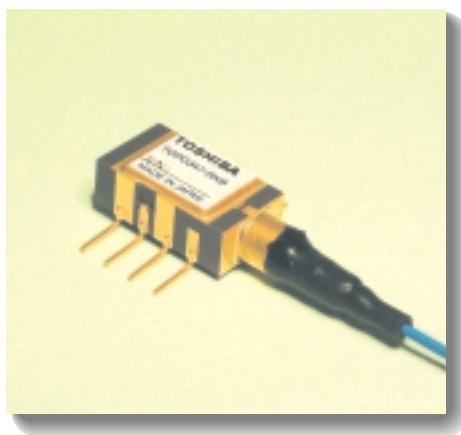


# Optical Communication Devices

## 2.5 Gb/s Optical Receiver

### TOPD347-RXB Series



#### APPLICATION

- SONET / SDH (OC-48 / STM-16) applications

#### FEATURES

- PIN-PD and TIA
- Mini-DIL package
- Differential data output
- Single power supply voltage: +3.3 V to +5 V
- Sensitivity: -23.5 dBm (Typ. @ BER =  $1 \times 10^{-10}$ )
- Overload: -3 dBm (Typ. @ BER =  $1 \times 10^{-10}$ )
- Operating case temperature range: -40 to +85 °C
- Package size: 7.4 (W) x 13.2 (D) x 4.6 (H) mm

# TOPD347-RXB Series

## ABSOLUTE MAXIMUM RATINGS (T<sub>c</sub> = 25 °C)

Item	Symbol	Rating	Unit
Storage temperature	T <sub>stg</sub>	–40 to +85	°C
Operating case temperature	T <sub>c</sub>	–40 to +85	°C
PD forward current	I <sub>f</sub>	10	mA
PD reverse current	I <sub>r</sub>	1	mA
PD reverse voltage	V <sub>pd</sub>	20	V
Positive supply voltage	V <sub>dd</sub>	0 to +6	V
Soldering temperature / time	T <sub>sol</sub> / t <sub>sol</sub>	260 / 5	°C / s

## ELECTRICAL AND OPTICAL CHARACTERISTICS (T<sub>c</sub> = –40 to +85 °C, V<sub>pd</sub> = +5 V, V<sub>dd</sub> = +3.3 V to +5 V)

Item	Min	Typ.	Max	Unit	Note
Positive supply current	—	34	—	mA	
Sensitivity	—	–23.5	–20	dBm	(1)
Overload	–5	–3	—	dBm	(1)
Dark current	—	—	50	nA	
Bandwidth (–3 dB)	1.4	1.8	—	GHz	(2)
Logic sense					(3)
Skew, DATA OUT (+) to DATA OUT (–)	–20	—	20	ps	
Optical return loss	—	—	–27	dB	(4)
Output signal amplitude	15	—	500	mV <sub>pp</sub>	(5)
Electrical return loss	10	—	—	dB	(6)
	9	—	—	dB	(7)

Notes:

(1) 2.48832 Gb/s, NRZ, PRBS 2<sup>31</sup>–1, BER = 1 × 10<sup>–10</sup>, λ = 1.55 μm

