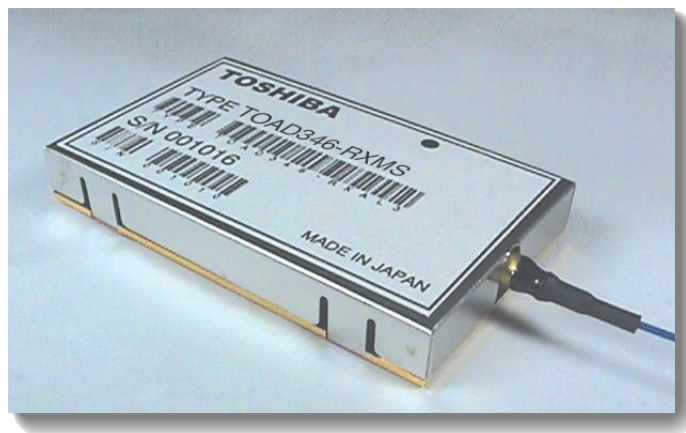


Optical Communication Devices 2.5 Gb/s Optical Receiver Module

TOAD346-RXMS/TOPD346-RXMS Series



APPLICATION

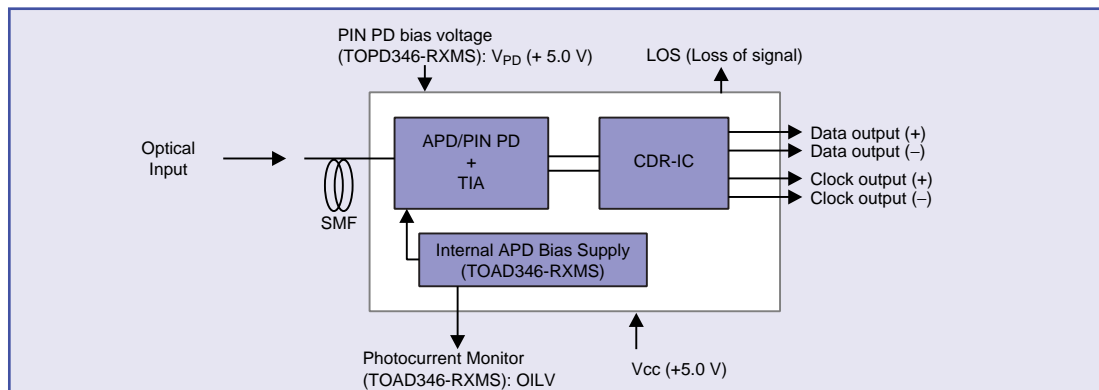
- SONET / SDH (OC-48 / STM-16) applications

FEATURES

- TOAD346-RXMS: APD, TIA and CDR
Sensitivity: -32 dBm (typ. @ BER = 1×10^{-10} , PRBS $2^{23}-1$)
Internal APD bias power supply
- TOPD346-RXMS: PIN-PD, TIA and CDR
Sensitivity: -24 dBm (typ. @ BER = 1×10^{-10} , PRBS $2^{23}-1$)
- Tc: -40 to $+85$ °C
- Loss of signal (LOS) output
- SC/PC Optical connector available
- Multi Source Agreement (MSA) compliant
- Package size: 35 x 58 x 8.9 (max) mm

TOAD346-RXMS/TOPD346-RXMS Series

BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Item	Symbol	Rating	Unit	
Storage temperature	Tstg	-40 to +85	°C	
Operating case temperature	Tc	-40 to +85	°C	
Positive supply voltage	Vcc	0 to +5.5	V	
Maximum optical input power	TOAD346-RXMS	Pom	0	dBm
	TOPD346-RXMS	Pom	+3.0	dBm
Soldering temperature / time	Tsol / tsol	260 / 10	°C / s	

ELECTRICAL AND OPTICAL CHARACTERISTICS (Case temperature: Tc = -40 to +85°C)

Electrical characteristics

Item	Min	Typ.	Max	Unit	Note
Bit rate	2488.07	2488.32	2488.57	Mb / s	
Positive power supply voltage	4.75	5.00	5.25	V	
Positive power supply current	—	300	380	mA	
Total power dissipation	—	1.5	2	W	
Data / Clock single output voltage	300	—	1000	mVp-p	
Jitter generation (rms)	—	—	10	mUI	
Jitter transfer	ITU G958 and Telcordia GR-253-CORE compliant				
Jitter tolerance	ITU G958 and Telcordia GR-253-CORE compliant				
Loss of signal (LOS) alarm output voltage (normal)	0.0	—	0.4	V	
Loss of signal (LOS) alarm output voltage (alarm active)	2.4	—	Vcc	V	
Loss assert time	—	—	1	ms	
Loss de-assert time	—	—	1	ms	
Setup / Hold time	100	—	—	ps	Fig. 1

