

MIH[®] VMJ PV Cell

Cell-Array for 1064nm Laser

Datasheet



Key Features:

- High efficiency Si-based MIH[®] VMJ PV cell
- Efficiency with 1064nm laser up to 23% at 10 W/cm²
- High voltage density: 30V standard 10mm x 10mm cells
- High temperature durability (up to 120°C operation)
- High thermal conductivity substrates
- Cell and array size customization

Applications:

- Unmanned Aerial Vehicles
- Remote sensor charging
- Wireless Power Transmission

Product Description

MH GoPower offers the only photovoltaic receiver product line capable of delivering a wide range of power and voltage outputs. Power output levels range from tens of milliwatts to hundreds of watts, while output voltage levels are possible from 4 volts to over 30 volts. MHGP's Cell-Array product line operates effectively over a broader range from approximately 800nm to 1070nm.

The 5S1010A0-A555555 is MHGP's standard Cell-Array product offering, suitable for applications requiring power up to 65 watts when active cooling available. Note: higher power output is also possible with good thermal management (performance of the VMJ PV Cell-Array will drop ~3% for every 10°C increase in temperature).

Target applications include dense array PV receivers for laser power beaming (including powering UAVs, aerospace applications, and remote ground based sensors), and for high power, power over fiber applications. Features of target applications include need for remote power delivery, or high voltage isolation, or need to operate in high voltage or high EMI environments.

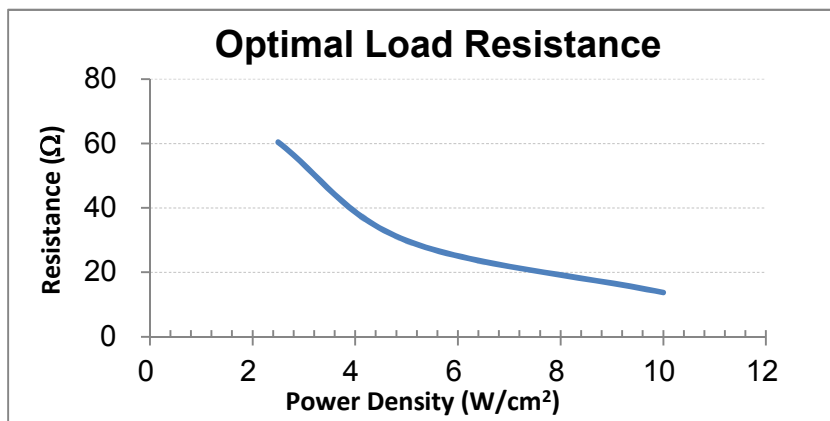
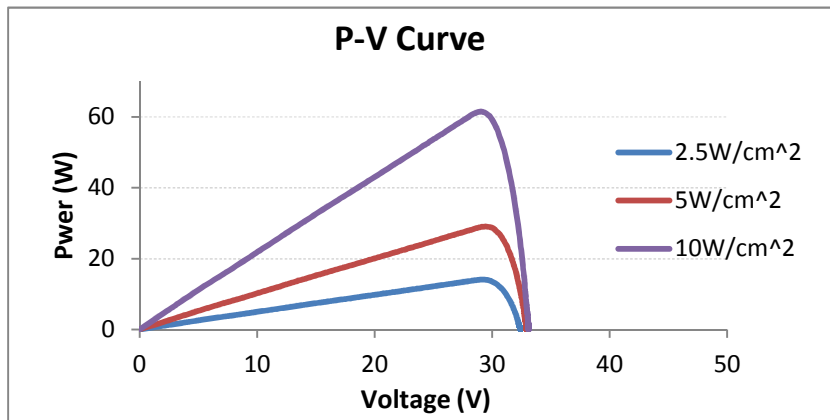
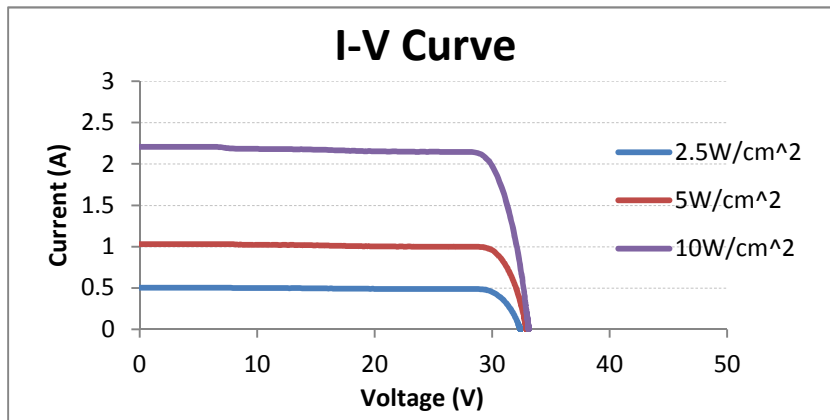
Electrical Characteristics *

