

**1 310 nm AlGaInAs MQW-DFB LASER DIODE
 FOR 10 Gb/s APPLICATION**

DESCRIPTION

The NX8341 Series is a 1 310 nm Multiple Quantum Well (MQW) structured Distributed Feed-Back (DFB) laser diode TOSA (transmitter optical subassembly) with InGaAs monitor PIN-PD in a receptacle type package designed for XENPAK/XPAK/X2/XFP transceiver.

APPLICATIONS

- 10 G BASE-LW/LR
- 10 G Fiber Channel

FEATURES

- Internal optical isolator
- Optical output power
- Low threshold current
- Wide operating temperature range
- InGaAs monitor PIN-PD

$$P_i = -2 \text{ dBm}$$

$$I_{th} = 8 \text{ mA TYP. @ } T_c = 25^\circ\text{C}$$

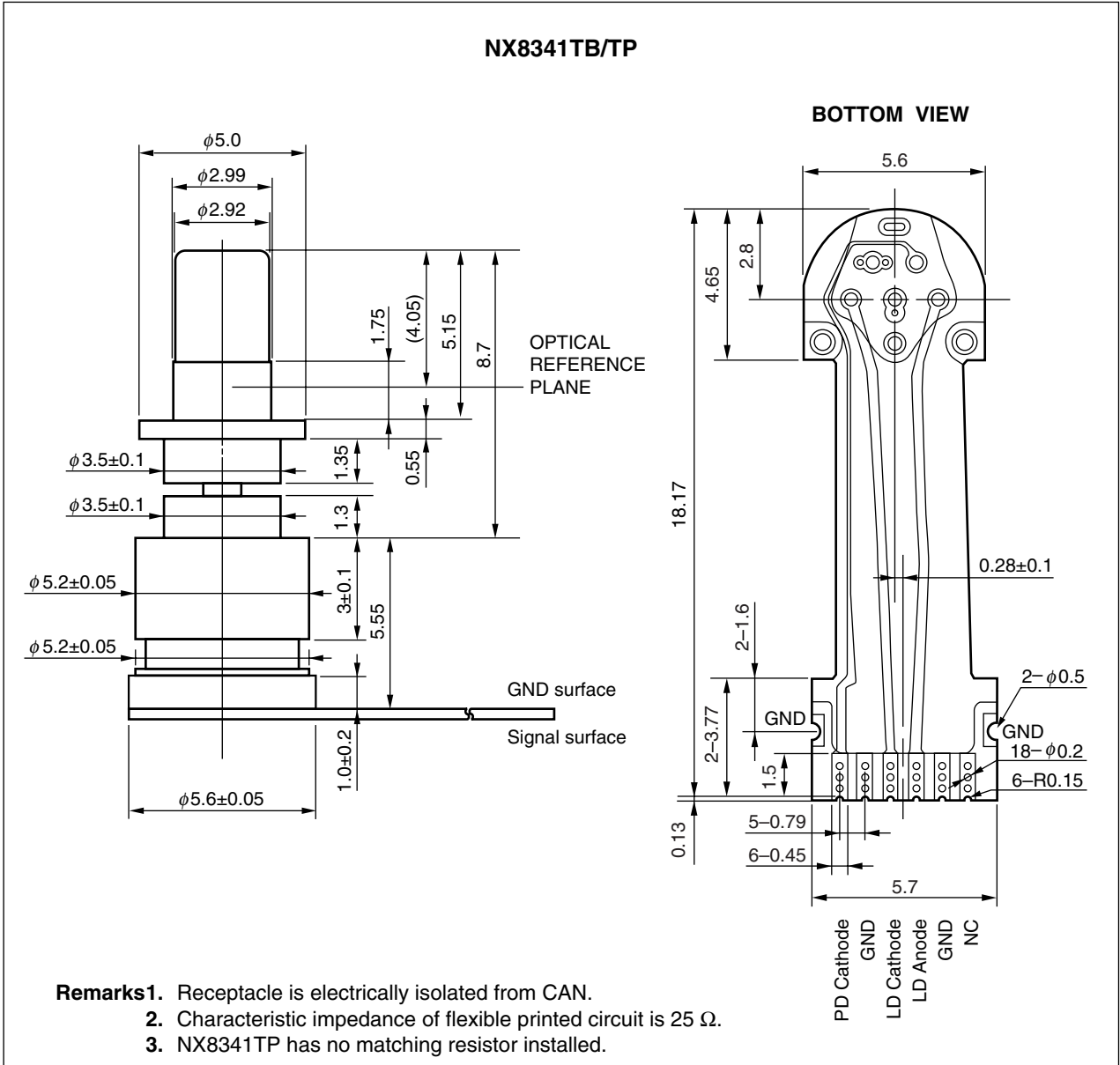
$$T_c = -5 \text{ to } +85^\circ\text{C}$$

