



## 5V DIP 2.5Gbps APD Receiver Module with Multi Rate CDR

### ***RXMM959***

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#### **Features**

- *Multi Rate Clock and Data Recovery*
- *STM-16/Gigabit Ethernet/STM-4/STM-1*
- *APD Type Optical Receiver*
- *Sensitivity better than -22.5/-31.5dBm*
- *Differential data and clock outputs*
- *Analog Optical Input Level Monitor Output*
- *TTL Loss of Optical Power Alarm*
- *+5V Single Power Supply*
- *24 pin DIP Metal Package*

#### **Application**

- *SDH / DWDM Transmission System RXOTU*
- *High-Speed Data Communications*

## Standards

- 2.5G MSA
- ITU-T G.825 & G957

## Absolute Maximum Ratings

Parameter	Symbol	Unit	Min	Max
Storage Temperature Range	Ts	°C	-20	85
Relative Humidity	RH	%	-	85
Power Supply Voltage	Vcc	-	0	+6.0
Lead solder temperature	-	°C	-	260
Lead solder duration	-	S	-	10
Fiber yield strength	-	Kgf	-	1
Fiber bend radius	-	Mm	10	-

## Recommended Operating Conditions

Parameter	Symbol	Unit	Min	Typ	Max
Case Operating Temperature Range	Tc	°C	0	-	70
Power Supply Voltage	Vcc	-	0	-	+6.0
Relative Humidity	RH	%	-	-	85

## Specifications (tested under recommended operating conditions ,unless otherwise noted)

Parameter	Symbol	Unit	Min	Typ	Max	Test condition	
Electrical Characteristics							
Operating Voltage	Vop	V	+4.75	+5	+5.25		
Supply current	Icc	mA	-	300	400		
CML Output	Data	-	mV	700	800	1000	Differential Output Voltage Swing
	Clock	-	mV	600	700	1000	
	Impedance	-	Ω	-	100	-	Internal AC Coupled load impedance 50Ω
	Data-Clock difference	phase	-	ps	-75	-	
Los	TTL (Active High)						
Rate Select	LVTTTL(Active High)						
Optical receive Characteristics							
Receiver Wavelength	-	nm	1200	-	1600		
Receiver Sensitivity	2.488G	S	dBm	-	-32	-31	BER=1×10 <sup>-12</sup>
	1.250G			-	-33	-	PRBS=223-1

	622M		-	-34	-	
	155M		-	-33	-	
Overload	input optical Power		dBm	-8	-	-
LOS(TTL)			dBm	-	-38	-
Jitter Performance						
	2.488G		-	0.104	-	5K-20MHZ
			-	0.056	-	1M-20MHZ
Jitter Generation	622M		-	0.056	-	1K-5MHZ
			-	0.019	-	250K-5MHZ
	155M		-	0.049	-	500HZ-1.3MHZ
			-	0.028	-	65KHZ-1.3MHZ
Jitter Transfer Function	Compliant with ITU-T G..825					
Jitter Tolerance						

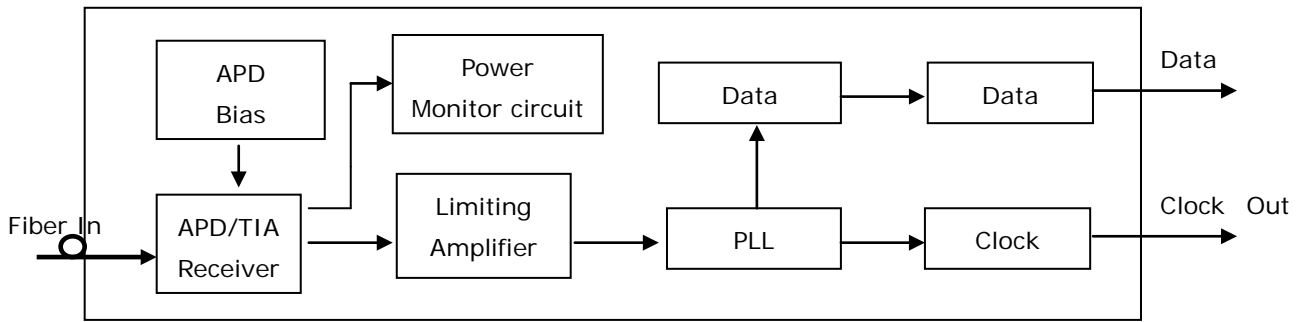
## Pin Description

Pin	Name	Description	Pin	Name	Description
1	SEL1	Rate Select	24	NC	No Connection
2	SEL2	Rate Select	23	OIL	Optical Power Monitor
3	LOS	LOS	22	VCC	Positive Power Supply
4	GND	Ground	21	NC	No Connection
5	CKO	Negative Clock Output	20	GND	Ground
6	CKO	Positive Clock Output	19	GND	Ground
7	GND	Ground	18	NC	No Connection
8	VCC	Positive Power Supply	17	GND	Ground
9	GND	Ground	16	GND	Ground
10	DO	Positive Data Output	15	GND	Ground
11	DO	Negative Data Output	14	GND	Ground
12	GND	Ground	13	NC	No Connection

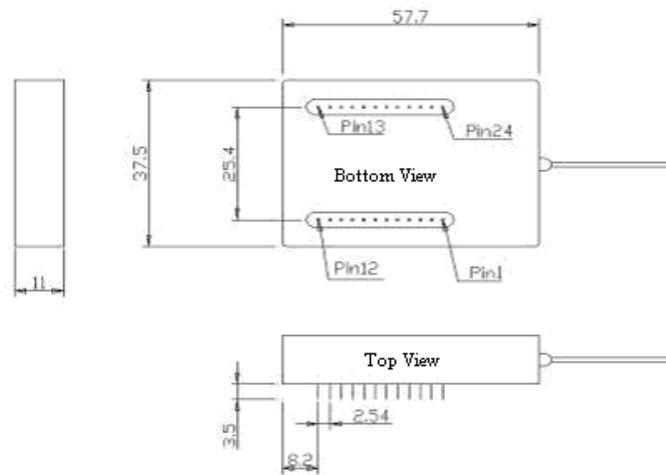
## Data Rate Select (LVTTTL:Active High)

SEL1	SEL2	Operating Rate
0	0	2.488Gb/s
1	0	1.250Gb/s
0	1	622Mb/s
1	1	155Mb/s

## Block Diagram



## Package Outline



## Ordering Information

Part No	Specification					Application	Others
	Package	Datarate	Detector	Sensitivity	Temp Reach		
RTXM959	24pin	2.5G	APD	-31dBm (max)	0~70°C	-	SDH/SONET
	DIP	multi-rate					
RTXM959-N	24pin	2.5G	APD	-31dBm (max)	0~70°C	-	SDH/SONET
	DIP	multi-rate					

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