25G DFB Laser TOSA Package

Description

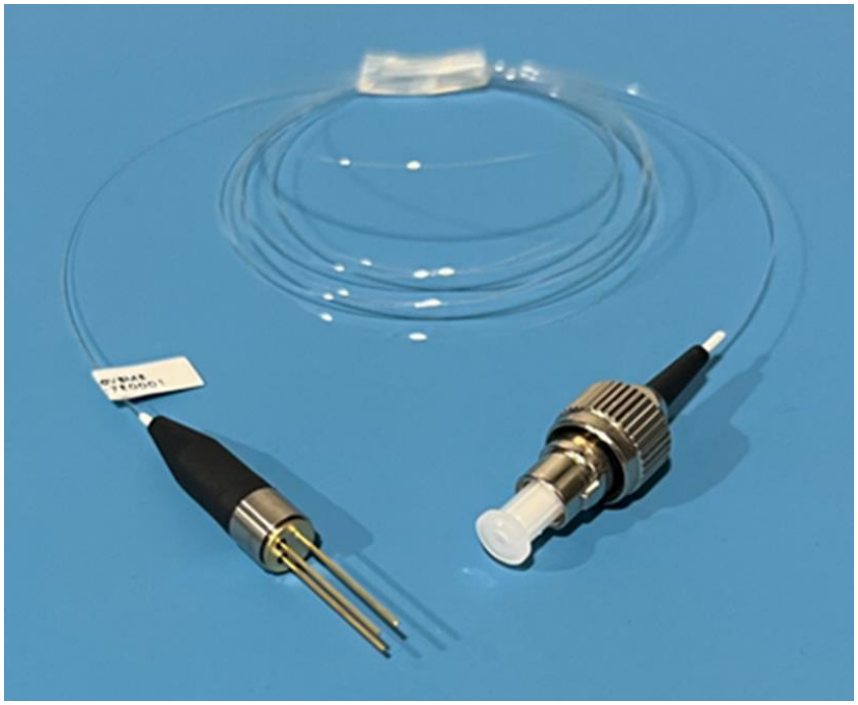
A 25 Gb/s edge emitting laser diode in a TO-can package. The Multi-quantum well distributed feedback (DFB) laser is directly modulated (DML) with a RF signal. This device comes with a built in Photodiode monitor to allow of Auto-bias operation. Various build configurations allow the user to customize the optical connector as well as the mounting brackets for the device. Optics sub-assembly includes isolator.

Features

- TO-Can Package
- Single mode Pigtail cable
- 1310 nm CW
- High SFDR
- Built-in InGaAs monitor Photodiode
- Wide Temperature operating range
- Built in Optical Isolator

Applications

- 5G
- Datacenters
- RF over Fiber (RFoF)



Laser Electro-Optical Characteristics (T_{op} 23 ± 3°c, unless otherwise specified)

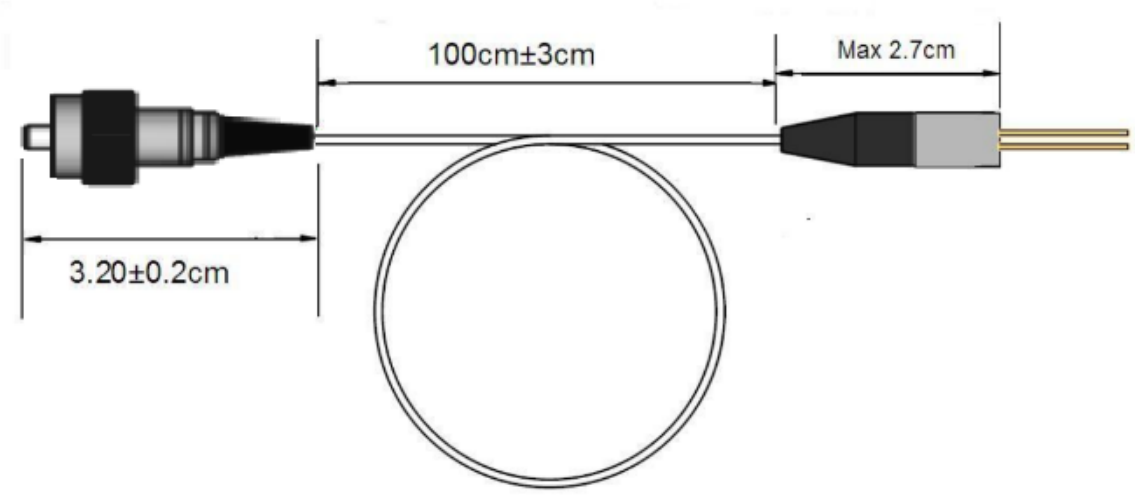
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Peak Wavelength	λ	1304.5 1545	1310 1550	1317.5 1557	nm	
Threshold Current	I_{th}		6	13	mA	T=25 °C
Front Power	P_o	1			mW	$I_f = I_{th}$ + 20 mA
Slope Efficiency	η	0.2	0.3		W/A	$I_f = I_{th}$ + 20 mA
Series Resistance	R			10	Ohms	P_o = 8 mW
Forward Voltage	V_f		1.1	1.5	V	$I_f = I_{th}$ + 20 mA
Spectral Wavelength Width (RMS)	Δλ		0.3	0.5	nm	P_O = 5mW at -20 dB
Frequency Bandwidth	BW	10			GHz	Designed RF board.
Side Mode Suppression Ratio	SMSR	30			dB	
Monitor Current	Im	0.4	0.5	1.0	mA	Iop = 30 mA
Optical Return Loss	ORL			-30	dB	CW = 1310 nm
Tracking Error	Te	-1.5		1.5	dB	-40 – 80 °C