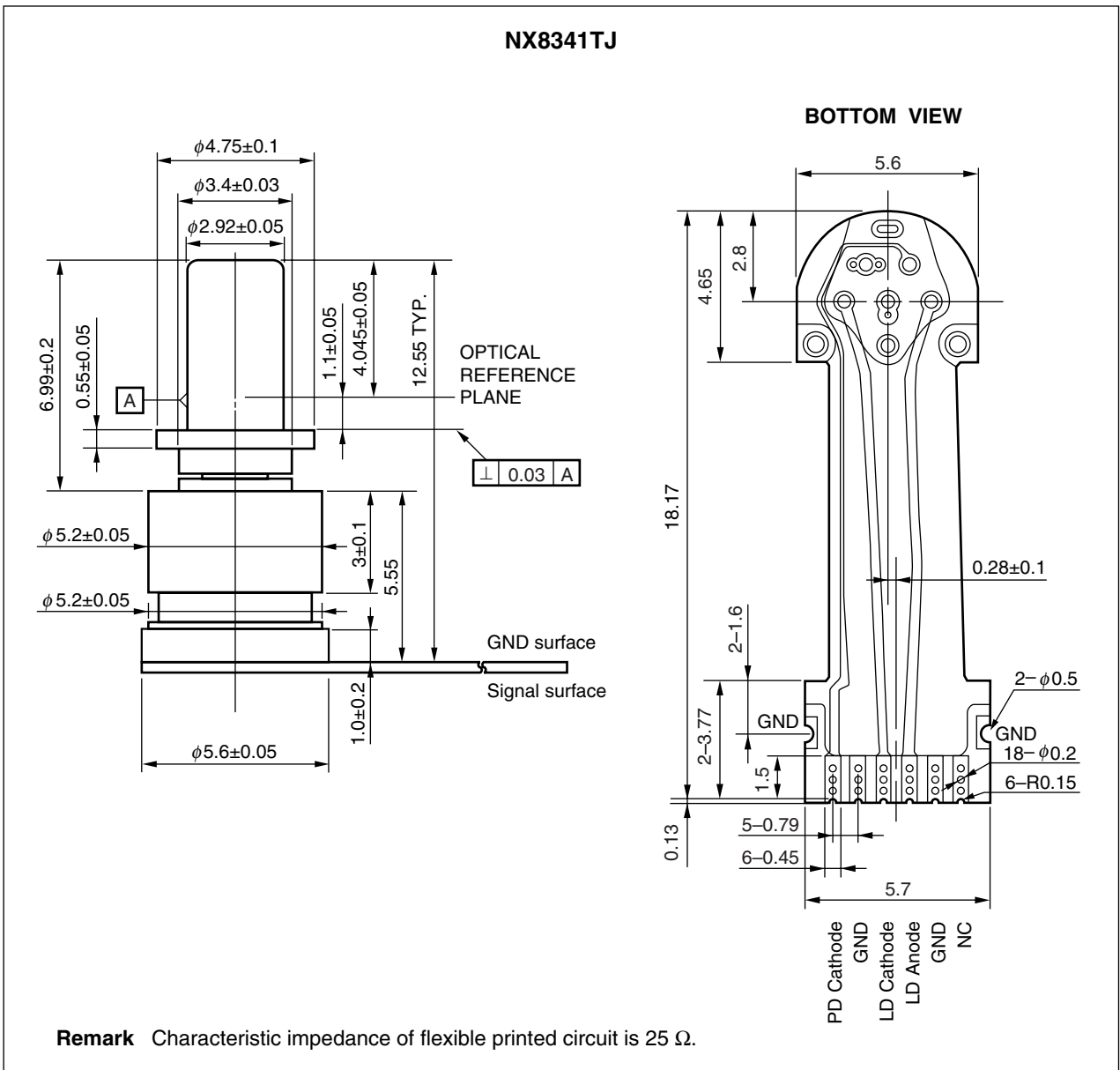


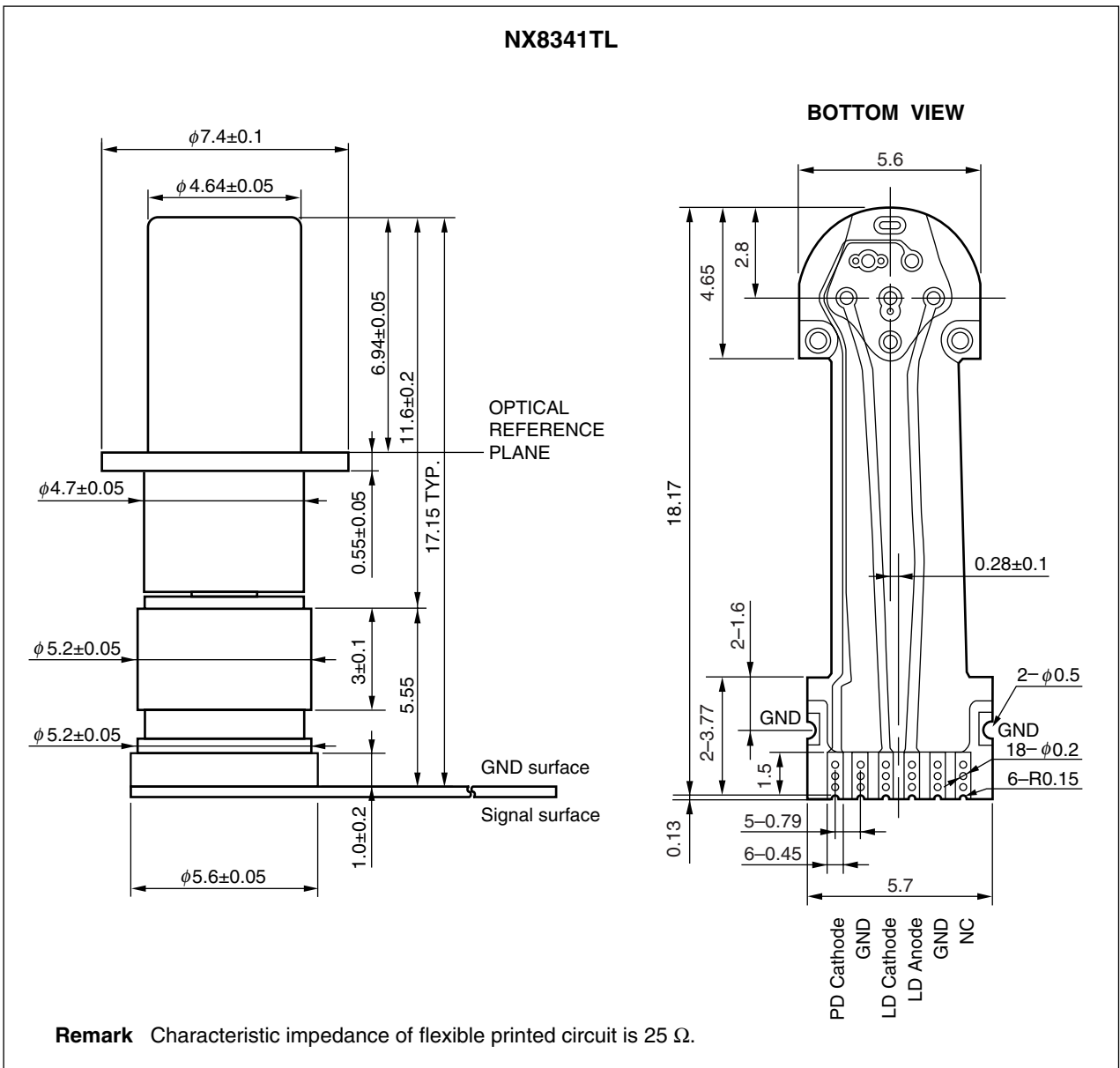
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PACKAGE DIMENSIONS (UNIT : mm)

