GPON ONU Optical Transceiver SFF Module

RTXM167-410

Features

RTXM167-410

- Integrated Single fiber bi-directional optical subassembly
- 1310nm DFB laser Burst-mode Transmitter and 1490nm APD Continuous receiver(with WDM)
- SFF 2×10 metallic package
- 1000mm pigtail with SC/UPC connector
- +3.3V single power supply
- Low power consumption
- 0 to 70°C operating case temperature
- LVPECL compatible data input
- CML compatible data output
- LVTTL transmitter burst mode control
- Burst Enable:H-active
- LVTTL receiver signal-detected indication
- Class 1 Laser eye safety
- Excellent EMI and EMC characteristics
- DDM Function implemented
- Compliant with RoHs&WEEE

Applications

- Optical transceiver for Gigabit-capable Passive Optical Networks (GPON) ONU side

Standard

- ITU-T G.984.2ClassB+； FSAN G.984.5
- Small Form Factor Transceiver Multisource Agreement July 5,2000
- Compliant with SFF-8472 v9.5

Description

The GPON ONU Transceiver is designed for Gigabit-capable Passive Optical Network（GPON）transmission. The module incorporates 1310nm burst-mode transmitter and 1490nm continuous-mode receiver.

The transmitter section uses a 1310nm DFB laser and an integrated BM laser driver which designed to perform very small burst enable/disable delay time. The laser driver also includes digital APC and temperature compensation circuit, which are used for keeping the launch optical power and extinction ratio constant over temperature and aging.

The receiver section uses an integrated 1490nm APD photodiode and preamplifier mounted together. It has the function that indicates receiver signal-detected status (active high).

An integrated WDM coupler can separate 1490nm input light and 1310nm output light.

The metallic package guarantees excellent EMI and EMC characteristics, which totally comply with international relevant standards.

Absolute Maximum Ratings

Parameter	Symbol	Unit	Min	Max
Operating Case Temperature Range	T_c	°C	0	70
Storage Temperature Range	T_s	°C	-40	85
Relative Humidity	RH	%	5	95
Power Supply Voltage	V_{cc}	V	0	4.6
Pin Input Voltage		V	GND	Vcc
Receiver Damage Threshold		dBm	+4	–
Lead Solder Temperature		°C	–	260
Lead Solder Duration		S	–	10
Fiber Yield Strength		kgf	–	0.5
Fiber Bend Radius		mm	30	–

Recommended operating conditions

Parameter	Symbol	Unit	Min	Typ	Max
Operating Voltage	V_{cc}	V	3.13	3.3	3.47
Operating CaseTemperature Range	T_c	℃	0	–	70

Specifications ($0°C<T_c<70°C$ and $3.13V<V_{cc}<3.47V$)

Parameter	Symbol	Unit	Min	Typ	Max	Notes
Electrical Characteristics						
Supply Current	I_{cc}	mA	–	–	300	
LVPECL Single Ended Data Input Swing		mV	100	–	800	1
CML Single Ended Data Output Swing		mV	400	–	600	2
Differential Data input impedance		Ω	–	100	–	1
Signal Level(LVTTL H)		V	2.4	–	Vcc	
Signal Level(LVTTL L)		V	0	–	0.8	
Optical transmitter Characteristics						
Data Rate		Mbps	–	1244.16	–	
Center Wavelength Range	λ_c	nm	1290	–	1330	
Spectral Width(@-20dB)	$\Delta\lambda$	nm	–	–	1	
Side Mode Suppression Ratio		dB	30			
Launch Optical Power	P_o	dBm	0.5	–	+5	3
Off level light		dBm	–	–	-45	

Update Information

Ordering Information

Part No	Specification									Application Code
	Package	Datarate	Laser	Optical Power	Detector	Sensitivity	Temp	Reach	BM control logic	
RTXM167-410	SFF 2×10	1.25Gb/s US 2.5Gb/s DS	1310nm DFB	0.5 ~ 5dBm	APD	-28dBm	0~70°C	20km	H Enable	CLASSB+

Note1: SC/UPC type of connector.

Note2: The length of pigtail is normal 1000±30mm(the length of connector is included) ,but can be customed for specific requirement.

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