Laser Absolute Maximum Ratings

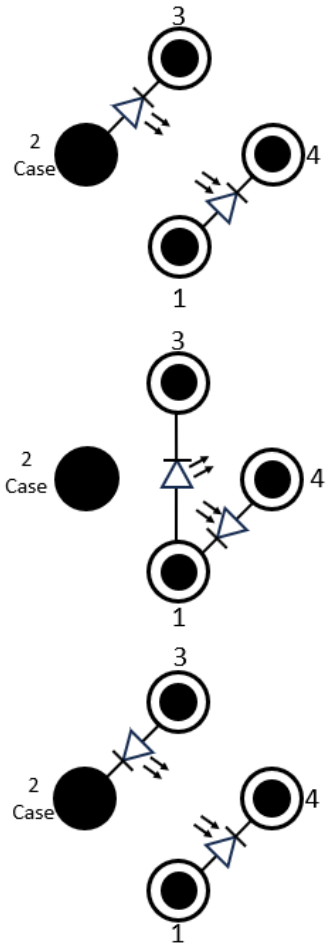
Parameter	Symbol	Condition	Min.	Max.	Unit
Voltage	V			1.8	V
Forward Current	I_F			80	mA
Storage Temperature	T_{stg}		-25	90	°C
Storage Humidity	H_{stg}			85	% r.H.
Operating Temperature	T_{op}		-25	85	°C
Soldering Temperature	T_{st}	60 sec		200	°C
ESD Susceptibility		HBM	100		V

Operating at maximum operating specs for prolong periods of time will damage the device.

Device Dimensions



Device Pin Configuration (Bottom View)



Build A: DFB Laser Anode Case Ground

Pin Function:

1) Monitor PD Anode
2) Laser Anode Tied to Case Ground
3) Laser Cathode
4) Monitor PD Cathode

Build B: Tied Photodiode-Laser Build

Pin Function:

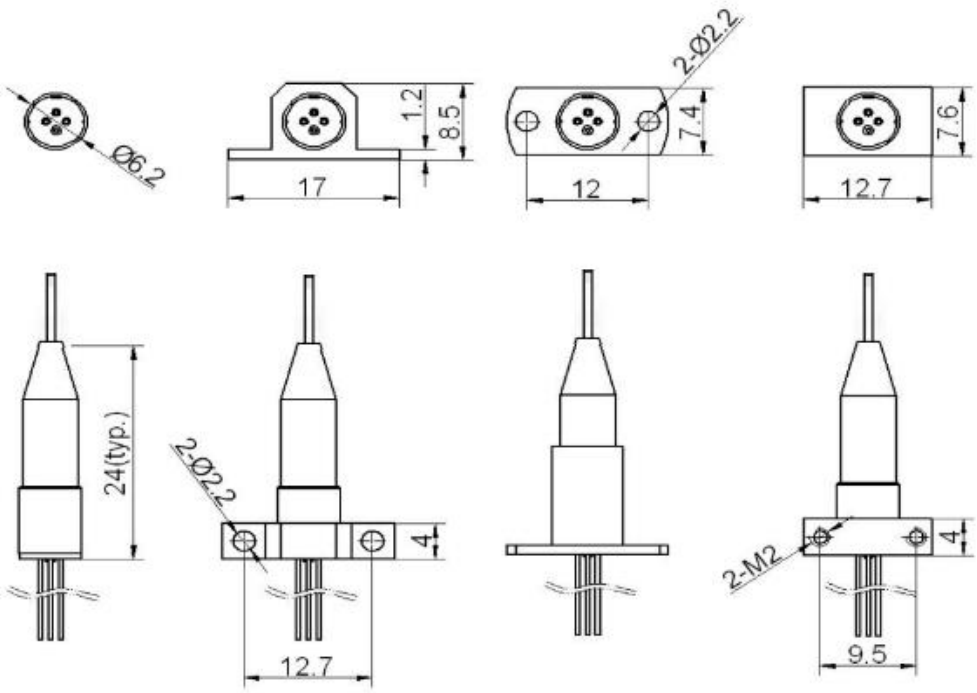
1) Laser Anode/ Monitor PD Cathode
2) Case Ground
3) Laser Cathode
4) Monitor PD Anode

Build C: DFB Laser Cathode Case Ground

Pin Function:

1) Monitor PD Anode
2) Laser Cathode Tied to Case Ground
3) Laser Anode
4) Monitor PD Cathode

Build Configurations – Mounting Support



(a) (b) (c) (d)

Device Nomenclature

DL25-TO-X-XX-X

Product Line – 25G DFB Laser

Device body style – TO-CAN

Device Mounting Support;

- **(a)** No Mount
- **(b)** Horizontal Mount
- **(c)** Vertical Mount
- **(d)** Horizontal threaded

Optical Connector

(00) No Connector
(FA) FC/APC
(FP) FC/PC
(SA) SA/APC
(SP) SC/PC

Pin Configuration

a) DFB Laser Anode Case GND
b) Tied Photodiode – Laser
c) DFB Laser Cathode Case GND

Inquiry Information

Sales: All inquiries regarding sales please contact Sales@NuPhotonics.com

General: If you are interested in a custom solution, general information, or engineering related information please contact Inquiry@NuPhotonics.com

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Definitions: Product State

Alpha Build: Devices in Alpha build are in internal engineering build and testing stages. Major changes may happen for production build.

Beta Build: Devices in Beta build are for external customer and engineering sample testing stages. Minor changes may happen for production build.

Production Build: Customer ready devices. Small appearance changes may occur between devices.

Obsolete: Currently not supported.