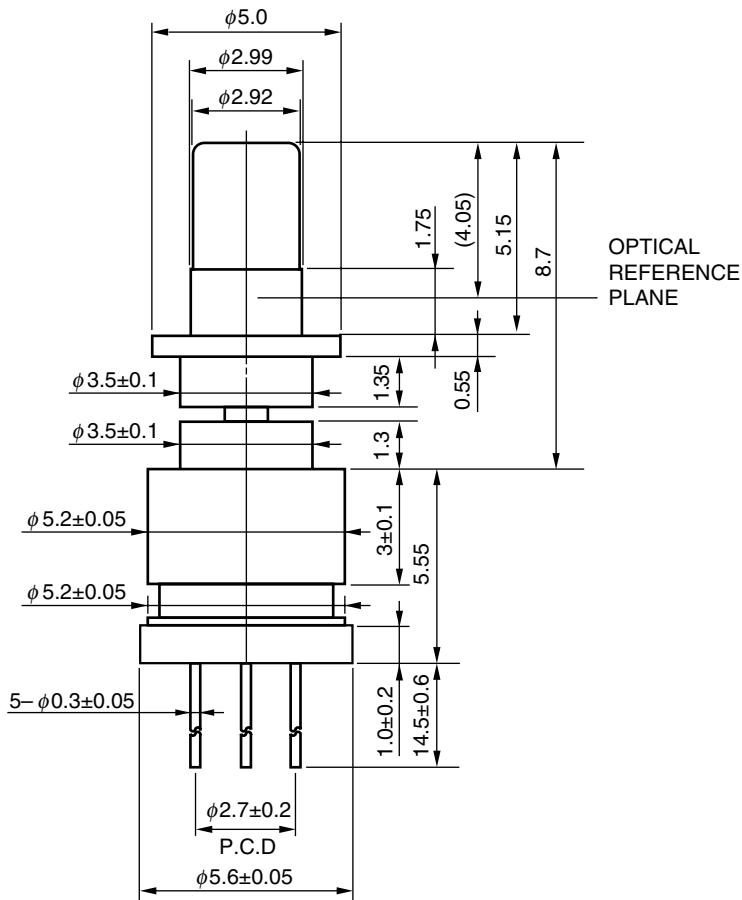
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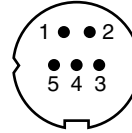




