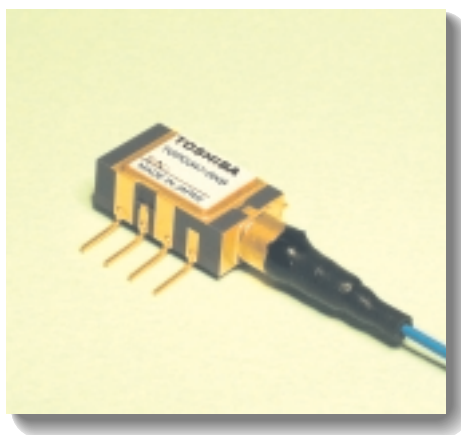


Optical Communication Devices

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

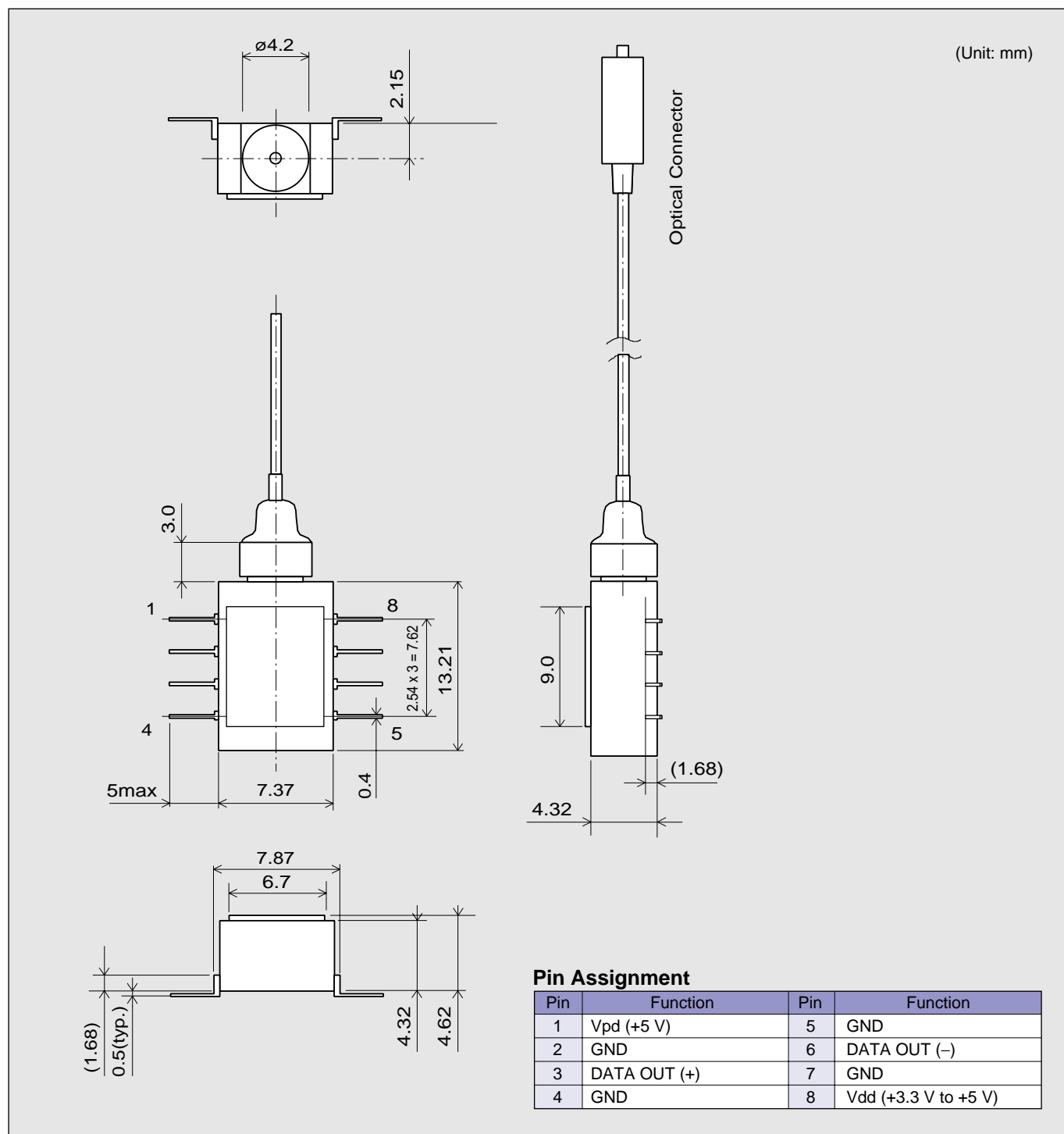
(4) λ = 1.3/1.55 μm

(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

- 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.

