

850 nm 2.5 G VCSEL TOSA

PL-Sxx-00-S20-Cx



Key Features

- Data rates up to 2.5 Gbps
- Optimized for -40 °C to 85 °C transceiver applications
- Optical power monitor with excellent tracking
- Common cathode or common anode VCSEL TO package aligned to a plastic barrel
- Custom specification tolerances available
- Fully burned-in and stabilized
- Class 3B laser product

Benefits

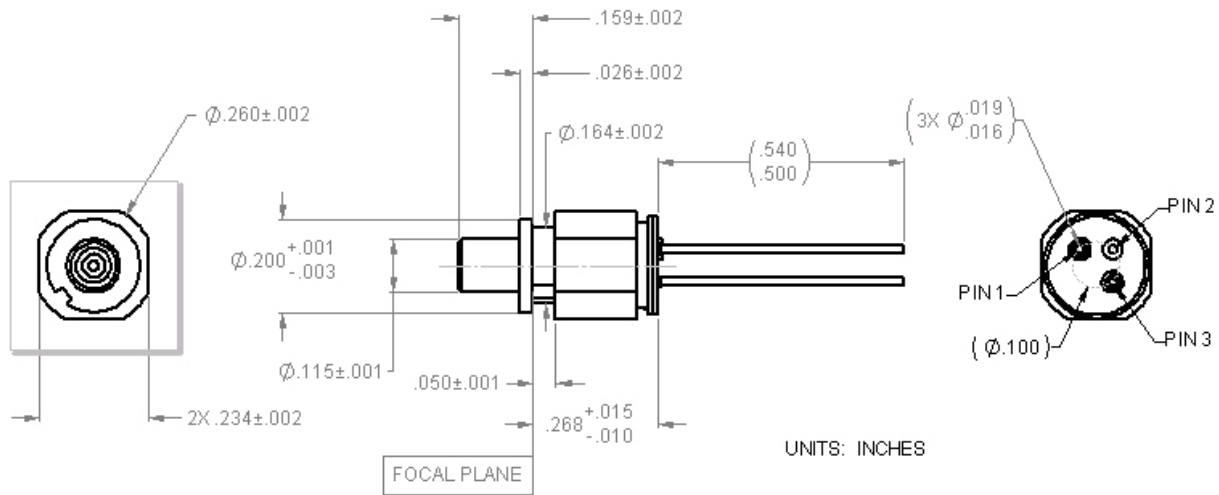
- Proven performance and reliability per GR-468-CORE
- Very high reliability
 - Low FIT
 - High MTBF
- Industrial temperature operation
- AC modulation performance verification

This JDSU 850 nm 2.5 Gbps LC/SC connectorized TOSA (Transmit Optical Sub-Assembly) is designed for high-speed data communication applications in Data-com transceiver modules. The product utilizes a high performance, high reliability VCSEL integrated in a TO-46 package aligned to a precision plastic barrel. The JDSU design produces excellent monitor current tracking over temperature. Each unit receives JDSU's proprietary burn-in and stabilization process to ensure a low failure rate and long life expectancy while providing continuously consistent performance. Each part is electro-optically tested to ensure optimum performance and yield in the application.

The PL-Sxx-00-S20-Cx converts an electrical signal into optical power at data rates up to 2.5 Gbps and is engineered for performance over extended operating temperature and power conditions with high reliability. It can be used with 50/125 μm and 62.5/125 μm multimode fibers.

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Mounting Dimensions (LC Version)



PL-SLC-00-S20-C0

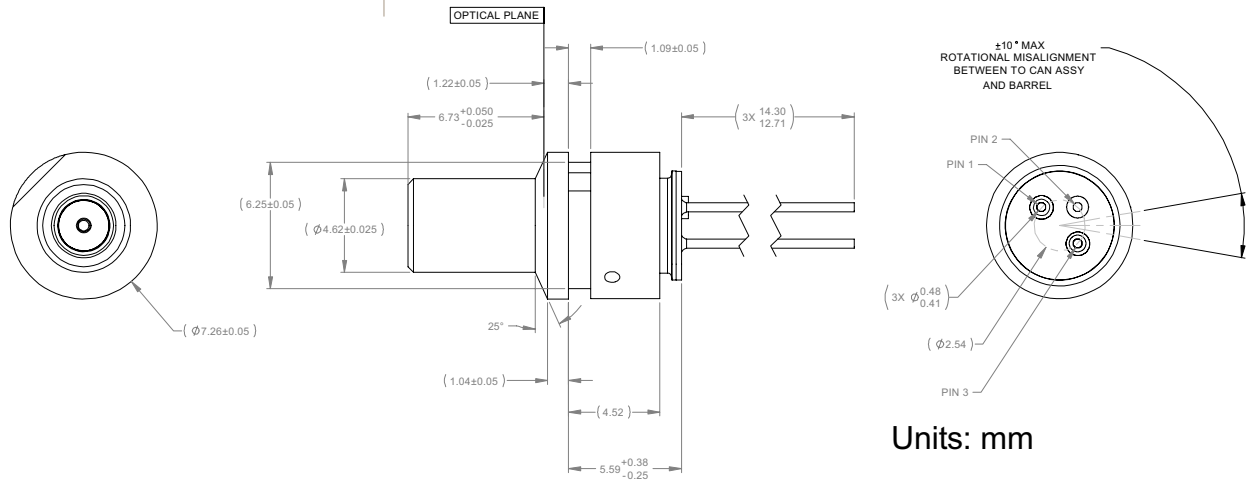
Pin	Symbol	Function
1	A _{LD}	VCSEL Anode
2	K _{LD} , A _{PD}	VCSEL Cathode, Monitor Anode, Case
3	K _{PD}	Monitor Cathode