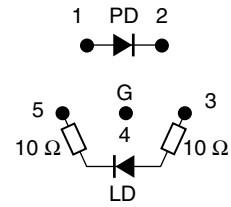
NX8341UB



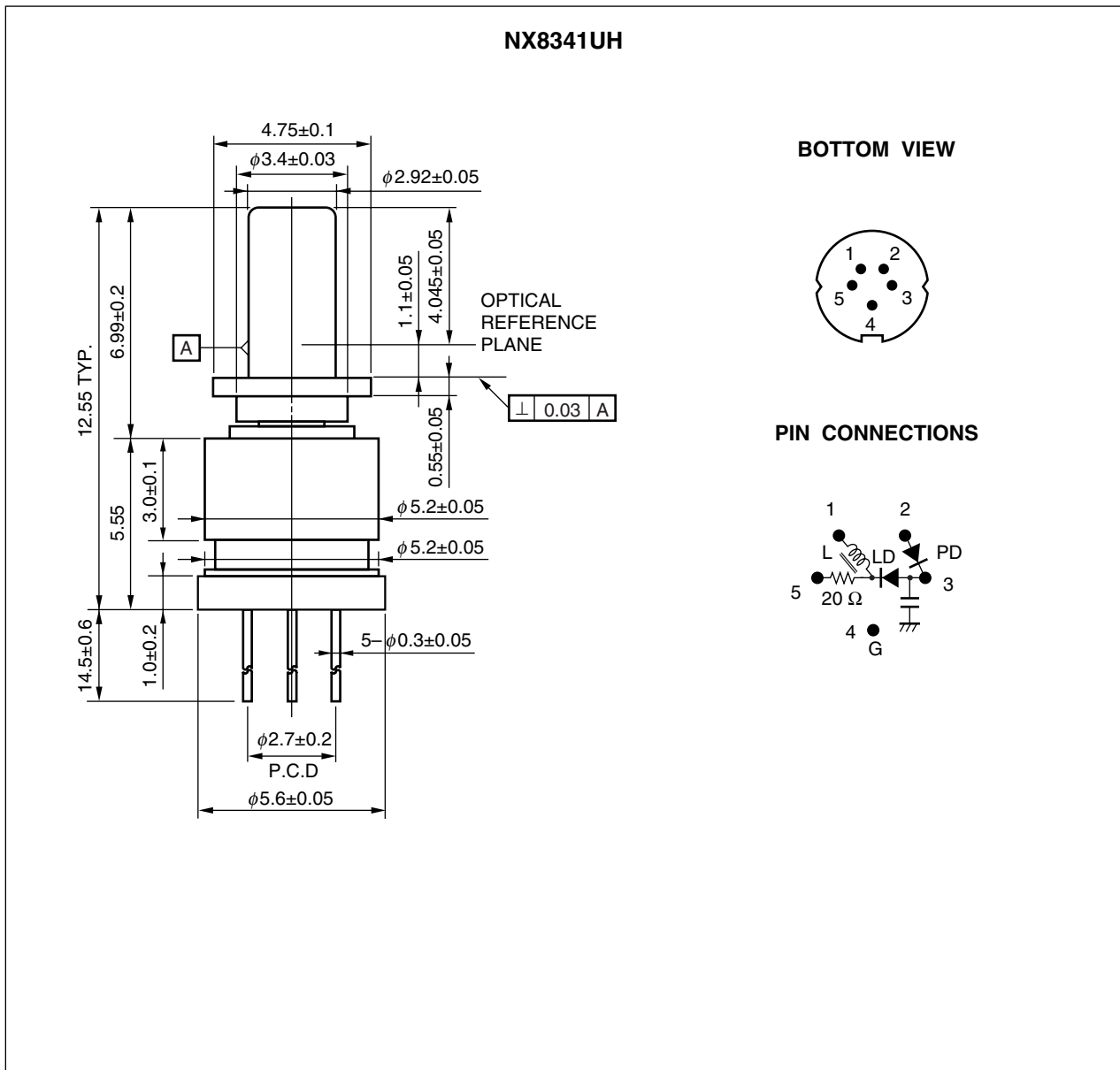
BOTTOM VIEW

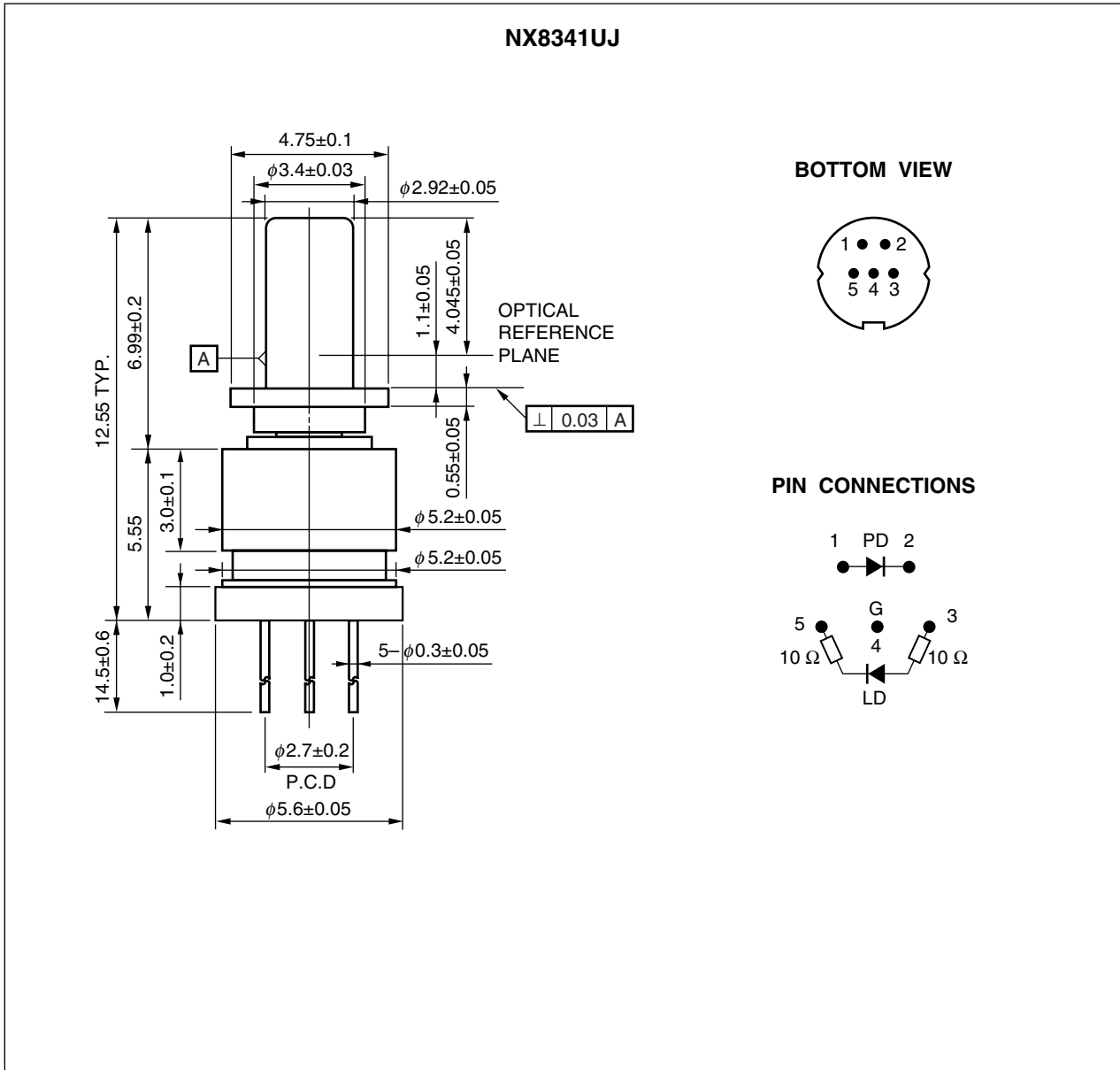


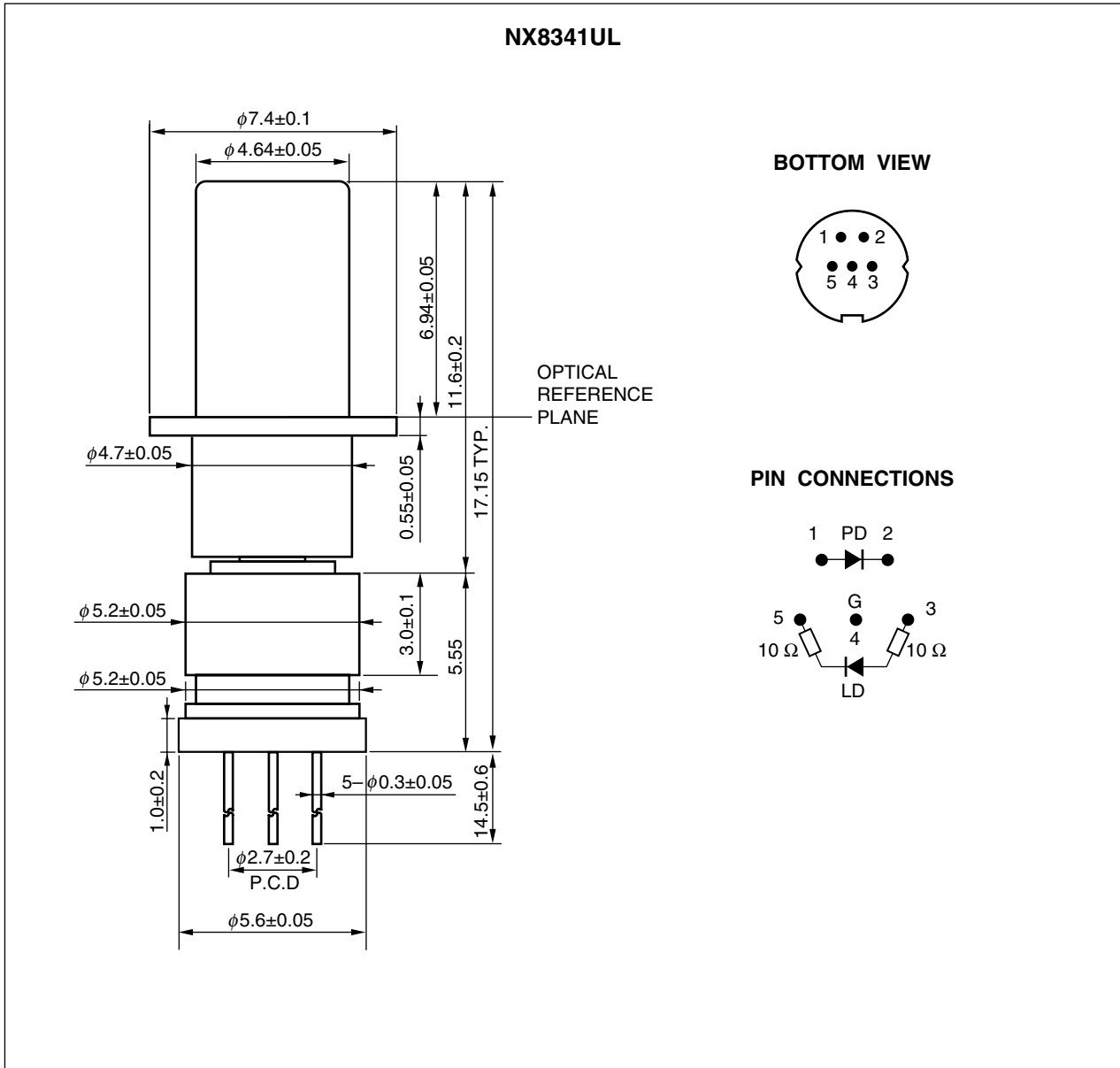
PIN CONNECTIONS



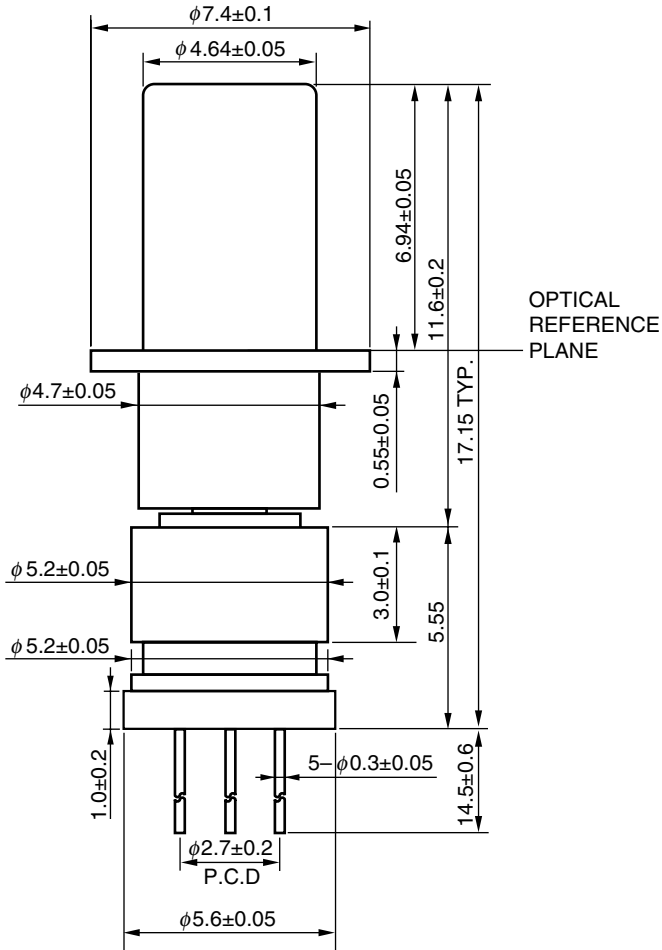
Remark Receptacle is electrically isolated from CAN.



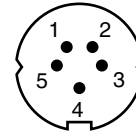




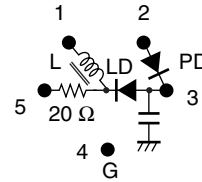
NX8341UN



BOTTOM VIEW



PIN CONNECTIONS



ORDERING INFORMATION

<R>

Part Number	Receptacle Type	Note
NX8341TB	LC, Electrically isolated	Differential input with flexible PCB
NX8341TJ	LC	Differential input with flexible PCB
NX8341TL	SC	Differential input with flexible PCB
NX8341TP	LC, Electrically isolated	Differential input with flexible PCB, without matching resistor
NX8341UB	LC, Electrically isolated	Differential input, 5-pin
NX8341UH	LC	Single-ended, 5-pin
NX8341UJ	LC	Differential input, 5-pin
NX8341UL	SC	Differential input, 5-pin
NX8341UN	SC	Single-ended, 5-pin

