	<b>Manufacturing Specification</b>				
	<b>Product Specification</b>				
	<b>Title:</b>	<b>1550nm Low DOP Superluminescent LED</b>			
	<b>Doc #:</b>	SLM0106-00-000	<b>Revision:</b>	1	<b>Total Pages:</b>

<b>REVISION HISTORY</b>			
Rev	Revision Date	Originator	Description of change
1	01-August-2022	Ronaldo Lacopia	Initial Product Specification Release

<b>Originator:</b>	Ronaldo Lacopia		
<b>Checked:</b>	Hafiziarto J. Mukhtar		

Approval	Name	Signature	Date
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**1550nm Low DOP  
Super luminescent LED**

**DL-CS5083A-LDP-FP**

## A. PRODUCT DESCRIPTION

DenseLight Semiconductor's 1550 nm Low DOP C Band 14 pin Butterfly SLED meets customers' demand for a highly efficient light source, clean signal path and low polarization <5%, which simplifies test and measurement while allowing increased sensitivity. It allows a simple way of improving the accuracy of sensing systems using the inherent property of the chip, allowing designers to reduce system costs. It comes with Tuning Charts for the designer to optimize PER performance.

It compliments DenseLight's Low DOP O band SLEDs which gives our customers expanded choice capabilities for future telecom bands for future transmission band support.

## B. KEY FEATURES

- C Band 1535 – 1560 nm
- Fiber Coupled output Power of typ. 10mW
- PER of <1.0dB
- Typ. 3dB bandwidth 35nm
- Built-in independent monitor photodiode
- Light Output: FC/APC Connector
- Operating temperature: 0°C to 70°C.
- Tuning Charts to optimize PER performance.
- Telcordia GR-468 Compliant
- ROHS Compliant

## C. APPLICATIONS:

- Structural Health Monitoring
- Fiber Optic Gyroscope
- Optical Test Instrument
- Fiber Optic Sensors
- Fiber Optic Communications
- Optical Coherence Tomography
- Biomedical Imaging Device

## D. ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Condition	Min	Max	Unit
Reverse voltage	$V_R$	-	-	2	V
Forward current	$I_F$	-	-	500	mA
Forward voltage	$V_F$	$I_{op}$	-	2.5	V
Case temperature	$T_c$	$I_{op}$	-40	65	°C
SLED temperature <sup>1</sup>	$T_{SLED}$	$I_{op}$	0	70	°C
Thermoelectric cooler voltage	$V_{TEC}$	-	-	3.0	V
Thermoelectric cooler current	$I_{TEC}$	-	-	1.8	A
Storage temperature	$T_{stg}$	Unbiased	-40	85	°C
Storage humidity	-	-	5	85	%RH
Electro static discharge (ESD)	$V_{ESD}$	Human body model	-	500	V
Lead soldering temperature	$T_{temp}$	-	-	260	°C
Lead soldering time	$T_{time}$	-	-	10	sec

## E. ELECTRICAL AND OPTICAL CHARACTERISTICS ( $T_{SLED} = 25\text{ °C}$ )

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Operating current	$I_{op}$	-	-	-	450	mA
Forward voltage	$V_F$	$I_{op}$	-	-	2.0	V
Power in PMF	$P_o$	$I_{op}$	8	10	-	mW
Central wavelength	$\lambda$	$I_{op}$	1530	1550	1570	nm
Bandwidth	$B_{FWHM}$	$I_{op}$	30	35	-	nm
Spectrum modulation	R	$I_{op}$	-	0.5	1	dB
Polarization extinction ratio	PER	$I_{op}$	-	0.5	1	dB
Thermistor resistance	$R_{therm}$	$T = 25\text{ °C}$	9.8	10.0	10.2	k $\Omega$
Thermistor B-value	$B_{25/50}$	$T = 25\text{ °C}$	-	3930	-	K
Thermoelectric cooler voltage	$V_{TEC}$	$I_{op}$	-	-	2.5	V
Thermoelectric cooler current	$I_{TEC}$	$I_{op}$	-	-	1.1	A