OVERSEAS SUBSIDIARIES AND AFFILIATES

010126(X)

Toshiba America Electronic Components, Inc.

Headquarters-Irvine, CA
9775 Toledo Way, Irvine, CA 92618, U.S.A.
Tel: (949)455-2000 Fax: (949)859-3963

Deerfield, IL(Chicago)
One Pkwy., North, Suite 500, Deerfield,
IL 60015-2547, U.S.A.
Tel: (847)945-1500 Fax: (847)945-1044

Edison, NJ
2035 Lincoln Hwy. Ste. #3000, Edison
NJ 08817, U.S.A.
Tel: (732)248-8070 Fax: (732)248-8030

Raleigh, NC
5511 Capitol Center Dr., #114,
Raleigh, NC 27606, U.S.A.
Tel: (919)859-2800 Fax: (919)859-2898

Richardson, TX(Dallas)
777 East Campbell Rd., Suite 650, Richardson,
TX 75081, U.S.A.
Tel: (972)480-0470 Fax: (972)235-4114

Wakefield, MA(Boston)
401 Edgewater Place, Suite #360, Wakefield,
MA 01880-6229, U.S.A.
Tel: (781)224-0074 Fax: (781)224-1095

Toshiba Electronics Europe GmbH

Düsseldorf Head Office
Hansaallee 181, D-40549 Düsseldorf
Germany
Tel: (0211)5296-0 Fax: (0211)5296-400

Toshiba Electronics Italiana S.R.L.
Centro Direzionale Colleoni
Palazzo Perseo Ingr. 2-Piano 6,
Via Paracelso n.12,
1-20041 Agrate Brianza Milan, Italy
Tel: (039)68701 Fax: (039)6870205

Toshiba Electronics(UK) Limited
Riverside Way, Camberley Surrey,
GU15 3YA, U.K.
Tel: (01276)69-4600 Fax: (01276)69-4800

Toshiba Electronics Scandinavia AB
Gustavslundsvägen 12, 2nd Floor
S-161 15 Bromma, Sweden
Tel: (08)704-0900 Fax: (08)80-8459

Toshiba Electronics Asia, Ltd.

Hong Kong Head Office
Level 11, Top Glory Insurance Building, Grand Century
Place, No.193, Prince Edward Road West,
Mong Kok, Kowloon, Hong Kong
Tel: 2375-6111 Fax: 2375-0969

Beijing Office
Rm 714, Beijing Fortune Building,
No.5 Dong San Huan Bei-Lu, Chao Yang District,
Beijing, 100004, China
Tel: (010)6590-8795 Fax: (010)6590-8791

Toshiba Electronics Korea Corporation

Seoul Head Office
14/F, KEC B/D, 257-7 Yangjae-Dong,
Seocho-ku, Seoul, Korea
Tel: (02)589-4334 Fax: (02)589-4302

Toshiba Technology Development (Shanghai) Co., Ltd.

23F, Shanghai Senmao International Building, 101
Yin Cheng East Road, Pudong New Area, Shanghai,
200120, China
Tel: (021)6841-0666 Fax: (021)6841-5002

Toshiba Electronics Taiwan Corporation

Taipei Head Office
17F, Union Enterprise Plaza Bldg. 109
Min Sheng East Rd., Section 3, 0446 Taipei,
Taiwan
Tel: (02)514-9988 Fax: (02)514-7892

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In Touch with Tomorrow
TOSHIBA

TOSHIBA CORPORATION

Electronic Devices Sales & Marketing Division

1-1, Shibaura 1-chome, Minato-ku, Tokyo, 105-8001, Japan
Tel: +81-3-3457-3405 Fax: +81-3-5444-9431