

Photovoltaic Power Converter

YCH-L270

Datasheet



Key Features:

- High efficiency Si-based MIH[®] VMJ PV cells
- Optimized for 915nm through 980nm laser sources
- Low cost, high reliability laser diode wavelengths
- Efficiency at 1W input: ~27%
- Up to 7 volts output
- FC connector available

Applications:

- Electronic Current Transducer (ECT)
- 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 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 915nm to 980nm, and with fiber with an NA of 0.22 to 0.27.

The YCH-L270 is MHGP’s low power PPC offering for applications requiring power up to ~0.8 watt. Device efficiencies of greater than 26% 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.

Availability: FC models in stock.

Electrical Characteristics *

Optical Power (mW)	250	500	1,000
Pmax (mW)	69.0	138.9	270.0
Vmax (V)	7.3	7.3	7.3
I _{max} (mA)	9.6	19.1	37.1
Efficiency (%)	27.8%	27.7%	27.0%

* 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: Custom heatsinking can be easily applied to the YCH-L270 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-L270 PPC with 42 x 25 x 25 mm aluminum heatsink. An efficiency of ~27% with 3W input is achieved:

Electrical Characteristics of YCH-L270 PPC with Passive Heatsinking **

Optical Power (mW)	1,000	2,000	3,000
Pmax (mW)	291.3	554.4	801.2
Vmax (V)	7.5	7.3	7.0
I _{max} (mA)	38.9	76.2	114.9
Efficiency (%)	29.1%	27.7%	26.7%

** 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

