



Product Specification

10Gbps XFP DWDM C-BAND 50/100GHz

PLXFP10GDMB16-xx

PLXFP10GDMB24-xx

V20140819

Product Features

- I 9.95Gbps to 11.1Gbps data links
- I 40km to 80km with 9/125μm SMF *1
- I C-BAND DWDM EML laser *1
- I Duplex LC Connector
- I Hot-pluggable XFP footprint
- I Single 3.3V power supply
- I Operating temperature: -5°C to 75°C
- I RoHS
- I Digital Diagnostic Monitor (DDM)
- I Power Consumption : 1.5W~2.5W *1

Applications

- √ 10GBase-DWDM 10GE
- √ SONET OC-192
- √ SDH STM S-64
- √ 10G Fiber Channel

*1 Notice

Part No.	Laser	Power Budget	Power Consumption
PLXFP10GDMB16-xx	EML/PIN	16dB	1.5W
PLXFP10GDMB24-xx	EML/APD	24dB	2.5W

1. Product Description

The PLXFP10GDMB16-xx/ PLXFP10GDMB24-xx is a 10Gbps enhanced small form



factor pluggable XFP transceiver compatible with 10GBASE, SONET OC-192, SDH STM S-64 . It is suitable for Single-mode fiber (SMF) communications in 10Gbps Ethernet/FC/SDH/SONET.

PLXFP10GDMB16-xx/ PLXFP10GDMB24-xx
XX: DWDM C-BAND Channel number
* Please refer to the list in next page

Channel #	TINOUT Part Number	Frequency (THz)	Center Wave (nm)
21	PLXFP10GDM40-21	192.1	1560.61
22	PLXFP10GDM40-22	192.2	1559.79
23	PLXFP10GDM40-23	192.3	1558.98
24	PLXFP10GDM40-24	192.4	1558.17
25	PLXFP10GDM40-25	192.5	1557.36
26	PLXFP10GDM40-26	192.6	1556.55
27	PLXFP10GDM40-27	192.7	1555.75
28	PLXFP10GDM40-28	192.8	1554.94
29	PLXFP10GDM40-29	192.9	1554.13
30	PLXFP10GDM40-30	193.0	1553.33
31	PLXFP10GDM40-31	193.1	1552.52
32	PLXFP10GDM40-32	193.2	1551.72
33	PLXFP10GDM40-33	193.3	1550.92
34	PLXFP10GDM40-34	193.4	1550.12
35	PLXFP10GDM40-35	193.5	1549.32
36	PLXFP10GDM40-36	193.6	1548.51
37	PLXFP10GDM40-37	193.7	1547.72
38	PLXFP10GDM40-38	193.8	1546.92
39	PLXFP10GDM40-39	193.9	1546.12
40	PLXFP10GDM40-40	194.0	1545.32
41	PLXFP10GDM40-41	194.1	1544.53
42	PLXFP10GDM40-42	194.2	1543.73
43	PLXFP10GDM40-43	194.3	1542.94
44	PLXFP10GDM40-44	194.4	1542.14
45	PLXFP10GDM40-45	194.5	1541.35
46	PLXFP10GDM40-46	194.6	1540.56
47	PLXFP10GDM40-47	194.7	1539.77
48	PLXFP10GDM40-48	194.8	1538.98
49	PLXFP10GDM40-49	194.9	1538.19
50	PLXFP10GDM40-50	195.0	1537.40
51	PLXFP10GDM40-51	195.1	1536.61
52	PLXFP10GDM40-52	195.2	1535.82



53	PLXFP10GDM40-53	195.3	1535.04
54	PLXFP10GDM40-54	195.4	1534.25
55	PLXFP10GDM40-55	195.5	1533.47
56	PLXFP10GDM40-56	195.6	1532.68
57	PLXFP10GDM40-57	195.7	1531.90
58	PLXFP10GDM40-58	195.8	1531.12
59	PLXFP10GDM40-59	195.9	1530.33

2. Regulatory Compliance

TINOUT transceivers are Class 1 Laser Products comply with FDA regulations. Meet Class 1 eye safety requirements of EN 60825 and the electrical safety requirements of EN 60950.

3. Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit
Supply Voltage	V _{CC}	-0.5	4	V
Storage Temperature	T _s	-40	85	°C
Operating Case Temperature	T _c	-5	75	°C

4. Recommended Operating Conditions

Parameter	Symbol	Min.	Typical	Max.	Unit
Operating Case Temperature	T _c	-5		75	°C
Power Supply Voltage	V _{CC}	3.15	3.3	3.45	V
Power Supply Current	I _{CC3}			600	mA
Data Rate			10		GBps
Max Link Length on 9/125µm SMF	L _{max}	Ref *1 Notice			



