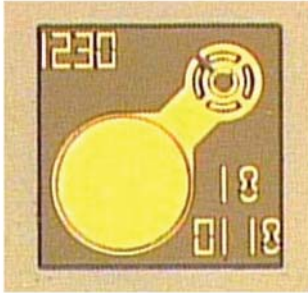


## 850 nm 4.25 G VCSEL Die

### PL-VDO-00-SG0-C0

**Key Features**

- Data rates from 622 Mbps to 4.25 Gbps
- -20°C to 85°C operation
- <2.2 V operation
- Backside cathode and topside anode configuration
- Custom specification tolerances available

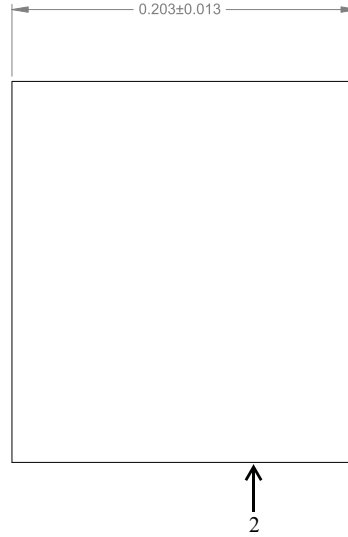
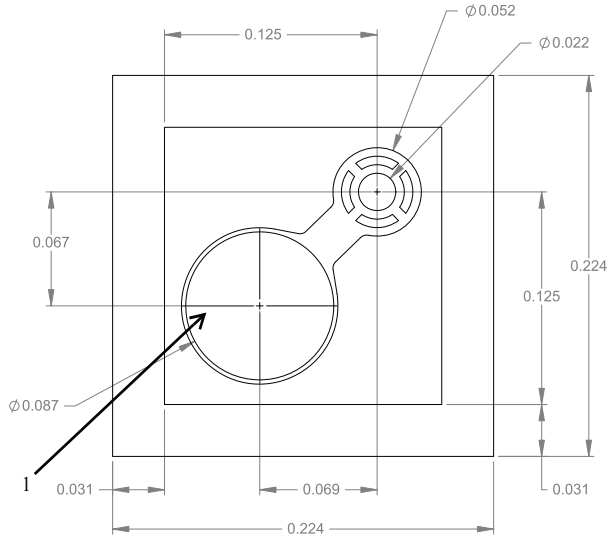
**Benefits**

- Very high reliability
  - Low FIT
  - High MTBF
- Excellent performance over extended operating temperatures

The JDSU 850 nm 4.25 Gbps VCSEL (Vertical Cavity Surface Emitting Laser) is designed for high-speed optical data communication applications. The patented JDSU VCSEL is engineered for performance and reliability over extended operating temperatures and power supply conditions. Extensive production lot testing and rigorous lot qualification processes ensure specification compliance and high reliability.

2

**Mounting Dimensions**



Dimensions are in mm

Note  
 1 Device Anode  
 2 Device Cathode

**Shipping Information**

Shipped in anti-static 2" x 2" gel pack containers. 1000 per gel pack.

**Absolute Maximum Ratings**

( $T_{case} = 30^{\circ}C$ , Continuous Wave (CW) operation unless otherwise stated.)

Parameter	Symbol	Ratings	Unit
Storage temperature	$T_{st}$	-40 to +125	$^{\circ}C$
Laser forward current	$I_f$	12	mA
Laser reverse voltage	$BVR_{PD}$	-5	V
ESD <sup>1</sup>		Class 1	

Note:  
 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.

1. HBM

**Electro-optical Characteristics**

 (T<sub>case</sub> = 30°C, CW operation unless otherwise stated.)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Peak emission wavelength	$\lambda_p$		840	850	859	nm
Operating temperature	T <sub>op</sub>		-30		85	°C
RMS spectral width	$\Delta\lambda$	I <sub>f</sub> = 6 mA			0.65	nm
$\lambda_p$ temperature coefficient	$\Delta\lambda_p$			0.06		nm/°C
Beam divergence	$\Theta$	P <sub>out</sub> = 1.4 mW Full width 1/e <sup>2</sup>			23	deg
Relative intensity noise	RIN <sub>12</sub>	I <sub>f</sub> = 8 mA			-122	dB/Hz
Rise/Fall time <sup>1</sup>	t <sub>r</sub>	20% – 80%			80	psec
	t <sub>f</sub>	20% – 80%			80	
Threshold current	I <sub>th</sub>		0.50		1.20	mA
I <sub>th</sub> temperature variation	$\Delta I_{th}$	T = -30°C to 85°C	±0.4		±0.6	mA
Laser forward voltage	V <sub>f</sub>	I <sub>f</sub> = 4 mA			2.1	V
Series resistance	R <sub>s</sub>	I <sub>f</sub> = 6 mA	55		70	Ohms
Slope efficiency <sup>2</sup>	$\eta$		0.25		0.35	mW/mA
Slope efficiency temperature variation	$\Delta\eta/\Delta T$	T = 25°C to 85°C		-6000		PPM/°C
		T = -30°C to 25°C		-4000		

1. Drive electronics and optical measurement hardware affect Rise/Fall Time measurement. Rise/Fall Time is specified using an AC coupled 50  $\Omega$  voltage source and DC bias T. P<sub>avg</sub>=400  $\mu$ W, Extinction Ratio=6 dB.
2. Tighter specification ranges are available upon request.

**Ordering Information**

For more information on this or other products and their availability, please contact your local JDSU account manager or JDSU directly at 1-800-498-JDSU (5378) in North America and +800-5378-JDSU worldwide, or via e-mail at customer.service@jdsu.com.

**Sample: PL-VD0-00-SG0-C0**

Part Number	Description
PL-VD0-00-SG0-C0	850 nm 4.25 G VCSEL Die