ABSOLUTE MAXIMUM RATINGS

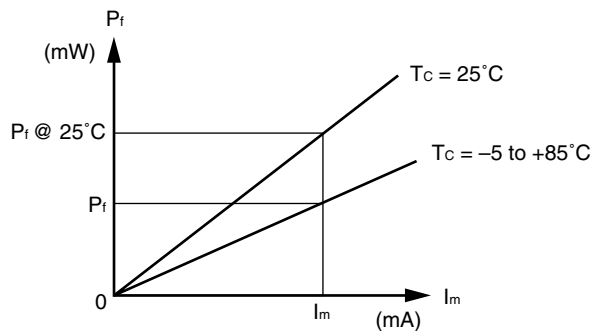
Parameter	Symbol	Ratings	Unit
Storage Temperature	T _{stg}	-40 to +85	°C
Operating Case Temperature	T _C	-5 to +85	°C
Forward Current of LD	I _{FLD}	120	mA
Reverse Voltage of LD	V _{RLD}	2	V
Forward Current of PD	I _{FPD}	10	mA
Reverse Voltage of PD	V _{RPD}	20	V
Lead Soldering Temperature	T _{slid}	350 (3.5 sec.)	°C
Optical Output Power	P _f	5	mW

ELECTRO-OPTICAL CHARACTERISTICS (Tc = -5 to +85°C, BOL, unless otherwise specified)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Mean Optical Output Power	P _r			-2		dBm
Peak Emission Wavelength	λ _p	CW, P _r = -2 dBm	1 290		1 330	nm
Side Mode Suppression Ratio	SMSR	CW, P _r = -2 dBm	30			dB
Threshold Current	I _{th}	CW, T _c = 25°C		8	20	mA
		CW	2		40	
Differential Efficiency	η _d	CW, P _r = -2 dBm, T _c = 25°C	0.02	0.025	0.04	W/A
		CW, P _r = -2 dBm	0.005		0.05	
Operation Voltage	V _{op}	CW, P _r = -2 dBm			2	V
Monitor Current	I _m	P _r = -2 dBm, V _R = 1.5 V	*1	90	700	μA
Monitor Dark Current	I _D	V _R = 1.5 V, T _c = 25°C			5	nA
		V _R = 1.5 V			50	
Rise Time	t _r	20-80%	*1	30	50	ps
Fall Time	t _f	20-80%	*1	40	50	ps
Extinction Ratio	Ex	10 GbE, 10 G FC	*1	4	5	dB
Tracking Error ²	γ			-1.0	1.0	dB
Input Impedance	Z _{in}			25		Ω
Connector Repeatability	CR	With master pigtail		-1.0	1.0	dB

*1 9.95/10.3/10.5 Gb/s, PRBS 2³¹-1, NRZ, Duty Cycle = 50%

*2 Tracking Error: γ



$$\gamma = \left| 10 \log \frac{P_r}{P_r @ 25^\circ\text{C}} \right| \text{ [dB]}$$

REFERENCE

Document Name	Document No.
Opto-Electronics Devices Pamphlet	PX10160E

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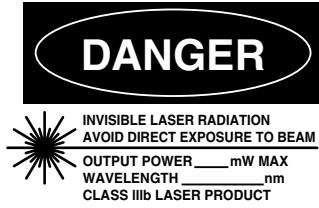
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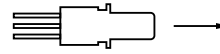
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SAFETY INFORMATION ON THIS PRODUCT



SEMICONDUCTOR LASER



AVOID EXPOSURE-Invisible
Laser Radiation is emitted from
this aperture

<p>Warning Laser Beam</p>	<p>A laser beam is emitted from this diode during operation. The laser beam, visible or invisible, directly or indirectly, may cause injury to the eye or loss of eyesight.</p> <ul style="list-style-type: none"> • Do not look directly into the laser beam. • Avoid exposure to the laser beam, any reflected or collimated beam.
<p>Caution GaAs Products</p>	<p>This product uses gallium arsenide (GaAs). GaAs vapor and powder are hazardous to human health if inhaled or ingested, so please observe the following points.</p> <ul style="list-style-type: none"> • Follow related laws and ordinances when disposing of the product. If there are no applicable laws and/or ordinances, dispose of the product as recommended below. <ol style="list-style-type: none"> 1. Commission a disposal company able to (with a license to) collect, transport and dispose of materials that contain arsenic and other such industrial waste materials. 2. Exclude the product from general industrial waste and household garbage, and ensure that the product is controlled (as industrial waste subject to special control) up until final disposal. • Do not burn, destroy, cut, crush, or chemically dissolve the product. • Do not lick the product or in any way allow it to enter the mouth.
<p>Caution Optical Fiber</p>	<p>A glass-fiber is attached on the product. Handle with care.</p> <ul style="list-style-type: none"> • When the fiber is broken or damaged, handle carefully to avoid injury from the damaged part or fragments.