



产品描述

- 该产品发射端集成了两种波长为 1490nm、工作速率 2.5Gb/s 的和波长为 15770nm、工作速率 10Gb/s 的高速 DFB 激光二极管，1490nm DFB LD TO 为光电二极管，1577nm DFB LD TO 有光电二极管、TEC 芯片和 EML 芯片组成。QOSA 有两个独立 APD 或 PIN-TIA 匹配两个 LD 构成四个波长通道的光器件。

- 发端采用 DFB 激光器，收端采用 PIN-TIA/APD-TIA 二极管

- 芯片信息:

- LD: 1490nm 2.5G/s DFB 和 1577nm 10G/s DFB

PT: APD-TIA 和 10G APD-TIA

- 产品结构备注: SC/PC 插芯套组件, 机加工/粉末件结构, 接收端耦合结构, 带隔离器

产品应用

- XGPON
- XGSPON
- GPON or 10G EPON
- EPON Hybrid APPLICATION

2.5Gb/s 10Gb/s、DFB Hybrid Quad Optical

产品特点

- 采用激光焊接方案
- 1490nm 和 1577nm 的铟镓砷 DFB 激光二极管传输
- SC 连接器
- 独立光学通道/高光学隔离
- 工作温度: $-10^{\circ}\text{C} \sim 75^{\circ}\text{C}$
- 10 和 2.5 千兆混合以太网, 10G 和 2.5 G 光纤混合通道
- 插拔式 SC BOSA

产品标准

- 符合 Telcordia GR - 468 可靠性测试标准
- 符合 RoHS 6 项 标准
- 符合 ROHS(对有害物质的限制)标准
- 符合 GR - 326 连接器合格标准

1. Absolute Maximum Ratings

Item	Symbol	Unit	Min	Max	Note
Storage Temperature	T_{STG}	°C	-40	+100	
Operating Temperature (ambient)	T_{OPR}	°C	-10	+75	
Forward Current (LD)	I_{FLD}	mA	---	2	
Reverse Voltage (LD)	V_{RLD}	V	---	2	
Forward Current (PD)	I_{FPD}	mA	---	2	
Reverse Voltage (PD,1490nm)	V_{RPD}	V	---	20	
Reverse voltage(PD,1577nm)	V_r	V		10	
APD Break Down Voltage	V_{br}	V	33	55	
TEC Voltage	V_{tec}	V		0.9	
TEC Current	I_{tec}	A		0.6	

2. Transmitter Electro-Optical Characteristics ($T_C=25^\circ\text{C}$, CW)

Item	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Laser threshold current for GPON	I_{TH}	$T_C=25^\circ\text{C}$ CW	---	--	12	mA
		$T_C=-40\sim+85^\circ\text{C}$, CW	---	--	48	
Laser threshold current for XGPON	I_{TH}	$T_C=-10^\circ\text{C}$ to 85°C , CW			30	mA
Operating voltage for GPON	V_F	CW, $I_{op}=I_{th}+20\text{mA}$	---	---	1.5	V
Operating voltage for XGPON	V_F	I_{op} , Top	---	---	2	V
Laser average output optical power for GPON	P_f	$T_C=25^\circ\text{C}$, CW, $I_{op}=I_{th}+20\text{mA}$	2.5	---	---	mW
		$T_C=-10\sim85^\circ\text{C}$, CW, $I_{op}=I_{th}+20\text{mA}$	1.8	---	---	mW
Laser average output optical power for XGPON	P_f	$T_C=45^\circ\text{C}$, CW, $I_{op}=100\text{mA}@EA=0\text{v}$	4.5	---	---	mW
Center Wavelength for GPON	λ_C	CW, $I_{op}=I_{th}+20\text{mA}$, $T_C=25^\circ\text{C}$	1480	1490	1500	nm
Center Wavelength for XGPON	λ_C	CW, Top	1575	1577	1580	nm
Monitor Current	I_M	CW, $T_C=-10\sim85^\circ\text{C}$	100	---	1000	uA
Optical Return Loss tolerance for GPON	O_{RLT}	$\lambda=1490\text{nm}$	---	---	-10	dB

Optical Return Loss tolerance for XGPON	O_{RLT}	$\lambda = 1577\text{nm}$	---	---	-10	dB
The Tracking Error	$\Delta P_f/P_f$	$T_c = -10^\circ\text{C to } 85^\circ\text{C, CW, APC}$ $TE = 10\log(P_f(T_c)/P_f(25^\circ\text{C}))$	-1.5	---	+1.5	dB

3. Receiver Electro-Optical Characteristics (TC=25°C, Vcc=3.3V)

Item	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Supply Current	I_{CC}	依据 TO 选型, 范围会不一样	---	--	---	mA
APD Breakdown Voltage for GPON	V_{br}	$I_d = 10\mu\text{A}$, TIA on, $T_c = -10^\circ\text{C to } 85^\circ\text{C}$	20	--	55	V
APD Breakdown Voltage for XGPON	V_{br}	$I_d = 10\mu\text{A}$, TIA on, $T_c = -10^\circ\text{C to } 85^\circ\text{C}$	20	--	60	V
Operation Wavelength for GPON	λ	$T_c = -10^\circ\text{C to } 85^\circ\text{C}$	1290	--	1330	nm
Operation Wavelength for XGPON	λ	$T_c = -10^\circ\text{C to } 85^\circ\text{C}$	1260	--	1280	nm
Saturation Power for GPON	PSAT	$T_c = -10^\circ\text{C to } 85^\circ\text{C AC}$, $RL = 50\Omega$, NRZ, 1.25Gbps, PRBS=2 ³¹ -1 Extinction ratio: 10dB	-6	--	---	dBm
Saturation Power for XGPON	PSAT	$T_c = -10^\circ\text{C to } 85^\circ\text{C AC}$, $RL = 50\Omega$, NRZ, 1.25Gbps, PRBS=2 ³¹ -1 Extinction ratio: 10dB	-7	--	---	dBm
Sensitivity for GPON	Sen	$T_c = -10^\circ\text{C to } 85^\circ\text{C AC}$, $RL = 50\Omega$, NRZ, 1.25Gbps, PRBS=2 ³¹ -1 Extinction ratio: 10dB BER=10 ⁻¹⁰ , $\lambda = 1290\sim 1330\text{nm}$	-32	--	--	dBm
Sensitivity for XGPON	Sen	$T_c = -10^\circ\text{C to } 85^\circ\text{C AC}$, $RL = 50\Omega$, NRZ, 2.5Gbps, PRBS=2 ³¹ -1 Extinction ratio:8.2dB BER=10 ⁻⁴ , $\lambda = 1260\sim 1280\text{nm}$	-30	--	--	dBm

Optical Return Loss for GPON	ORL	$\lambda = 1310\text{nm}$	--	---	-20	dB
Optical Return Loss for XGPON	ORL	$\lambda = 1270\text{nm}$	--	---	-20	dB
Optical Crosstalk for GPON	X_{TALK}	1490nm Internal TX/1310nm RX	--	---	-45	dB
Optical Crosstalk for XGPON	X_{TALK}	1577nm Internal TX/1270nm RX	--	---	-45	dB