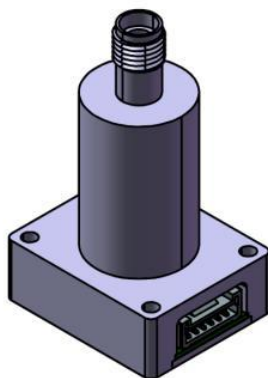


# 808 nm Optical Power Converter

## APPLICATION DATASHEET

Power over fiber | GaAs multi-junction receiver | 15 W class



## Application overview

A fiber-coupled optical power converter supplies electrically isolated power to remote electronic circuits. This module uses a multi-junction GaAs receiver with a typical input wavelength of 808 nm and an input spectrum of 800 to 840 nm.

At a case temperature of 25 °C, the specified typical electrical output is 15.92 W for 30 W of optical input. Output is load dependent; use suitable regulation where a fixed supply voltage is required.

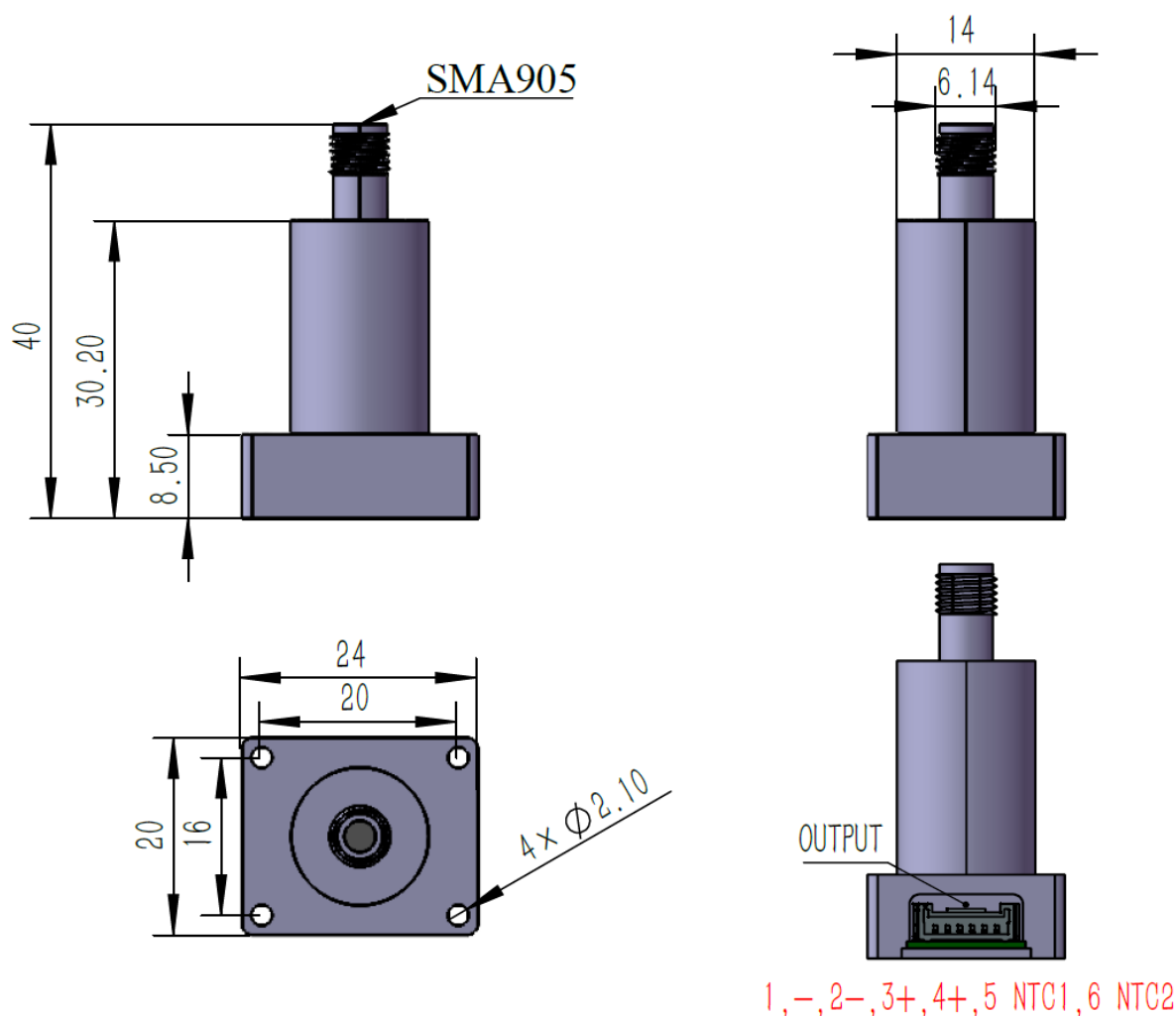
## Integration features

- SMA905 optical port for multimode fiber; typical numerical aperture 0.22.
- Reference fiber core diameter: 40 to 400 micrometers.
- Six-pin pluggable electrical interface and internal 10 kOhm NTC sensor.
- Bottom heat sinking; operating case temperature from -40 to +85 deg C.

