

# PH85-F1P0U4

## 850nm High power VCSEL TO-46 Can Package

### Features

- : **20mW** High power VCSEL
- : High reliability
- : 850nm wavelength range
- : Flat window Type TO-46 Can Package
- : Other configurations available on request

### Applications

- : Free Space Optics
- : Sensor

### Description



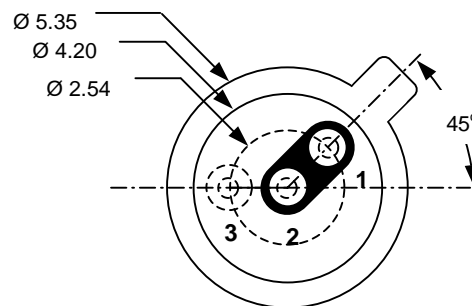
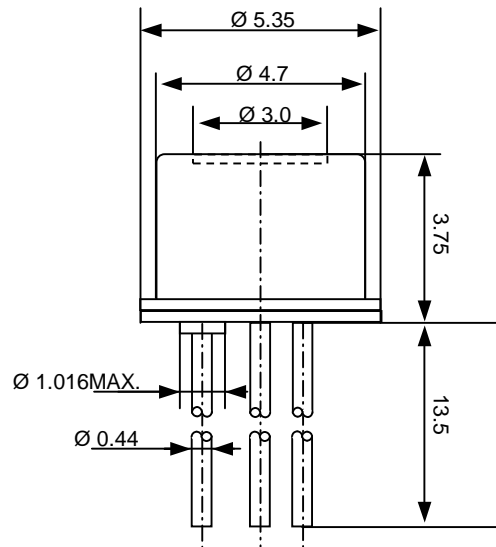
### Absolute Maximum Ratings

| Parameter                  | Rating         |
|----------------------------|----------------|
| Storage Temperature        | -40 to 100 °C  |
| Operating Temperature      | 0 to 60 °C     |
| Lead Solder Temperature    | 260 °C, 10 sec |
| Continuous Forward Current | 70 mA          |
| Continuous Reverse Voltage | 5V (@10µA)     |

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## Dimensions



Bottom view

### PINOUT

| Number | Function        |
|--------|-----------------|
| 1      | A <sub>LD</sub> |
| 2      | K <sub>LD</sub> |
| 3      | NC              |

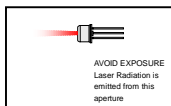
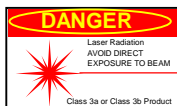
Unit:mm

### Electro-Optics Characteristics ( $T_a=25^{\circ}\text{C}$ unless otherwise stated)

| Parameters                      | Symbol                     | Specified |           |      | Unit                  | Test Conditions                                  |
|---------------------------------|----------------------------|-----------|-----------|------|-----------------------|--|
|                                 |                            | Min.      | Typ.      | Max. |                       |  |
| Threshold Current               | $I_{th}$                   |           | 15        |      | mA                    | CW   |
| $I_{th}$ Temperature Variation  | $\Delta I_{th}$            |           | 10        |      | mA                    | $T_a=0$ to $60^{\circ}\text{C}$                  |
| Slope Efficiency                | $\eta$                     | 0.2       | 0.4       |      | W/A                   | $I_f = 50\text{mA}$                              |
| $\eta$ Temperature Variation    | $\Delta\eta / \Delta T$    |           | -0.5      |      | %/ $^{\circ}\text{C}$ | $T_a=0$ to $60^{\circ}\text{C}$ at $50\text{mA}$ |
| Optical Output Power            | $P_o$                      |           | <b>20</b> |      | mW                    | $I_f = 50\text{mA}$                              |
| Peak Wavelength                 | $\lambda$                  | 840       | 850       | 860  | nm                    | $I_f = 50\text{mA}$                              |
| $\lambda$ Temperature Variation | $\Delta\lambda / \Delta T$ |           | 0.06      |      |                       | $T_a=0$ to $60^{\circ}\text{C}$ at $50\text{mA}$ |
| Spectral Bandwidth (RMS)        | $\Delta\lambda$            |           |           | 0.85 | nm                    | $I_f = 50\text{mA}$                              |
| Operating Voltage               | $V_f$                      |           | 2.1       | 2.6  | V                     | $I_f = 50\text{mA}$                              |
| Breakdown Voltage               | $V_b$                      |           | -10       |      | V                     |  |
| Dynamic Resistance              | $R_d$                      |           | 10        | 20   | Ohm                   | $I_f = 50\text{mA}$                              |

