



25G BOSA PIN-TIA & 1270 nm DFB

Description

A 1270 nm DFB laser diode for transmission and PIN Photodiode with internal TIA for receiving. The devices feature low threshold current, high bandwidth, and LC single mode fiber input. These devices are compliant with Telcordia GR-468 standards. Offering large temperature operating range. The devices can come configured with through hole leads or with a Flex-PCB mounted on the device. We can do a single Flex-PCBs that joins both photodiode and laser connections on one Flex-PCBs or individual Flex-PCBs per device.

Features

- 1270 nm Transmit wavelength
 - Built in monitor Photodiode
- 1330 nm Receive wavelength
- -40°C to 85°C operating range
- 18 GHz Cutoff Frequency
- -16 dBm receive sensitivity
- 1.5 mW optical output power
- Optional Flex-PCB with snap connector



Applications

- 25 Gigabit Ethernet



Opto-Electrical Specifications Laser

Parameter	Symbol	Unit	Min.	Typical	Max.	Test Condition
Wavelength	λ	nm	1260	1270	1280	lop = 30 mA, Temp = 25°C
Threshold Current	I_{th}	mA	-	6	12	Temp = 25°C
Operating Current	I_o	mA	-	35	-	Temp = 25°C
Optical power	P_{out}	mW	1.6	-	3	lop = 30 mA, Temp = 25°C
Forward Voltage	V	V	-	1.2	1.5	lop = 30 mA, Temp = 25°C
Monitor Current	I_{mon}	uA	100	-	1000	lop = 30 mA, Temp = 25°C
Side mode Suppression Ratio	SMSR	dB	35	-	-	lop = 30 mA, Temp = 25°C
Spectral Width	$\Delta\lambda$	nm	-	1	-	RMS
Slope Efficiency	-	W/A	0.053	-	-	lop = 30 mA, Temp = 25°C
3dB Cut off Frequency	Fc	GHz	-	18	-	lop = 30 mA, Temp = 25°C

Opto-Electrical Specifications Photodiode

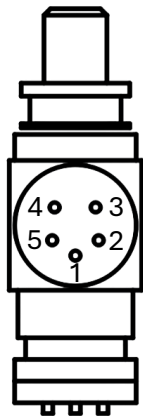
Parameter	Symbol	Unit	Min.	Typical	Max.	Test Condition
Central Wavelength	λ	nm	-	1330	-	-
Supply Voltage	V	V	-	3.3	3.6	Temp = 25°C
Operating Current	I_o	mA	-	25	-	Temp = 25°C
Differential output	V_{p-p}	V	-	300	350	-
Responsivity	Res	A/W	-	0.30	-	$\lambda = 1330$
Optical Sensitivity	SEN	dBm	-	-	-14	Temp = 25°C
Saturation	Ps	dBm	-3	-	-	-
Multiplied Dark Current	I_{dm}	nA	-	-	100	Temp = 25°C
3dB Cut off Frequency	Fc	GHz	-	19	-	Temp = 25°C

Absolute Maximum Specifications

Parameter	Symbol	Unit	Min.	Max.	Test Condition
Forward Voltage	V_{laser}	V	-	2	-
Forward Current	I_{laser}	mA	-	120	Temp = 25°C
TIA Supply Voltage	V_{tia}	V	-	5	Temp = 25°C
Storage Temperature	Tstg	°C	-50	80	-
ESD	HMD	V	-	500	-

