

# MIH<sup>®</sup> Photovoltaic Power Converter

YCH-H6424

Datasheet



## Key Features:

- High efficiency Si-based MIH<sup>®</sup> VMJ PV cells
- Optimized for 915nm through 980nm laser sources
- Utilizes low cost, high reliability laser diode wavelengths
- Designed for adaptability with custom heatsink options
- Efficiency at 5W input: ~27% without heatsinking
- Efficiency at 20W input: ~27% with heatsinking
- Up to 15 volts output
- FC / SMA connector available

## Applications:

- Current Measurement (ECTs)
- Remote Sensors
- Power Electronics
- EMC Testing
- RF over Fiber & 5G

## Product Description

MH GoPower 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 milliwatts to over 10 watts (higher power available upon request), while output voltage levels are possible from 4 volts to over 30 volts. MHGP's PPC product line operates most efficiently with wavelengths in the range of 900 nm to 1,000 nm, and with fiber with an NA of 0.22.

The MHGP YCH-H6424 is MHGP's high power PPC offering for applications requiring power up to ~3 watts (when passively cooled) and over 5 watts when utilizing a large heatsink. Device efficiencies of greater than 30% are achievable with appropriate heat sinking.

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

**Availability:** FC / SMA model in stock

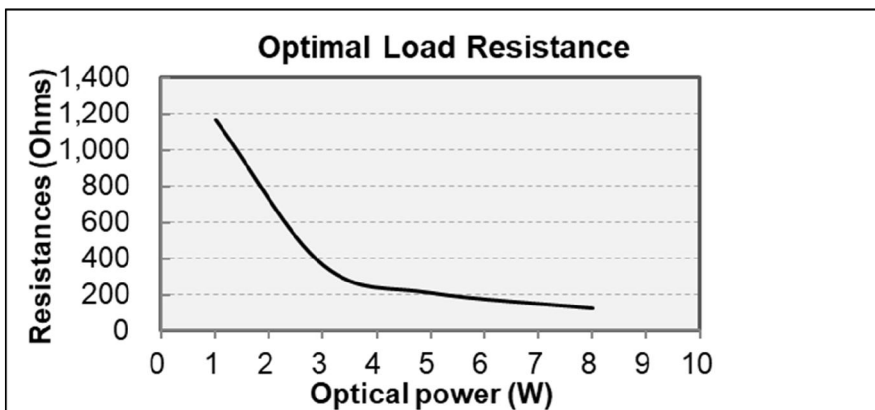
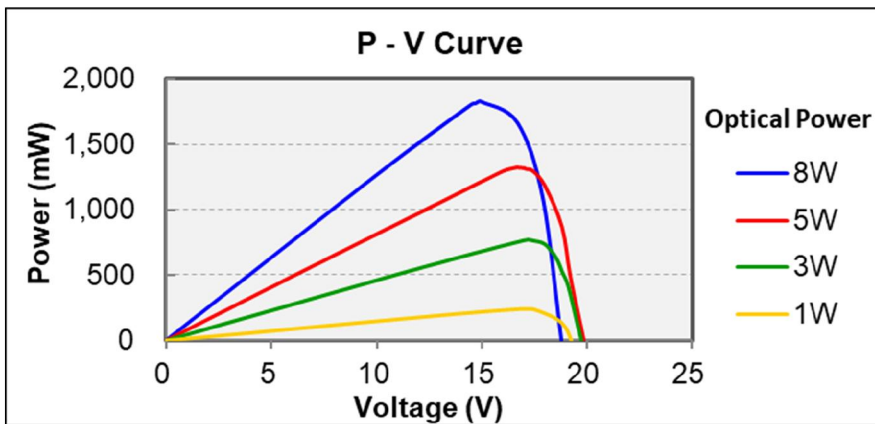
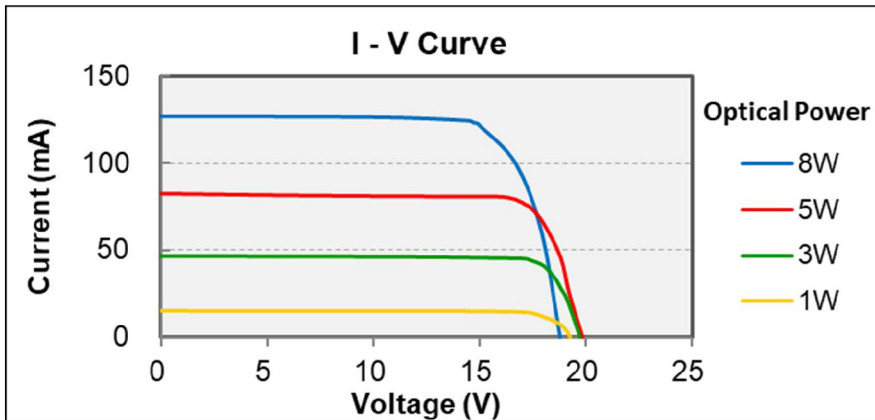
### Electrical Characteristics of YCH-H6424 PPC without additional heatsinking \*

