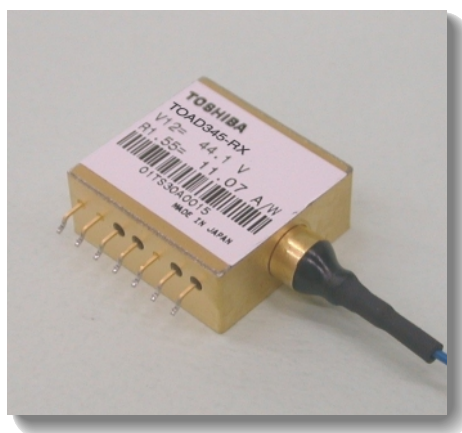


Optical Communication Devices

2.5 Gb/s Optical Receiver

TOAD345-RX/TOPD345-RX Series



APPLICATION

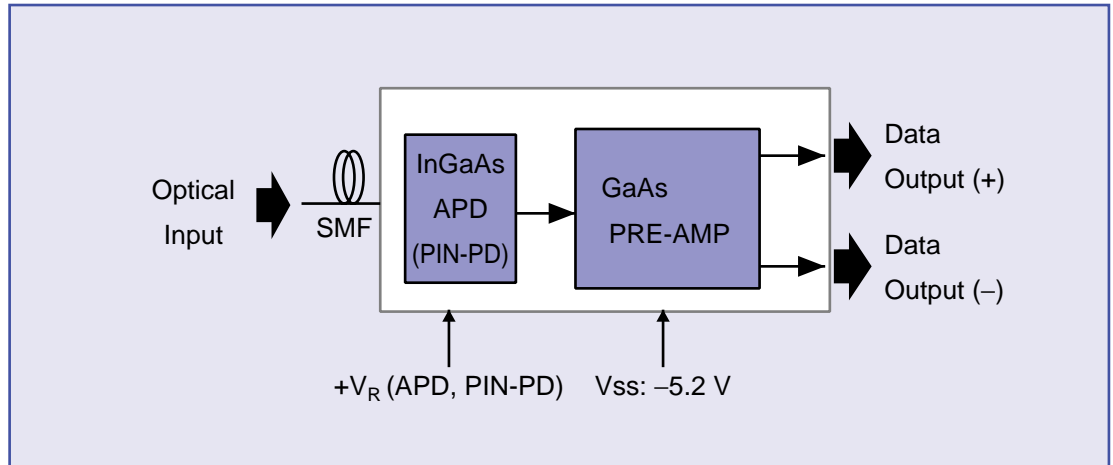
- SONET / SDH (OC-48 / STM-16) applications

FEATURES

- TOAD345-RX: APD and TIA
 - Sensitivity: -33 dBm (typ. @ BER = 1×10^{-10})
 - Overload : -3 dBm (min @ BER = 1×10^{-10})
- TOPD345-RX: PIN-PD and TIA
 - Sensitivity: -25 dBm (typ. @ BER = 1×10^{-10})
 - Overload : 0 dBm (typ. @ BER = 1×10^{-10})
- Differential outputs
- Package size: 19.2 mm (W) x 20.2 mm (D) x 8.1 mm (H)

TOAD345-RX/TOAD345-RX Series

BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Item	Symbol	Rating	Unit	Note
Storage temperature	Tstg	-40 to +85	°C	
Operating case temperature	Tc	0 to +70	°C	
Optical input power	Pr	0	dBm	(1)
		+3	dBm	(2)
Voltage supply	Vss	-6 to 0	V	
Soldering temperature / time	Tsol / tsol	260 / 5	°C / s	

Notes: (1) TOAD345-RX
(2) TOPD345-RX

ELECTRICAL AND OPTICAL CHARACTERISTICS (2.48832 Gb/s, NRZ, PRBS 2²³-1, λ = 1.55 μm, Tc = 25 °C)

TOAD345-RX

Item	Symbol	Min	Typ.	Max	Unit	Note
Supply current	Iss	-	-130	-	mA	(1)
Sensitivity	Ps	-	-33.0	-31.5	dBm	(2)
Overload	Pol	-3	-	-	dBm	(2)
Cut-off frequency	fc	1.25	1.6	3.0	GHz	
Output data voltage	Vpp	30	-	1000	mVpp	

