



# DWDM Supervisory Channel Receiver Module

## ***RXMM946-004***

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### Features

- *Bit Rate 2.048Mb/s (NRZ) Receiver*
- *With high sensitivity and wide dynamic range*
- *With 3R function and Indication of input optical power*
- *With LOS alarming function*
- *DIP 24 pin metal package, single mode SC/PC connector*
- *+5V single power supply*
- *TTL signal output*

### Application

- *DWDM supervisory channel*

## Absolute Maximum Ratings

Parameter	Symbol	Unit	Min	Max
Storage Temperature Range	$T_s$	°C	-40	+85
Relative Humidity	RH	%	5	85
Power Supply Voltage	$V_{cc}$	V	0	+6
Lead Solder Temperature	-	°C	-	260
Lead Solder Duration	-	S	-	10
Fiber Yield Strength	-	kgf	-	1
Fiber Bend Radius	-	mm	30	-

## Recommended Operating Conditions

Parameter	Symbol	Unit	Min	Typ	Max
Ambient Operating Temperature Range	$T_c$	°C	0	-	+70
Power Supply Voltage	VCC	V	+4.75	+5.0	+5.25

## Specifications ( $T=25^{\circ}\text{C}$ , BOL , unless otherwise noted)

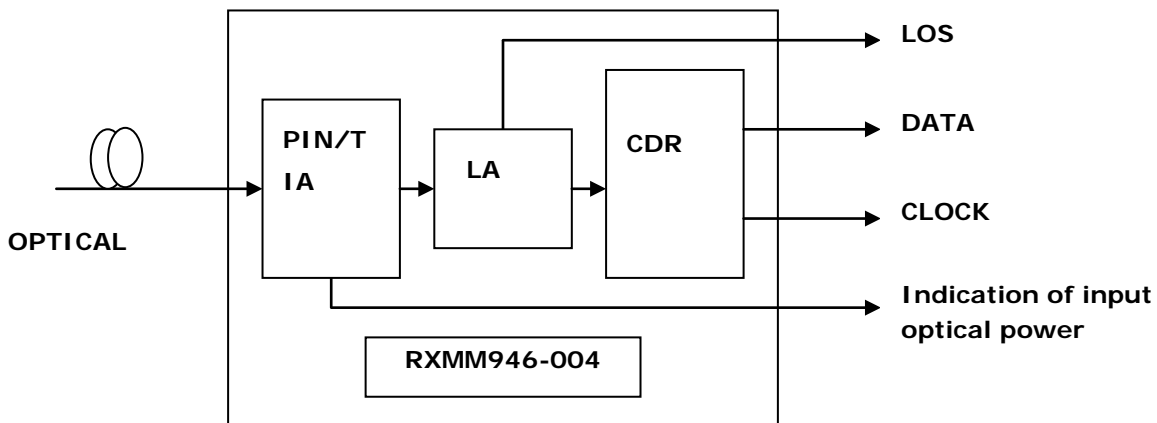
Parameter	Symbol	Unit	Min	Typ	Max	Test condition
<b>Electrical Characteristics</b>						
Operating Voltage	$V_{op}$	V	+4.75	+5.0	+5.25	
Supply Current	$I_{cc}$	mA	-	-	200	
Signal Level (TTL)	High	-	V	2.5	-	-
	Low	-	V	-	-	0.5
<b>Optical receive Characteristics</b>						
Data Rate	-	Mbps	2.048	2.048	2.048	
Receiver Sensitivity	S	dBm	-	-	-48	1
Overload Input Optical Power	$P_{in}$	dBm	-3	-	-	1
LOS alarm Output level	LOS	-	TTL high			
LOS Hysteresis	-	dB	-	2	-	