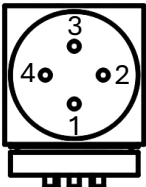


Device Pinout



Photodiode

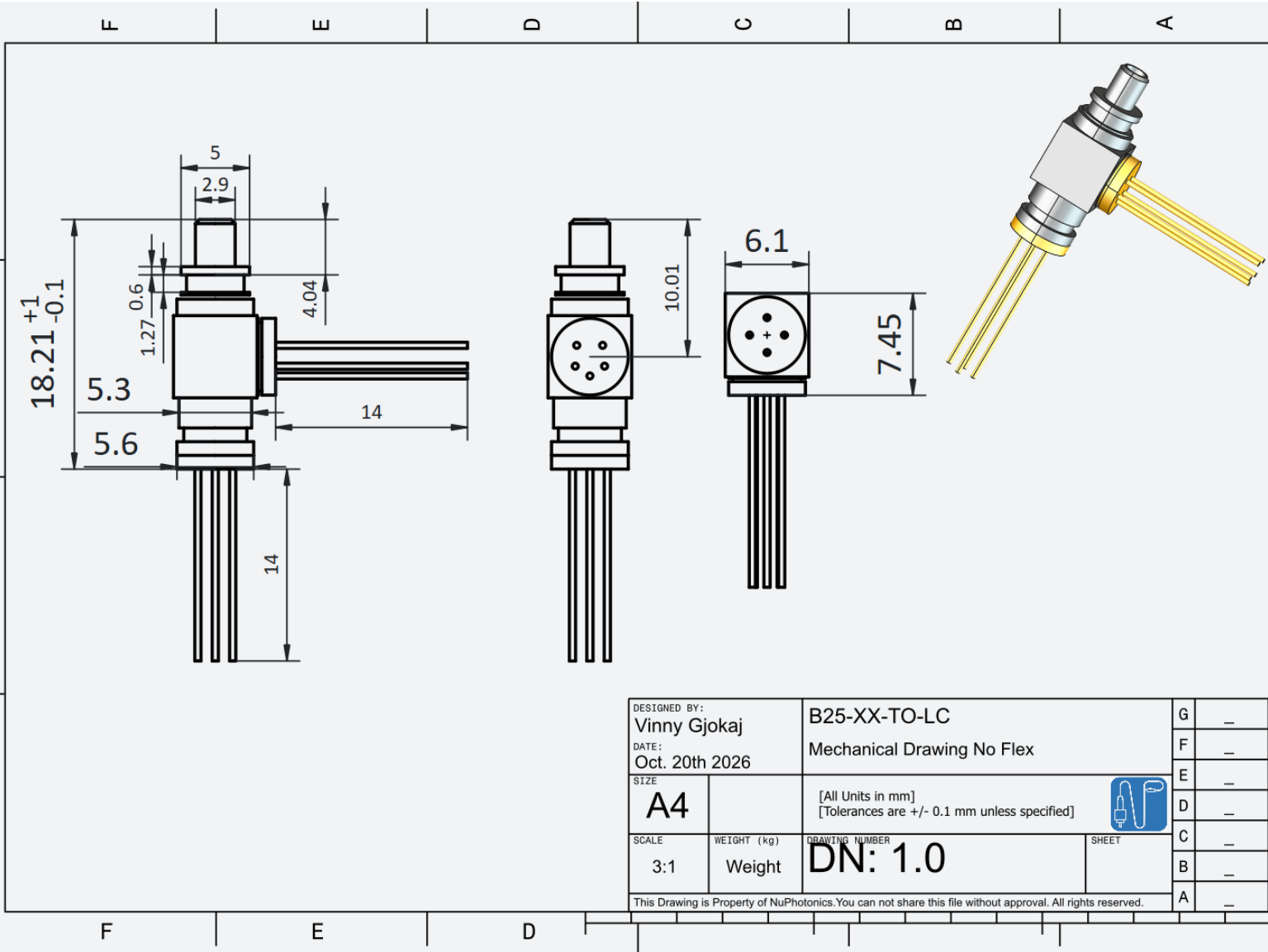
Pin #	Function
1	Case GND
2	Dout (+)
3	VCC
4	RSSI
5	Dout (-)