### Notes

\* These specifications are subject to change without notice



#### NOTICE

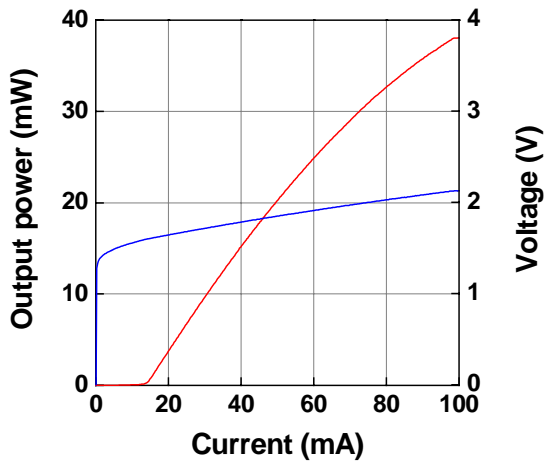
The inherent design of this component causes it to be sensitive to electrostatic discharge(ESD). To prevent ESD-induced damage and/or degradation to equipment, take normal ESD precautions when handling this product

#### DANGER

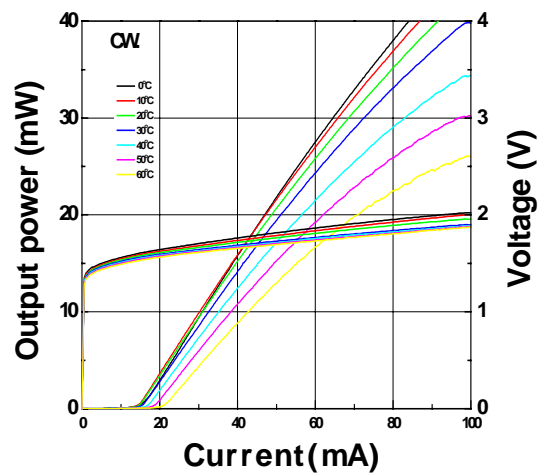
The VCSEL is a class IIIb laser and should be treated as a potential eye hazard. Due to the size of the component, the applicable warning logotype, aperture label, and certification / identification label cannot be placed on the component itself.

### Characteristics Curves

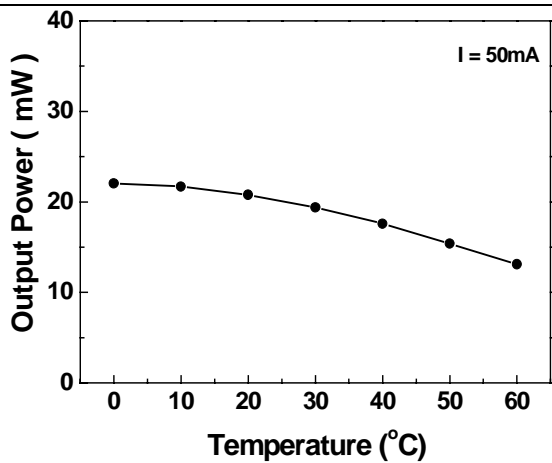
LIV Curve



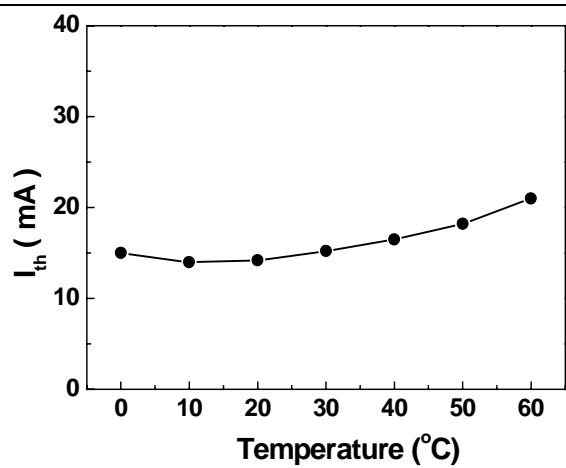
LIV vs Temperature



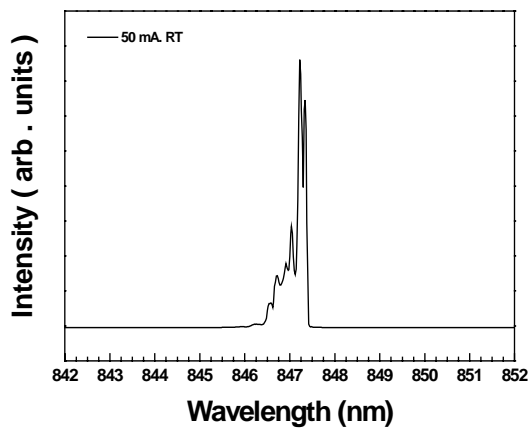
$P_0$  vs Temperature



$I_{th}$  vs Temperature



EL Spectrum



FFP

