# 1310 nm Vertical-Cavity Surface-Emitting Laser

## RC22xxx1-F

### Description

The SVC 1310 nm single mode VCSEL is designed for high-speed, high-performance communication applications.

### Features

• Low dependence of electrical and optical characteristics over temperature

• Data rates from OC-3 to OC-48

• Cylindrical TO package with single mode fiber pigtail

### Applications

• Access network for long distance (>2 km)

• Metro area network

• Gigabit Ethernet

### Electrical and optical characteristics

(T = 25°C unless otherwise stated)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Notes |
|---|---|---|---|---|---|---|
| Threshold current | $I_{th}$ | | 2 | 4 | *mA* | |
| Forward voltage | $V_f$ | | | 3 | *V* | |
| Series resistance | $R_s$ | | 100 | 200 | *Ω* | |
| Output power | $P_o$ | 0.4 | 0.5 | | *mW* | |
| Wavelength | $\lambda$ | 1290 | 1310 | 1340 | *nm* | |
| Side mode suppression | *SMSR* | 30 | 35 | | *dB* | |
| Rise and fall time | $t_r$<br>$t_f$ | | ~ 120<br>~ 150 | | *psec* | (20%-80%) |
| Operating temperature | $T_{op}$ | | 0 ~ 70 | | *°C* | |

### Absolute maximum ratings

(T = 25°C unless otherwise stated)

| Parameter | Symbol | Rating | Unit | Notes |
|---|---|---|---|---|
| Forward current | $I_f$ | 15 | *mA* | |
| Reverse voltage | $V_r$ | 5 | *V* | |
| Operating temperature | $T_{op}$ | 70 | *°C* | |
| Storage Temperature | $T_{stg}$ | 0 ~ 100 | *°C* | |
| Reflow Temperature | $T_{ref}$ | 260 | *°C* | 10 sec.<br>2 mm from case |

# 1310 nm Vertical-Cavity Surface-Emitting Laser

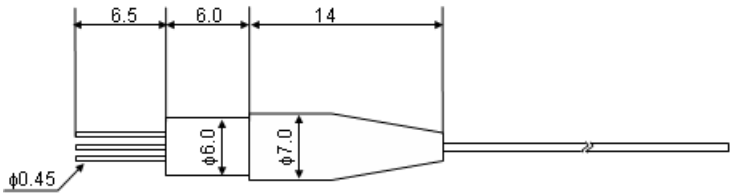
## RC22xxx1-F

**Notice**

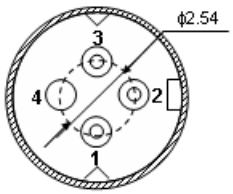
Conditions exceeding those listed may cause permanent damage to the device. Devices subjected to conditions beyond the limits specified for extended periods of time may adversely affect reliability.

## TO-56 pigtail VCSEL

### Dimensions unit : mm

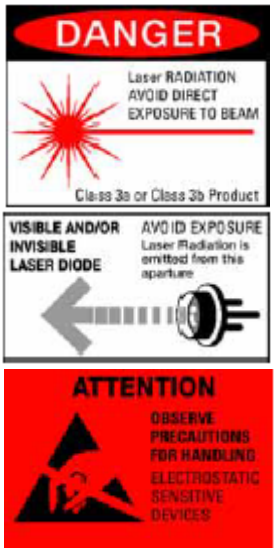



**Bottom side view**




**pin configuration**

| Number | Function |
|---|---|
| 1 | VCSEL Anode |
| 2 | VCSEL Cathode |
| 3 | NA |
| 4 | Case |




### Warning

The VCSEL is a class IIIb laser. Laser beams emitted from this product are hazardous to the naked eye. Avoid eye or skin exposure to direct or scattered radiation. Due to the size of the component, the applicable warning logotype, aperture label, and identification label can not be placed on the component.

### Caution

This product is sensitive to the electrostatic discharge(ESD). To prevent ESD-induced damage and/or degradation to equipment, take normal ESD precautions when handling this product.