**Note 1:** the test condition is 2.048Mb/s, 1510nm,  $2^{23}-1$  PRBS, BER= $1 \times 10^{-10}$

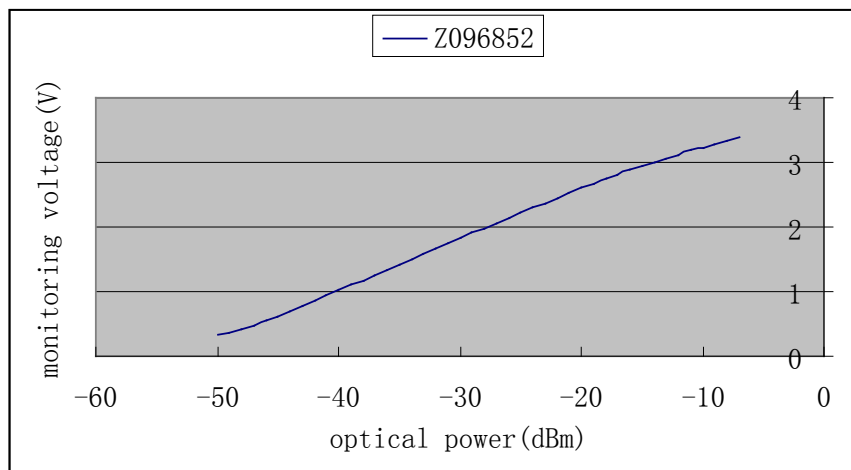
## Pin Description

Pin	RXMM946-004	Pin	RXMM946-004
1	NC	13	NC
2	NC	14	Ground
3	LOS	15	Ground
4	Ground	16	Ground
5	NC	17	Ground
6	Clock	18	Ground
7	Ground	19	Ground
8	+5V Power	20	Ground
9	Ground	21	NC
10	Data	22	+5V Power
11	NC	23	Indication of input optical power
12	Ground	24	NC

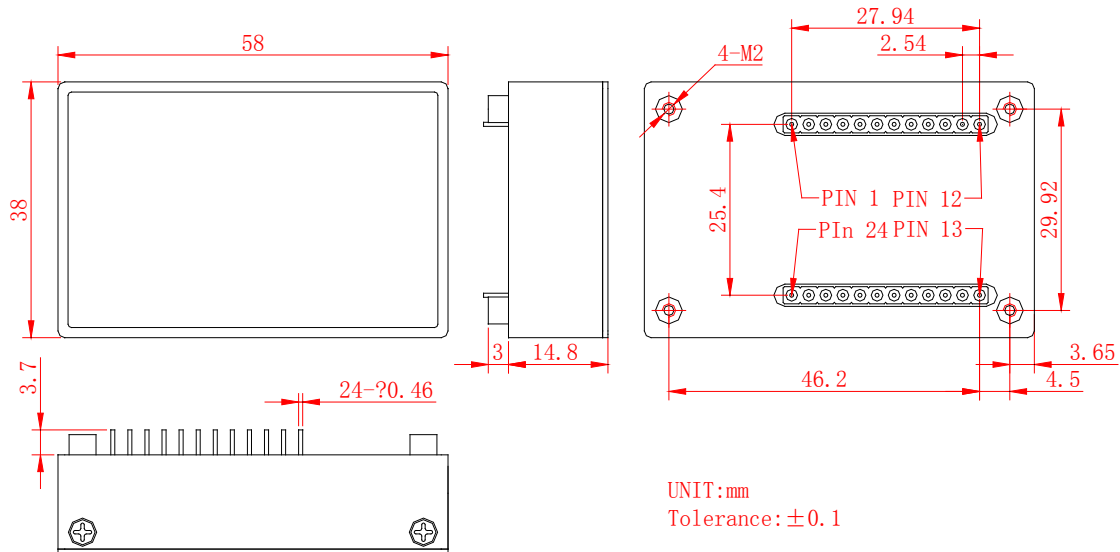
## Block diagram



**Notes:** The method for monitoring optical power uses logarithmic amplifier. The slope is 80mV each 1dB step, shown as the graph:



## Package Outline (unit:mm)



## Qualification tests

Test		Condition	Reference standard
Performance Characteristics	External Visual	Visual	MIL-SLD-883-2009
	Internal Visual	Visual	MIL-SLD-883-2014
	Electrical/Optical Performance	Over supply voltage range, temperature range, and other test condition	specification
	Absolute Maximum Ratings	Maximum rated voltage, maximum rated temperature	specification
Mechanical Integrity	Mechanical Shock	1500g,0.5ms,5times/axis	MIL-SLD-883-2002
	Vibration	20g,20-2000Hz,4min/cycles,4cycles/axis	MIL-SLD-883-2007
Endurance	High Temperature with Bias	70 °C,5kh(initial Extrapolation after 2kh	Bellcore TR-NWT-000468
	Temperature Cycle	-20 °C ~ +85 °C,100x pass/fail,500x for information	Bellcore TR-NWT-000468
	Damp heat	45 °C,95%RH,rated bias,56days	Bellcore TR-NWT-000468
	Low-temperature Storage	-20 °C,2000hrs	Bellcore TR-NWT-000983
Special Test	Power Cycling	30min.On/off,1500x	MIL-STD-1006

## Ordering information

Part No	Specification					Application
	Package	Datarate	Detector	Sensitivity	Ta	
RXMM946-004	DIP 24Pin	2.048Mbps	PIN	-48dBm (Max)	0~70°C	DWDM Supervisory Channel

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