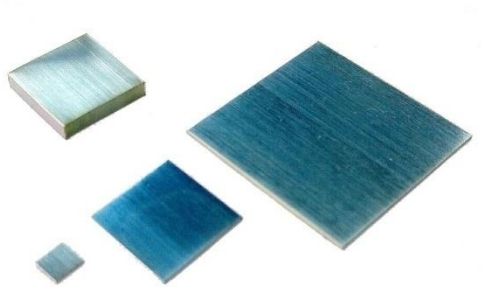
# MIH® VMJ PV Cell

## Datasheet



**Key Features:**

- Si-based vertical multi-junction PV cell
- High voltage density with low current
- High temperature durability
- Voltage and size customization
- Optimal efficiency with 9xxnm lasers
- High efficiency from 800nm to 1070nm

**Applications:**

- UAV wireless charging
- Remote sensor charging
- Wireless remote power delivery

## Product Description

MH GoPower (MHGP) offers the only photovoltaic cell 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 9 volts to over 30 volts. MHGP's MIH® VMJ PV Cell product line operates most efficiently with wavelengths in the range of 900nm to 1,000nm, but can also operate effectively over a broader range from approximately 800nm to 1,070nm.

The 5S1010.4 is MHGP's standard size VMJ PV cell of dimensions 10mm x 10mm x 0.4mm optimized for 9xxnm wavelengths. The 5S1010A0 cell with dimensions of 10mm x 10mm x 1.0mm and 5S1010A9 cell with dimensions of 10mm x 10mm x 1.9mm, both are optimized for high performance at 1064nm wavelength. These cells are suitable for applications requiring high electrical output power densities. The performance of the MIH® VMJ PV cell will drop ~3% for every 10°C increase in temperature.

Target applications include PV receivers for power over fiber applications as well as laser power beaming, including powering UAVs, aerospace applications, and remote ground based sensors. 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 (mW) | Power Density ($W/cm^2$) | Vmax (V) | Imax (mA) | Pmax (mW) | Efficiency (%) | Laser Wavelength (nm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 5S0303.4 | 3.0 | 3.0 | 0.4 | 123.1 | 1.4 | 8.70 | 5.80 | 50.46 | 40.7% | 915 |
| 5S1010.4 | 10.0 | 10.0 | 0.4 | 1,463.3 | 1.5 | 29.21 | 20.29 | 592.67 | 40.5% | 915 |
| 5S1010A0 | 10.0 | 10.0 | 1.0 | 1,814.2 | 1.9 | 25.60 | 17.85 | 456.96 | 25.2% | 1064 |

** Performance data measured at 25°C cell temperature*
** Efficiency will vary depending on level of light uniformity, as well as cell temperature*

## Customization Options

The following cell parameters can be customized upon request.

- VMJ PV cell output voltage / size
- Substrate Size
- Electrode wiring
- Packaging for environment protection

## Recommended Testing Guidance

MHGP's MIH® VMJ PV cell is a series of interconnected PN junctions, which results in high voltage density (~3V per mm in cell width). Because of this device architecture, the light uniformity across the junctions will impact the cell's performance.

Our standard PV cells are designed for indoor, laboratory testing. It is not recommended that the PV cells be tested in outdoor applications subject to high humidity and condensation, since our standard PV cells do not come with an environmental protective coating. Customization for outdoor applications and testing is available upon request.

MAKE it HAPPEN

MIH®

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