PL-SLA-00-S20-C0

Pin	Symbol	Function
1	K _{LD}	VCSEL Cathode
2	A _{LD} , K _{PD}	VCSEL Anode, Monitor Cathode, Case
3	A _{PD}	Monitor Anode

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Mounting Dimensions (SC Version)



PL-SSA-00-S20-C0

Pin	Symbol	Function
1	K_{LD}	VCSEL Cathode
2	A_{LD}, K_{PD}	VCSEL Anode, Monitor Cathode, Case
3	A_{PD}	Monitor Anode

Shipping Information

Shipped in anti-static stackable trays.

Absolute Maximum Ratings

($T_{case} = 25^\circ C$, Continuous Wave (CW) operation unless otherwise stated)

Parameter	Symbol	Ratings	Unit
Storage temperature	T_{st}	-40 to +125	$^\circ C$
Lead solder temperature	T_s	260 $^\circ C$ for 10 sec. 2 mm from case	
Laser forward current	I_f	12	mA
Laser reverse voltage	BVR_{LD}	-5	V
Photodiode forward current	I_{fm}	10	mA
ESD ¹		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

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Electro-optical Characteristics(T_{case} = 25 °C , CW operation unless otherwise stated)

Parameter	Symbol	Test Condition	Minimum	Typical	Maximum	Unit
VCSEL						
Case operating temperature	T _{op}		-40		85	°C
Peak emission wavelength	λ _p		840	850	860	nm
RMS spectral width	Δλ	I _f = 6 mA			0.65	nm
λ _p temperature coefficient	Δλ _p	T = -40 °C to 85 °C		0.06		nm/°C
Threshold current	I _{th}			1.5	2.5	mA
I _{th} temperature variation	ΔI _{th}	T = -40 °C to 85 °C			1.5	mA
Slope efficiency ¹	η	T = 25 °C	0.08	0.11	0.13	mW/mA
		P _{out} = 0.5 mW				
		T = -40 °C			0.15	mW/mA
	η	T = 85 °C	0.06			mW/mA
Slope efficiency temperature variation	Δη/ΔT			-6000		PPM/°C
Laser forward voltage	V _f	I _f = 6 mA		1.7	2.0	V
Series resistance	R _s	T=25 °C, I _f = 6 mA	20	45	60	Ohms
		T=-40 °C			70	Ohms
		T=85 °C	20			Ohms
Series resistance temperature coefficient	ΔP _σ /ΔT	I _f = 6 mA T = 0 °C to 70 °C		-2000		ppm/°C
Rise/Fall time ²	t _r	20% - 80%		100	130	psec
	t _f	20% - 80%		120	150	psec
Coupling efficiency	efiber			75		%
Average fiber coupled power	P _{OC}	I _f = 6 mA		0.50		mW
Relative intensity noise	RIN ₁₂	1 GHz BW, I _f = 6 mA		-130	-122	dB/Hz
Monitor Photodiode						
Photocurrent	I _{PD}	P _{out} = 0.5 mW V _r = 1.5 V	0.15		0.6	mA
Monitor current tracking ³	ΔI _m	P _{out} = 0.5 mW T = 0 to 70 °C V _{rm} = 1.5 V		0.05	0.1	%/°C
Monitor dark current	I _D	V _r = 5 V			20	nA
Monitor capacitance	C _M	V _{rm} = 1.5 V			100	pF

1. Slope efficiency is defined as ΔP_o/ΔI_f.

2. Drive electronics and optical measurement hardware affect Rise/Fall Time measurement.

3. Change in optical power over temperature while operated in a feedback loop in which the monitor current is held constant.

Order 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-SLC-00-S20-C0

Part Number	Description
PL-SLC-00-S20-C0	850 nm 2.5 G VCSEL TOSA with common cathode
PL-SLA-00-S20-C0	850 nm 2.5 G VCSEL TOSA with common anode
PL-SSA-00-S20-C0	850 nm 2.5 G VCSEL TOSA with common anode