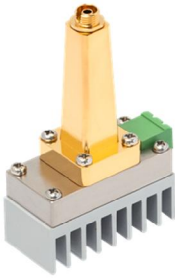
Optical Power (mW)	1,000	3,000	5,000	8,000
Pmax (mW)	248	777	1,336	1,830
Vmax (V)	17.0	16.7	16.6	14.9
I <sub>max</sub> (mA)	14.6	46.5	80.3	122.8
Efficiency (%)	24.8%	25.9%	26.7%	22.9%

\* 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





### Passive Heatsinking Option A:

The YCH-H6424 PPC's performance with a heatsink is illustrated to demonstrate the adaptability of the YCH-H6424 PPC. Custom heatsinking can be easily applied to the YCH-H6424 PPC to generate higher power output, and higher performance. The below summarizes the performance of the YCH-H6424 PPC with a 50 x 24 x 17 mm aluminum heatsink. An efficiency of ~26% at 10W input is achieved.

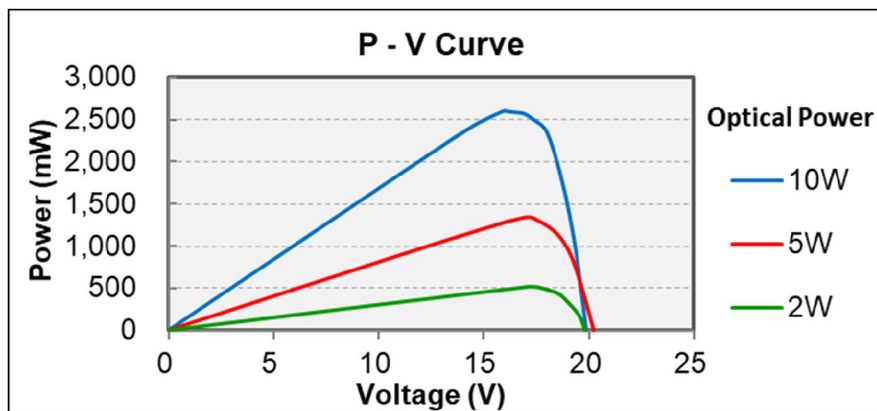
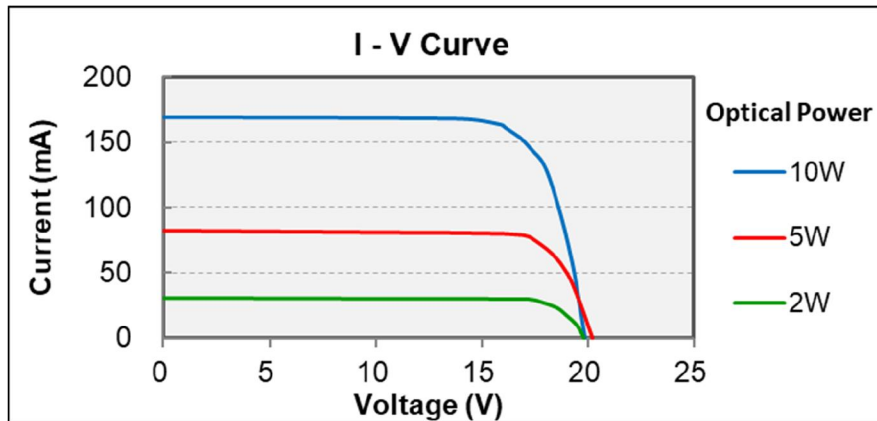
### Electrical Characteristics of YCH-H6424 PPC with Al heatsink A\*\*

