes product warranty and specifications, which are subject to change without notice. Additional information may be found on our web site: www.bpsolar.com

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