(2) –4 dBm > P<sub>f</sub> > –27 dBm

(3) DATA OUT (+), Light ON = V<sub>out</sub> Logic HIGH

DATA OUT (–), Light ON = V<sub>out</sub> Logic LOW

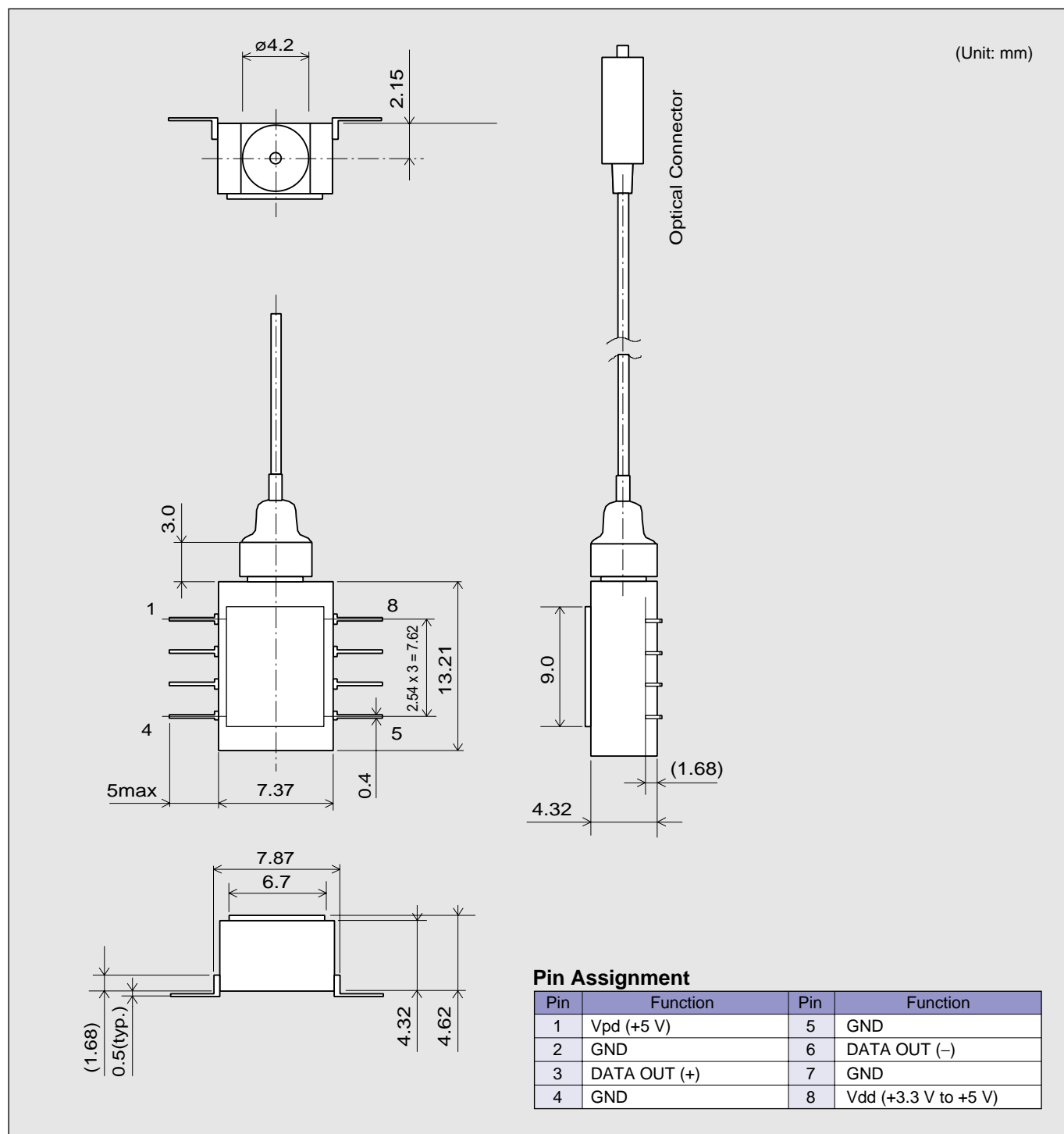
(4) λ = 1.3/1.55 μm

(5) 0 dBm > P<sub>f</sub> > –20 dBm

(6) 0.13 GHz < F < 1.75 GHz

(7) 1.75 GHz < F < 2.5 GHz

## DIMENSIONAL OUTLINE AND PIN ASSIGNMENT



## PRECAUTIONS

- Power supply: Transient electric spike may cause a damage to the photodiode or IC chips.  
A surge-free power supply and a slow starter circuit should be used.  
To avoid causing an electrical surge, pin should not be connected or disconnected on the fixture before turning the power off.
- The product should be grounded for obtaining the performance.

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