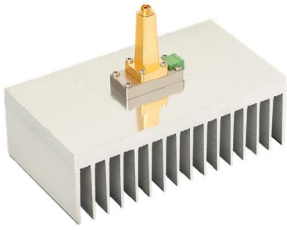
Optical Power (mW)	2,000	5,000	10,000
Pmax (mW)	525	1,349	2,600
Vmax (V)	17.7	16.9	16.1
I <sub>max</sub> (mA)	29.7	79.7	161.1
Efficiency (%)	26.3%	27.0%	26.0%

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

\*\* Tested with 975 nm wavelength laser

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





### Passive Heatsinking Option B:

The YCH-H6424 PPC with a large heatsink demonstrates the ability to generate higher power output, and higher performance. The below summarizes the performance of the YCH-H6424 PPC with a 180 x 100 x 60 mm aluminum heatsink. An efficiency of ~27% at 20W input is achieved.

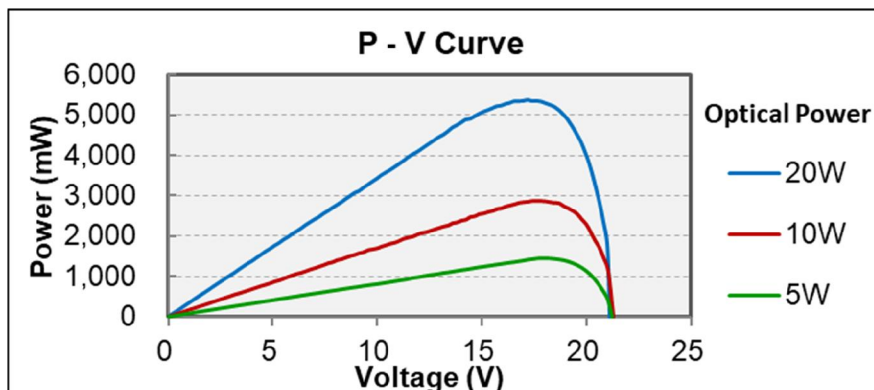
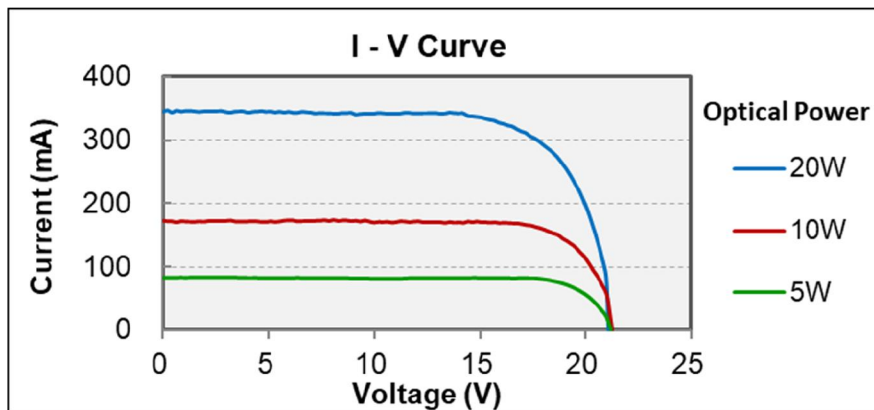
### Electrical Characteristics of YCH-H6424 PPC with Al heatsink B\*\*

Optical Power (mW)	5,000	10,000	20,000
Pmax (mW)	1,462	2,877	5,367
Vmax (V)	17.8	17.4	17.2
I <sub>max</sub> (mA)	82	165.4	312.4
Efficiency (%)	29.1%	28.7%	26.8%

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

\*\* Tested with 975 nm wavelength laser

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



## Ordering Information

	Part no.	Optical Connector	Heat Dissipation Module	Weight (g)
1	YCH-H6424-15-FC	FC	N/A	155
2	YCH-H6424-15-SM	SMA	N/A	157
3	YCH-H6424-15-FC-A	FC	Heatsink A	184
4	YCH-H6424-15-SM-A	SMA	Heatsink A	186
5	YCH-H6424-15-FC-B	FC	Heatsink B	1273
6	YCH-H6424-15-SM-B	SMA	Heatsink B	1275

## Mechanical Dimensions

(Unit: mm)