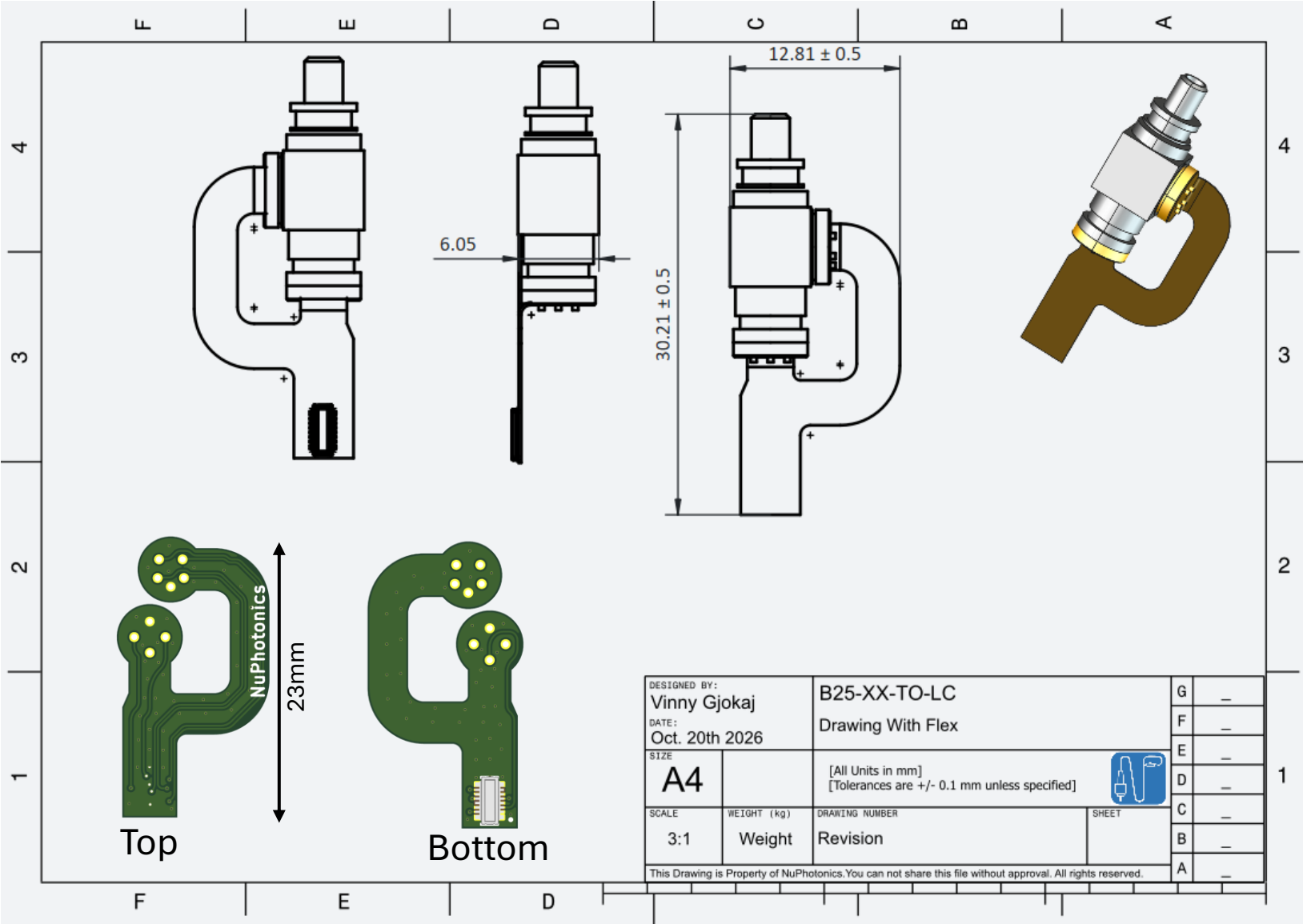


Laser

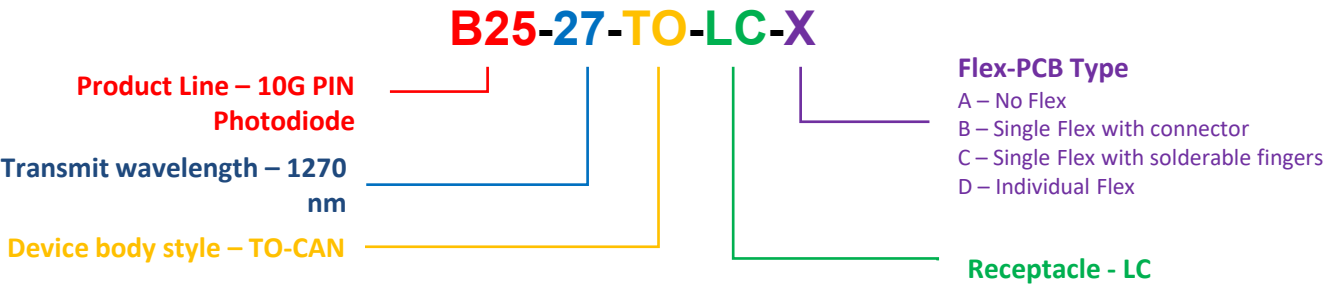
Pin #	Function
1	Laser Cathode
2	Case GND
3	LD Anode
4	PD Cathode

Mechanical Drawing





Device Nomenclature



Example – B25-27-TO-LC-B

25G BOSA-LC 1270 nm TX with Single Flex-PCB with clip mating connector



IMPORTANT NOTICES AND DISCLAIMERS

Information and Warranty Disclaimer

NuPhotonics provides technical and reliability information, including datasheets, design files, application notes, and other materials (collectively, “Resources”), to assist designers who are developing applications that incorporate NuPhotonics products. These Resources are provided “as is” and “with all faults.” NuPhotonics makes no warranties or representations, express or implied, regarding the Resources, including, without limitation, accuracy, completeness, reliability, or fitness for a particular purpose. NuPhotonics disclaims all implied warranties, including warranties of merchantability, fitness for a particular purpose, and non-infringement of third-party intellectual property rights.

Use of Resources

These Resources are intended for use only by skilled and qualified developers. The customer is solely responsible for selecting appropriate NuPhotonics products and for designing, validating, and testing their applications. The customer is further responsible for ensuring that their applications meet all applicable standards, safety requirements, and regulatory obligations.

Changes and Availability

NuPhotonics reserves the right to make corrections, modifications, enhancements, improvements, and other changes to its Resources and products at any time and without notice. NuPhotonics may discontinue any product or Resource without notice.