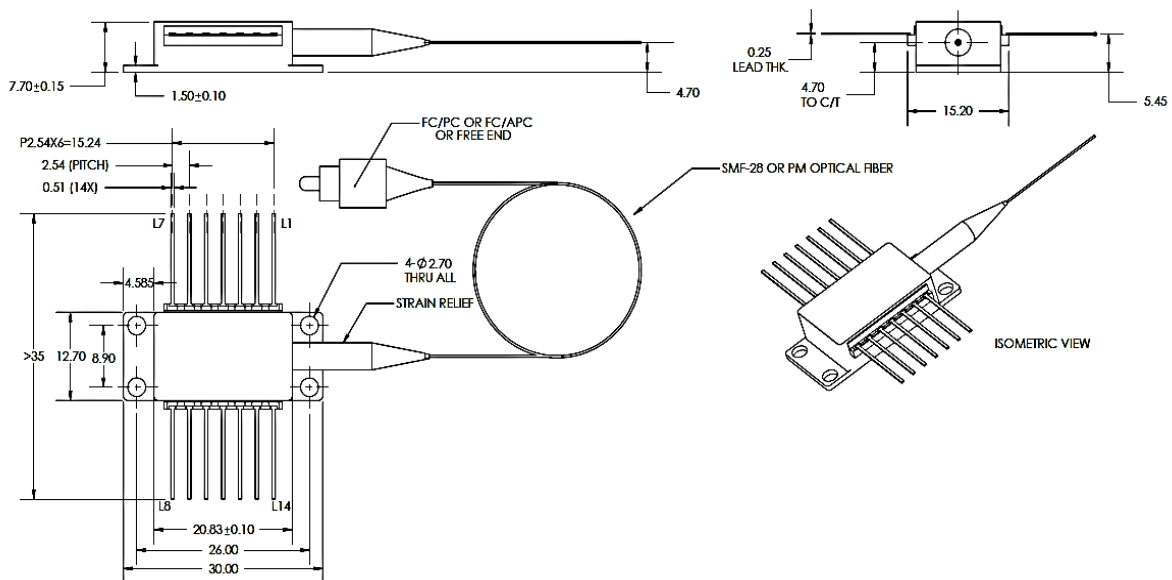
1  $T_{SLED}$  is monitored by internal thermistor with external pin out.

2 PER can be tuned from 350-450mA, 20C to 30C

**F. PACKAGE**

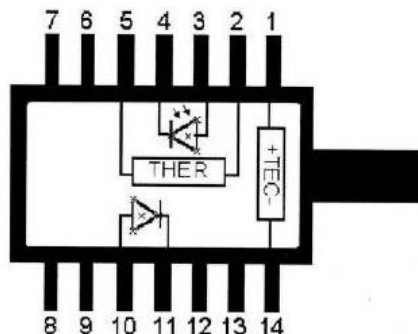
**BTF package**

Part	Description
Package type	BTF
Fiber:	PM Panda
MFD	10.5 μm
Cladding diameter	125μm
Coating diameter	245μm
Fiber pigtail length	1 m
Fiber bending radius	>40 mm
Connector	FC/APC
Dimensions	See figure



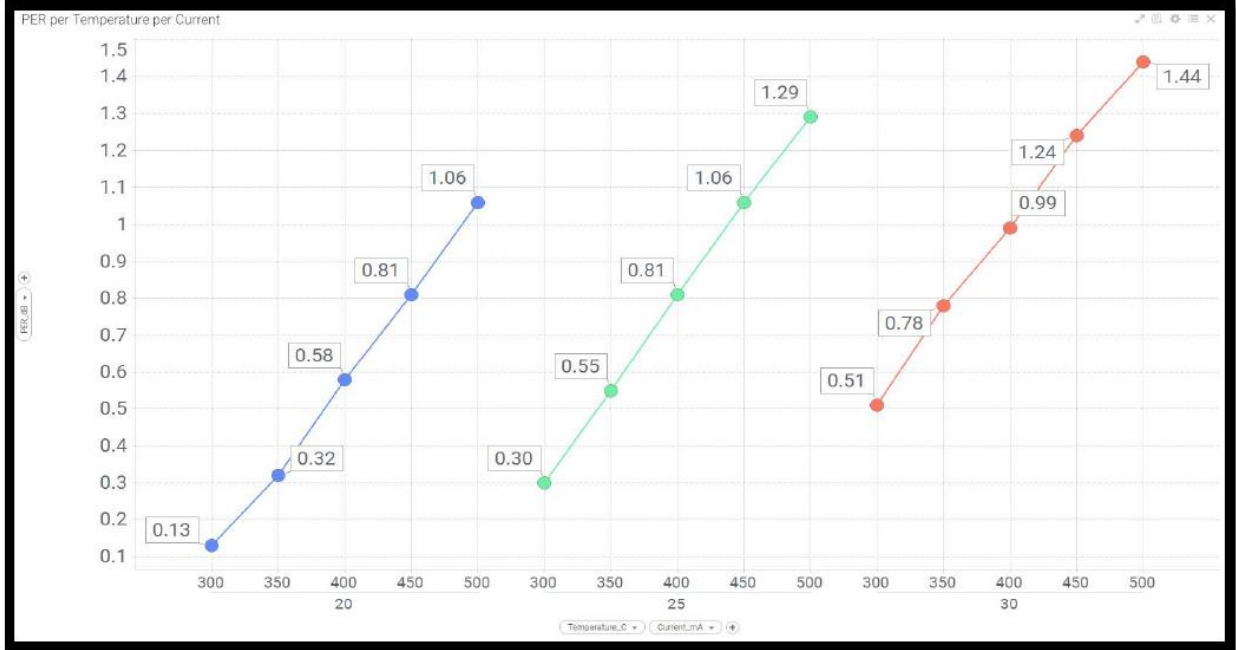
Pin Assignment	
1	TEC +
2	THERMISTOR
3	PD ANODE (-)
4	PD CATHODE (+)
5	THERMISTOR
6	-
7	-
8	-
9	-
10	SLED ANODE +
11	SLED CATHODE -
12	-
13	CASE
14	TEC -

