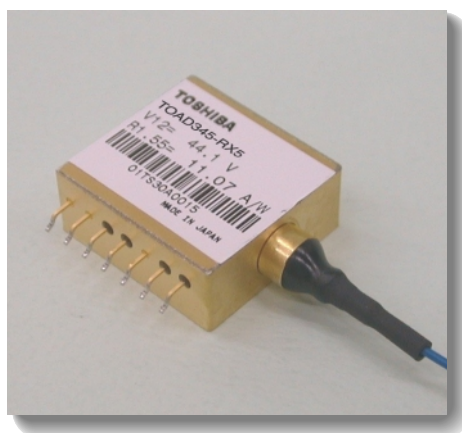


Optical Communication Devices

2.5 Gb/s Optical Receiver Module

TOAD345-RX5/TOPD345-RX5 Series



APPLICATION

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

FEATURES

- APD and TIA
- TOAD345-RX
 - Sensitivity: -33 dBm (typ. @ BER = 1×10^{-10})
 - Overload : -8 dBm (typ. @ BER = 1×10^{-10})
- TOPD345-RX5
 - Sensitivity: -25 dBm (typ. @ BER = 1×10^{-10})
 - Overload : -7 dBm (typ. @ BER = 1×10^{-10})
- High Transimpedance: 1.5 k Ω
- Package size: 19.2 (W) x 20.2 (D) x 8.1 (H) mm

TOAD345-RX5/TOPD345-RX5 Series

ABSOLUTE MAXIMUM RATINGS

Item	Symbol	Rating	Unit
Storage temperature	Tstg	-40 to +85	°C
Operating case temperature	Tc	0 to +70	°C
APD forward current (TOAD345-RX5)	If	1	mA
APD reverse current (TOAD345-RX5)	Ir	500	μA
PD forward current (TOPD345-RX5)	If	10	mA
PD reverse current (TOPD345-RX5)	Ir	1	mA
PD reverse voltage (TOPD345-RX5)	Vpdl	20	V
Positive supply voltage	Vdd	0 to +6	V
Negative supply voltage	Vss	-6 to 0	V
Soldering temperature / time	Tsol / tsol	260 / 5	°C / s

ELECTRICAL AND OPTICAL CHARACTERISTICS (Tc = 25 °C, Vdd = +5 V, Vss = -5.2 V)

TOAD345-RX5

Item	Min	Typ.	Max	Unit	Note
Positive supply current	-	100	-	mA	
Negative supply current	-	80	-	mA	
Breakdown voltage (Id = 100 μA)	-	-	85	V	
Dark current (M = 12)	-	-	100	nA	
Sensitivity	-	-33	-31.5	dBm	(1)
Overload	-10	-8	-	dBm	(1)
Bandwidth (-3 dB)	1.3	1.5	-	GHz	(2)
Logic sense	-	-	-	-	(3)
Optical return loss	27	-	-	dB	(4)
Output signal amplitude	25	-	1000	mVpp	(5)
Electrical return Loss	8	-	-	dB	(6)
Thermistor resistance	-	3	-	kΩ	

Notes (1) 2.48832 Gb/s, NRZ, PRBS 2²³-1, BER = 1 x 10⁻¹⁰, λ = 1.55 μm

(2) Pf = -30 dBm, M = 12

(3) DATA, Light ON = Data out Logic LOW

(4) λ = 1.3/1.55 μm

(5) -10 dBm > Pf > -30 dBm

(6) 0.3 GHz < F < 2.5 GHz

TOPD345-RX5

Item	Min	Typ.	Max	Unit	Note
Positive supply current	-	100	-	mA	
Negative supply current	-	80	-	mA	
Sensitivity	-	-25	-	dBm	(1)
Overload	-	-7	-	dBm	(1)
Bandwidth (-3 dB)	1.4	1.8	-	GHz	(2)
Logic sense	-	-	-	-	(3)
Optical return loss	27	-	-	dB	(4)
Output signal amplitude	20	-	1000	mVpp	(5)
Electrical return Loss	10	-	-	dB	(6)
	9	-	-	dB	(7)
Thermistor resistance	-	3	-	kΩ	

Notes (1) 2.48832 Gb/s, NRZ, PRBS 2²³-1, BER = 1 x 10⁻¹⁰, λ = 1.55 μm

(2) -3 dBm > Pf > -20 dBm

(3) DATA, Light ON = Data out Logic LOW

(4) λ = 1.3/1.55 μm

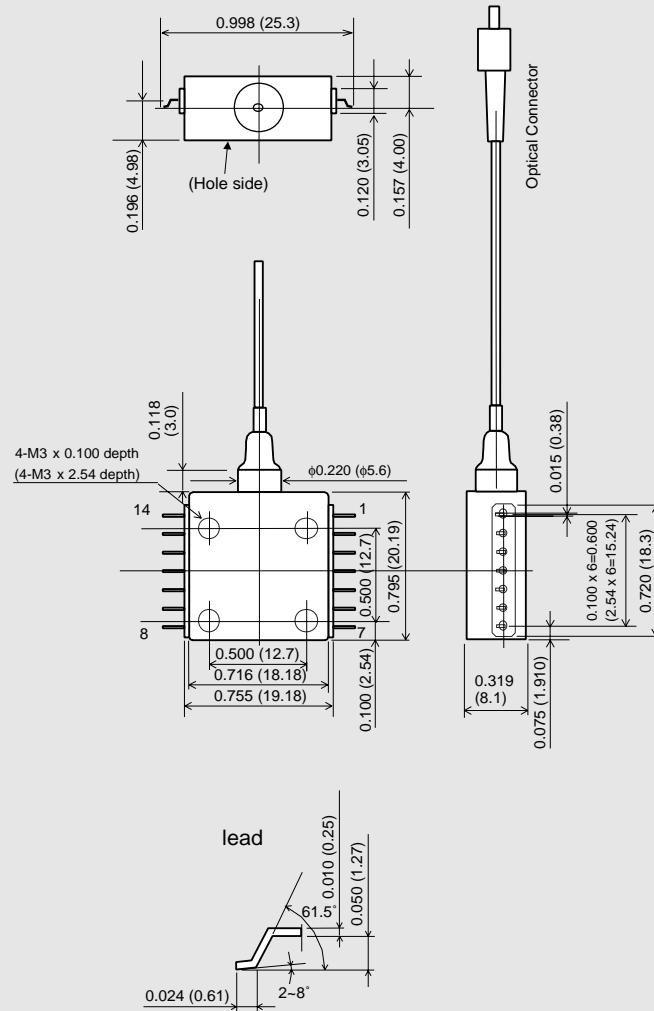
(5) -4 dBm > Pf > -20 dBm

(6) 0.13 GHz < F < 1.75 GHz

(7) 1.75 GHz < F < 2.5 GHz

DIMENSIONAL OUTLINE AND PIN ASSIGNMENT

Unit: inch (mm)



Pin Assignment for TOAD345-RX5

Pin	Function	Pin	Function
1	GND	8	GND
2	Vapd	9	GND
3	GND	10	DATA OUT
4	Vss (-5.2 V)	11	NC
5	GND	12	GND
6	Thermistor	13	Vdd (+5.0 V)
7	GND	14	NC

Pin Assignment for TOPD345-RX5

Pin	Function	Pin	Function
1	GND	8	GND
2	Vpd	9	GND
3	GND	10	DATA OUT
4	Vss (-5.2 V)	11	GND
5	GND	12	GND
6	Thermistor	13	Vdd (+5.0 V)
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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In Touch with Tomorrow
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