

MIH[®] Photovoltaic Power Converter

YCH-L300

Datasheet



Key Features:

- High efficiency Si-based MIH[®] VMJ PV cells
- Optimized for 915 nm through 980 nm laser sources
- Low cost, high reliability laser diode wavelengths
- Efficiency at 1 W input : ~30%
- Up to 7 V output

Applications:

- Electromagnetic Field Measurement
- RF over Fiber & 5G
- Remote Electronics and Sensors
- High Power IGBT/MOSFET Driver Circuitry
- Applications require voltage isolation, noise immunity or spark-free operation

Product Description

MH GoPower (“MHGP”) offers the only photovoltaic power converter (PPC) product line capable of delivering a wide range of power and voltage outputs. Power output levels range from tens of mW to over 10 W (higher power available upon request), while output voltage levels are possible from 4 V to over 30 V. MHGP’s PPC product line operates most efficiently with wavelengths in the range of 915 nm to 980 nm, and with fiber with an NA of 0.22 to 0.27.

The YCH-L300 is MHGP’s low power PPC offering for applications requiring power up to ~0.9 W. Device efficiencies of greater than 29% are achievable with appropriate heat sinking.

Target applications include powering remote and embedded sensors, current sensors, optical network components, as well as other applications requiring voltage isolation between the power source, and embedded electronics in high voltage or high noise environments.

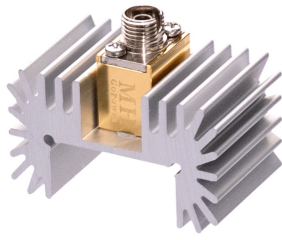
Electrical Characteristics of YCH-L300 PPC *

Optical Power (mW)	1000
Pmax (mW)	303.9
Vmax (V)	7.1
Imax (mA)	43.0
Efficiency (%)	30.4%

* Typical converter performance with ambient temp of ~25 °C

* Tested with 975 nm wavelength laser

* PPC held in free space, with no additional heatsinking, or airflow



YCH-L300 PPC with heatsink

Passive Heatsinking Option:

The YCH-L300 PPC with a heatsink is illustrated to demonstrate its adaptability. Custom heatsinking can be easily applied to the YCH-L300 PPC to generate higher power output, and higher performance. Heatsink size will depend on the application's operating conditions and power requirements. The below summarizes the performance of the YCH-L300 PPC with 42 x 25 x 25 mm aluminum heatsink. An efficiency of ~29% with 3 W input is achieved.

Electrical Characteristics of YCH-L300 PPC with Passive Heatsinking **

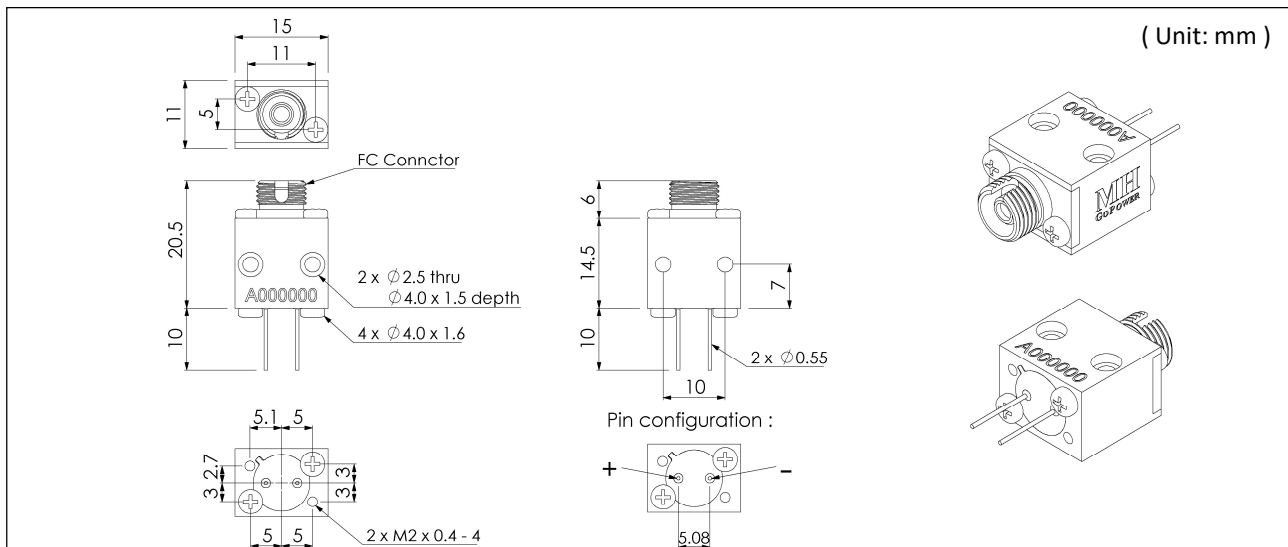
Optical Power (mW)	1000	2000	3000
Pmax (mW)	325	602	876
Vmax (V)	7.9	7.5	7.4
I _{max} (mA)	42.4	80.5	118.9
Efficiency (%)	32.5%	30.1%	29.2%

** Typical converter performance with ambient temp of ~25 °C

** Tested with 975 nm wavelength laser

** PPC and heatsink held in free space, with no active airflow over the heatsink fins or PPC

Mechanical Dimensions



Net weight: 9 g