+&- refer to biasing polarity

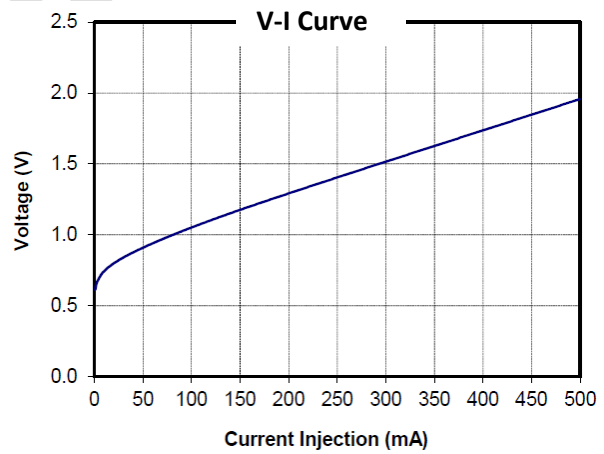
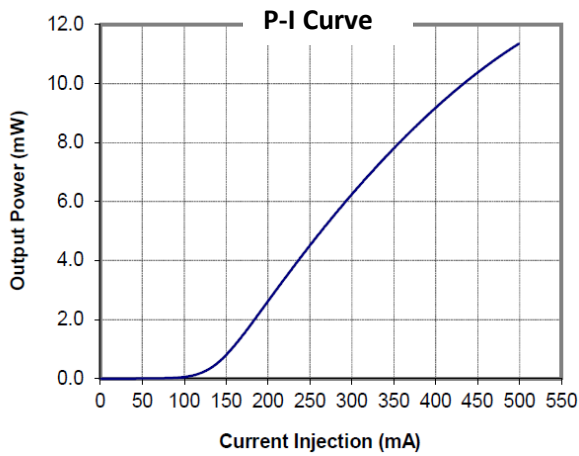


Top view

## G. TYPICAL PERFORMANCE CHARACTERISTICS



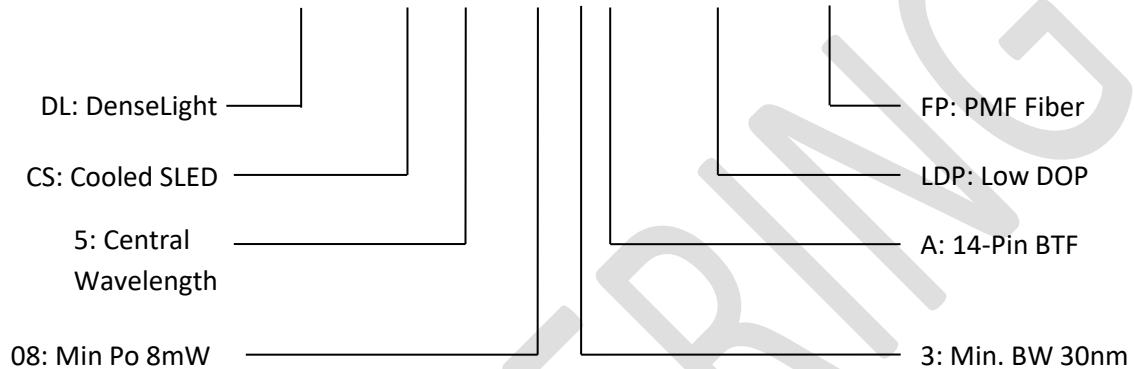
PER Tuning Curve



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## H. PRODUCT NAMING

### DL-CS5083A-LDP-FP



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