License and Restrictions

NuPhotonics grants a limited, non-exclusive, non-transferable license to use the Resources solely for the purpose of developing applications that incorporate NuPhotonics products. No other license, express or implied, is granted, including any license to third-party intellectual property. Reproduction, distribution, or display of the Resources, in whole or in part, without prior written permission from NuPhotonics is prohibited.

Limitation of Liability and Indemnification

In no event shall NuPhotonics be liable for any direct, indirect, incidental, special, consequential, or exemplary damages arising out of the use of the Resources. The customer agrees to defend, indemnify, and hold harmless NuPhotonics from and against any claims, damages, costs, losses, and liabilities arising from the customer’s use of the Resources or products.

Terms and Conditions

NuPhotonics objects to and rejects any additional or different terms proposed by the customer. For complete terms and conditions of sale, refer to the Legal section at www.nuphotonics.com.

Definitions: Product State

Alpha Build – Device is in internal engineering development and testing. Specifications are subject to significant change.

Beta Build – Device is available for external evaluation and engineering sampling. Specifications are subject to minor change.

Production Build – Device is released for production. Minor cosmetic or appearance variations may occur.

Obsolete – Device is no longer in production and is not supported.

Copyright © 2026, NuPhotonics LLC

Revision History

1.0 – Oct. 2026 – Initial Release