Part Number	Length (mm)	Width (mm)	Height (mm)	Input Power (W)	Power Density (W/cm ²)	Vmax (V)	I _{max} (A)	Pmax (W)	Efficiency (%)
5S1010A0-A555555	55.0	55.0	2.0	66.30	2.50	29.17	0.48	14.09	21.2%
				132.60	5.00	29.44	0.99	29.05	21.9%
				265.20	10.00	29.05	2.12	61.49	23.2%

* Typical converter performance of 5S1010A0-A555555

* Tested with 1070 nm laser source and 20 °C cooling water at 7 L/min

* Efficiency will vary depending on level of light uniformity, as well as Cell-Array temperature



Customization Options

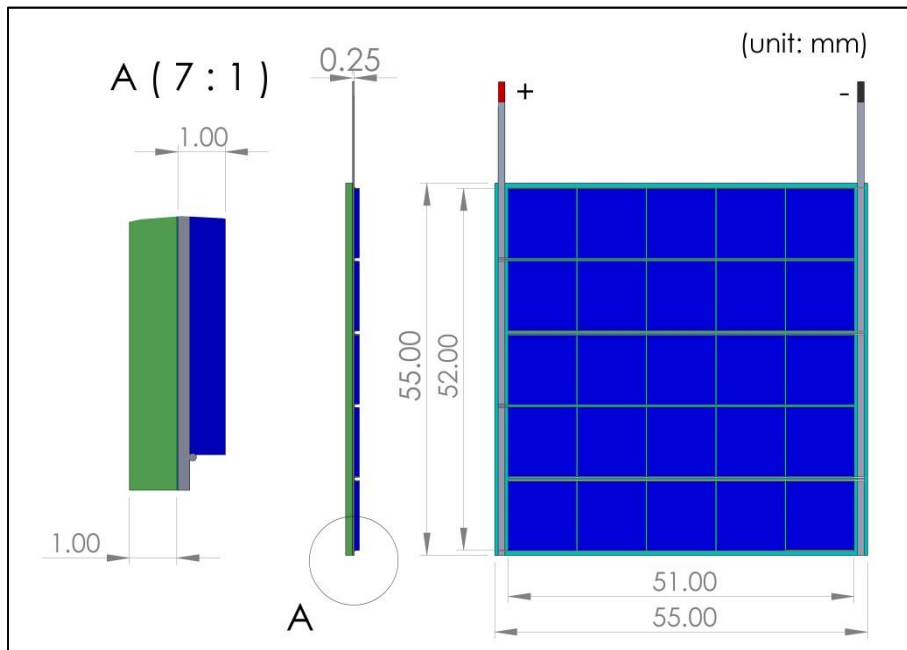
The following Cell-Array parameters can be customized upon request.

- VMJ PV cell Size
- Substrate Size and Materials (Aluminum Nitride or Aluminum)
- Array Configuration (number of rows and columns)
- Output Configuration (series or parallel wiring)
- Electrical Connector output

Recommended Testing Guidance

Our Cell-Arrays allow customers to quickly test the performance of our VMJ PV cells in dense array applications. Our standard Cell-Arrays are designed for indoor, laboratory testing. It is not recommended that the Cell-Arrays be tested in outdoor applications subject to high humidity and condensation. Customization for outdoor applications and testing is available upon request.

Mechanical Dimensions



Net Weight: AlN Cell-Array 17.0g; Al Cell-Array 15.3g