Notes

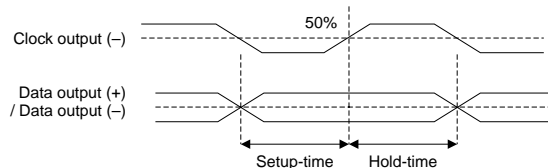


Fig. 1: Setup-Hold time

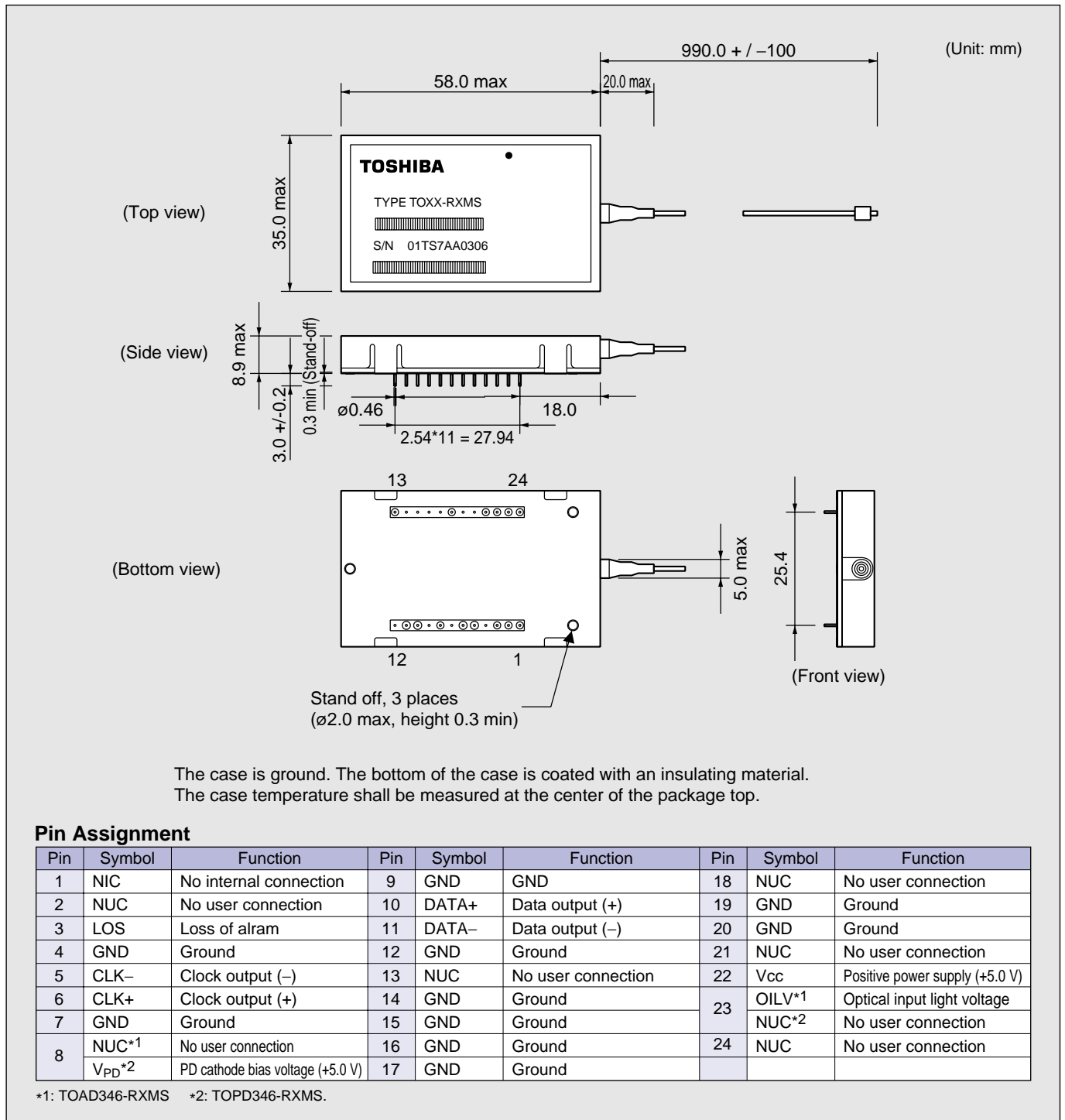
Optical characteristics

Item	Min	Typ.	Max	Unit	Note
Input wave length	1260	—	1620	nm	
Sensitivity (WL = 1550 nm, TOAD346-RXMS)	—	-32.0	-30.0	dBm	(1), (2)
Sensitivity (WL = 1300 nm, TOPD346-RXMS)	—	-24.0	-22.0	dBm	(1)
Overload (TOAD346-RXMS)	-7	—	—	dBm	(1)
Overload (TOPD346-RXMS)	-2	—	—	dBm	(1)
LOS alarm for decreasing light input (TOAD346-RXMS)	-45	—	-35	dBm	
LOS alarm for decreasing light input (TOPD346-RXMS)	-38	—	-27	dBm	
Optical return loss	27	—	—	dB	

Notes: (1) Bit rate = 2488.32 Mb/s, PRBS 2²³-1, measured at BER 10⁻¹⁰

(2) -31 dBm (max @Tc = -10 to +70 °C) available

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, pins should not be connected or disconnected on the test fixture before turning the power off.
- The product should be grounded for obtaining the performance.

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