## Typical applications

Sensors and high-voltage monitoring; RF electronics; industrial locations with wiring constraints; avionics and remote electronic nodes. These are integration applications, with system requirements determined by the project.

# Mechanical & absolute limits



Dimensions in mm. Bottom heat sinking is required. Six-pin connector: pins 1/2 negative, 3/4 positive, 5/6 temperature sensor.

| Parameter                  | Minimum | Typical | Maximum | Unit  |
|----------------------------|---------|---------|---------|-------|
| Storage temperature        | -40     | 25      | 85      | deg C |
| Operating case temperature | -40     | -       | 85      | deg C |
| Relative humidity          | 5       | -       | 85      | %     |
| Optical input power        | -       | -       | 30      | W     |

The maximum optical input assumes adequate heat sinking. Poor thermal extraction may cause the case-temperature limit to be exceeded at lower input power. Absolute limits are not recommended continuous operating targets.

# Optical & electrical data

## Fiber and temperature sensor

| Parameter                | Minimum   | Typical / reference   | Maximum   |
|--------------------------|-----------|-----------------------|-----------|
| Fiber core diameter      | -         | 40 to 400 micrometers | -         |
| Numerical aperture       | 0.17      | 0.22                  | 0.22      |
| Fiber length             | -         | Application-specific  | -         |
| NTC resistance           | -         | 10 kOhm; B = 3930 K   | -         |
| Sensor temperature range | -40 deg C | Application-specific  | 150 deg C |

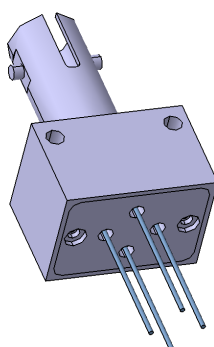
The sensor range does not extend the module operating case-temperature limit. Protect the fiber with a sleeve or ceramic ferrule during handling.

## Operating characteristics

Case temperature: 25 °C. Recommended optical spectrum: 800 to 840 nm, typical 808 nm.

| Optical input | Power at MPP | Voltage at MPP | Current at MPP |
|---------------|--------------|----------------|----------------|
| 10 W          | 5.40 W       | 6.05 V         | 0.893 A        |
| 20 W          | 10.79 W      | 6.05 V         | 1.784 A        |
| 30 W          | 15.92 W      | 5.91 V         | 2.693 A        |

## Package illustration

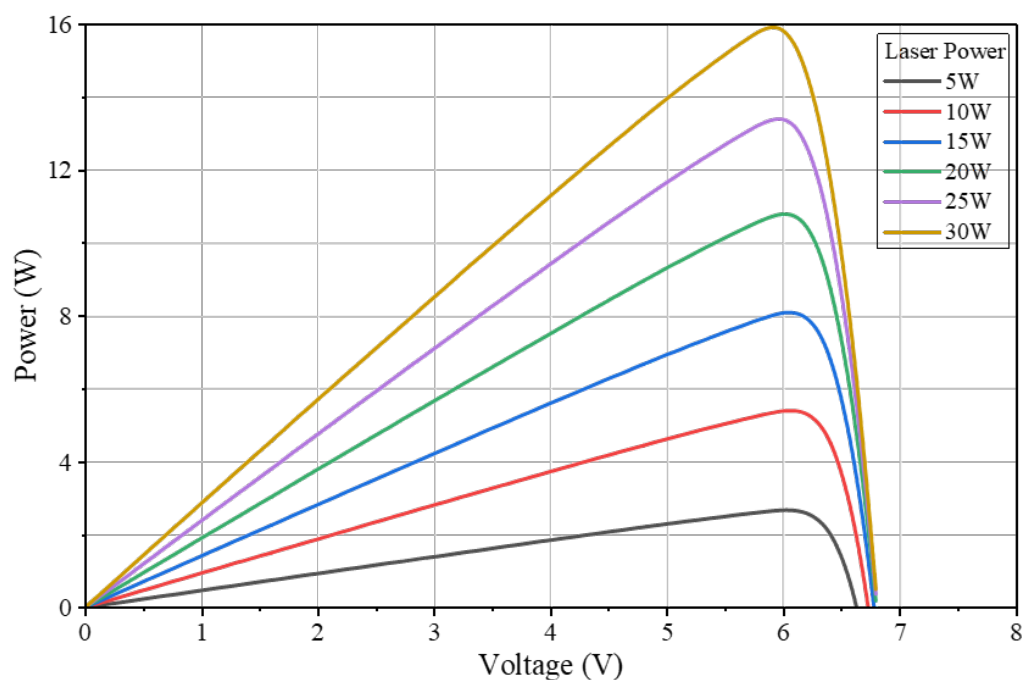


Separate package reference only. This illustration is not the six-pin module dimensioned on page 2; its dimensions and pin assignment are not specified here.

# Typical characteristics

Measured at 25 °C with an 808 nm laser. Optical input: 5, 10, 15, 20, 25 and 30 W.

## Power-voltage (P-V)



## Current-voltage (I-V)

