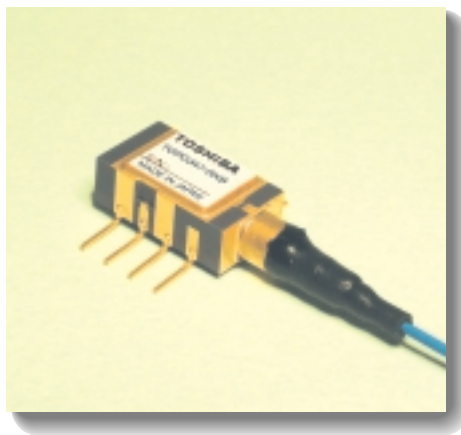


Optical Communication Devices

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 = 1×10^{-10})
- Overload: -3 dBm (Typ. @ BER = 1×10^{-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_c = 25 °C)

Item	Symbol	Rating	Unit
Storage temperature	T _{stg}	-40 to +85	°C
Operating case temperature	T _c	-40 to +85	°C
PD forward current	I _f	10	mA
PD reverse current	I _r	1	mA
PD reverse voltage	V _{pd}	20	V
Positive supply voltage	V _{dd}	0 to +6	V
Soldering temperature / time	T _{sol} / t _{sol}	260 / 5	°C / s

ELECTRICAL AND OPTICAL CHARACTERISTICS (T_c = -40 to +85 °C, V_{pd} = +5 V, V_{dd} = +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 _{pp}	(5)
Electrical return loss	10	—	—	dB	(6)
	9	—	—	dB	(7)

Notes:

(1) 2.48832 Gb/s, NRZ, PRBS 2³¹-1, BER = 1 × 10⁻¹⁰, λ = 1.55 μm

(2) -4 dBm > P_f > -27 dBm

(3) DATA OUT (+), Light ON = V_{out} Logic HIGH
DATA OUT (-), Light ON = V_{out} Logic LOW

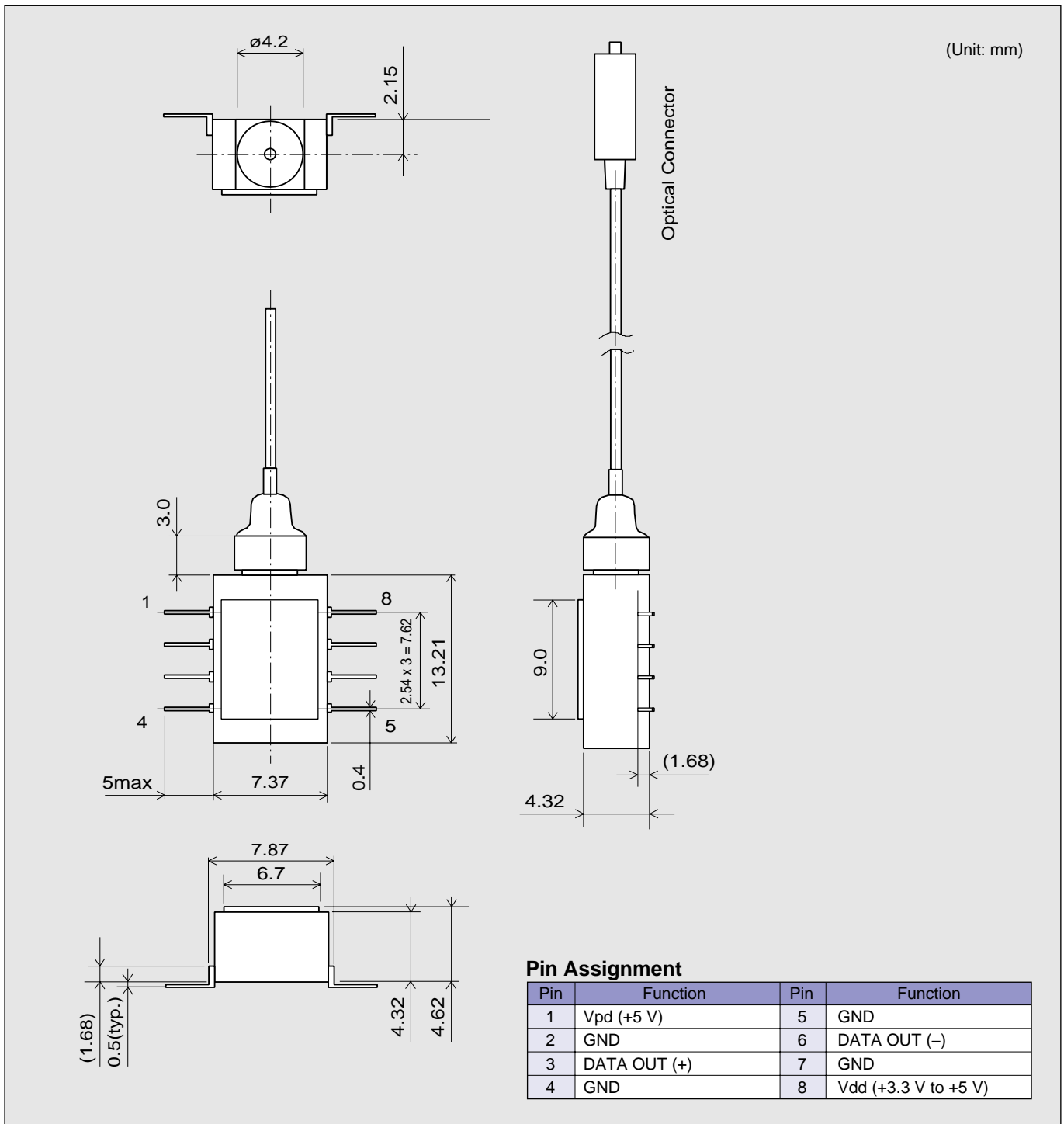
(4) λ = 1.3/1.55 μm

(5) 0 dBm > P_f > -20 dBm

(6) 0.13 GHz < F < 1.75 GHz

(7) 1.75 GHz < F < 2.5 GHz

DIMENSIONAL OUTLINE AND PIN ASSIGNMENT



PRECAUTIONS

- (a) 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.
- (b) The product should be grounded for obtaining the performance.

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