TOPD345-RX

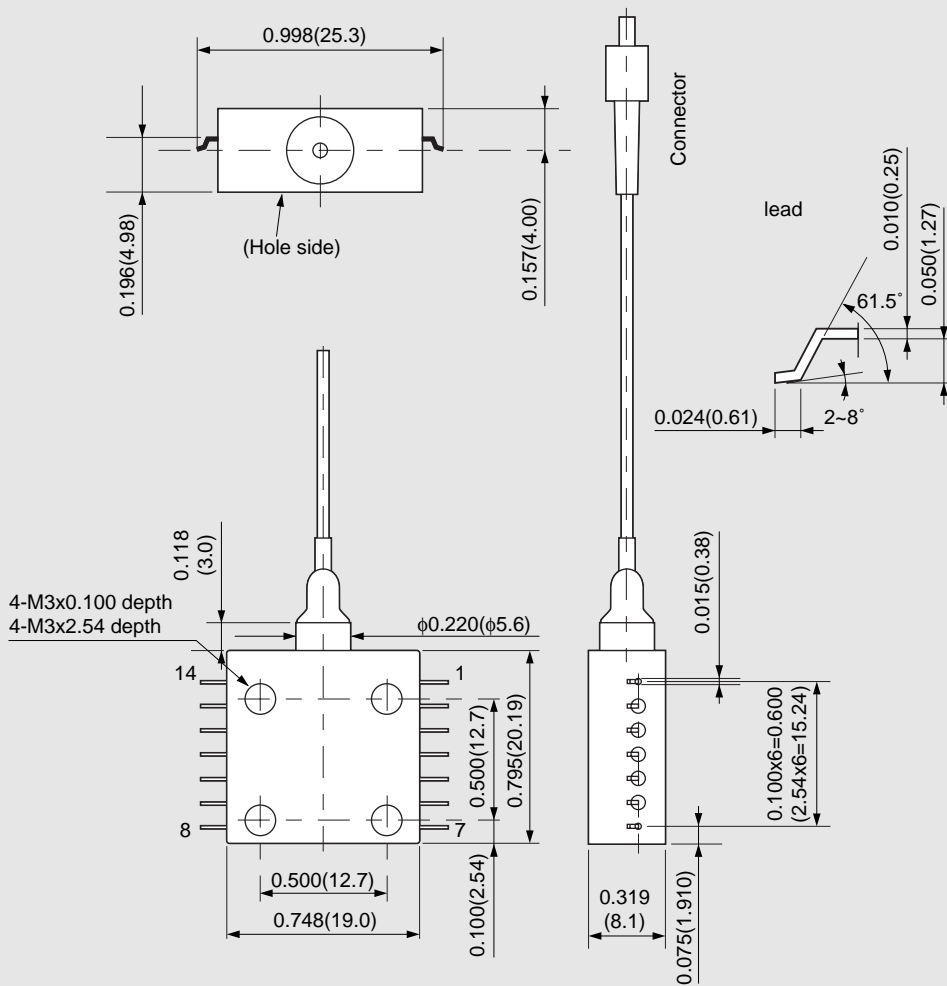
Item	Symbol	Min	Typ.	Max	Unit	Note
Supply current	Iss	-	-130	-	mA	(1)
Sensitivity	Ps	-	-25.0	-23.5	dBm	(2)
Overload	Po	-1.0	0.0	-	dBm	(2)
Cut-off frequency	fc	1.25	1.7	3.3	GHz	
Output data voltage	Vpp	30	-	1000	mVpp	

Notes: (1) Vss = -5.2 V
(2) at BER = 1 x 10⁻¹⁰

DIMENSIONAL OUTLINE AND PIN ASSIGNMENT

TOAD345-RX / TOPD345-RX Series

Unit: inch (mm)



Pin Assignment

Pin	Function	Pin	Function
1	GND	8	GND
2	V _R (APD, PD)	9	GND
3	GND	10	Data out (+)
4	V _{ss} (-5.2 V)	11	Data out (-)
5	GND	12	GND
6	Thermistor	13	NC
7	GND	14	NC

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. Before turning power supplies off, no pin should be connected or disconnected on the test fixture to avoid causing any electrical surge.
- The product should be grounded for obtaining the performance.

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