5. Optical Characteristics

Parameter	Symbol	Min.	Typical	Max.	Unit
Transmitter					
Centre Wavelength *1	λ_c	X-100	X	X+100	pm
Centre Wavelength Spacing			0.8		nm
Spectral Width (RMS)	σ			0.3	nm
Average Output Power PLXFP10GDMB16-xx	P _{out}	-2		5	dBm
Average Output Power PLXFP10GDMB24-xx	P _{out}	0		5	dBm
Extinction Ratio PLXFP10GDMB16-xx	ER	8			dB
Extinction Ratio PLXFP10GDMB24-xx	ER	9			dB
Average Launch Power of Off Transmitter	P _{off}			-30	dBm
Receiver					
Centre Wavelength	λ_c	1270		1600	nm
Receiver Sensitivity PLXFP10GDMB16-xx	P _{IN}			-16	dBm
Receiver Sensitivity PLXFP10GDMB24-xx	P _{IN}			-24	dBm
Receiver Overload PLXFP10GDMB16-xx	P _{max}	5			dBm
Receiver Overload PLXFP10GDMB24-xx	P _{max}	-7			dBm
LOS De-Assert	LOS _D			-28	dBm
LOS Assert	LOS _A	-33			dBm
LOS Hysteresis		0.5			dB

*1. X= Center Wavelength. Wavelength stability is achieved within 60 seconds of power up

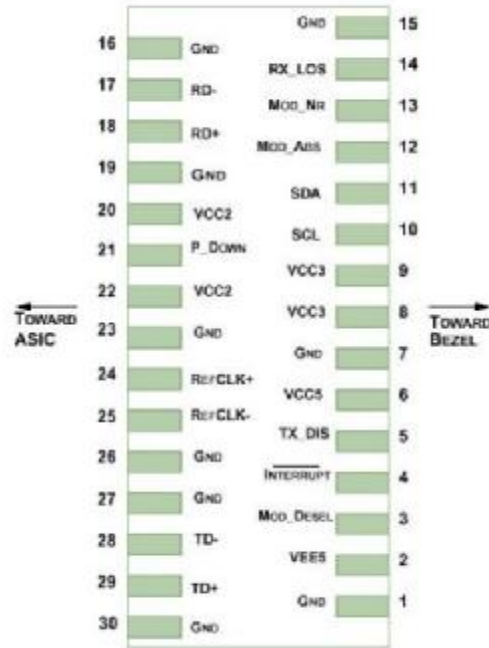
6. Electrical Characteristics

Parameter	Symbol	Min.	Typical	Max.	Unit
Transmitter					
Input Differential Impedance	Z _{in}	90	100	110	Ω
Data Input Swing Differential	V _{in}	200		700	mV
Tx-Dis Disable	V _d	2.0		V _{cc}	V
Tx-Dis Enable	V _{en}	0		0.8	V
Receiver					



Data Output Swing Differential	Vout	300		800	mV
Rx-Los Fault	Vlf	-0.5		VccHOST	V
Rx-Los Normal	Vln	0		0+0.8	V
Output rise and fall time	Tr, Tf			38	ps

7. Pin Descriptions



Pin	Symbol	Description	Ref.
1	GND	Module Ground	
2	VEE5	Optional Power Supply	
3	Mod-Desel		
4	Interrupt		
5	Tx-Dis	Transmitter Disable	
6	VCC5	+5V Power Supply	
7	GND	Module Ground	
8	VCC3	+3.3V Power Supply	
9	VCC3	+3.3V Power Supply	
10	SCL	Serial 2wire interface clock	
11	SDA	Serial 2wire interface data line	
12	Mod-Abs	Module Absent	
13	Mod-NR	Module Not Ready	



14	Rx-Los	Receiver Loss of Signal indicator	
15	GND	Module Ground	
16	GND	Module Ground	
17	RD-	Receiver Inverted data output	
18	RD+	Receiver non-Inverted data output	
19	GND	Module Ground	
20	VCC2	+1.8V Power Supply	
21	P-Down/RST		
22	VCC2	+1.8V Power Supply	
23	GND	Module Ground	
24	Ref CLK+		
25	Ref CLK-		
26	GND	Module Ground	
27	GND	Module Ground	
28	TD-	Transmitter Inverted data input	
29	TD+	Transmitter non-Inverted data input	
30	GND	Module Ground	

8. EEPROM & DDM THRESHOLD

8.1 EEPROM

TABLE (00h)

Reserved for diagnostics functions

TABLE (01h) EEPROM Serial ID Memory Contents

Add.	Size (Bytes)	Name of Field	Hex	Description
BASE ID FIELDS				
128	1	Identifier	06	XFP
129	1	Ext. Identifier	50	TX Ref Clock Input Not Required; Power Consumption Max 2.5W
130	1	Connector	07	LC
131-138	8	Transceiver	22 00 00 00 00 20 00 00	Transmitter Code
139	1	Encoding	F0	64B/66B, 8B/10B, SONET, NRZ
140	1	BR, Min	63	9.9Gbps
141	1	BR, Min	6F	11.1Gbps
142	1	Length (9um) km	28	40km



143	1	Length (E-50um) m	00	
144	1	Length (50um) m	00	
145	1	Length (62.5um) m	00	
146	1	Length (Copper)	00	
147	1	Device Tech	74	cooled 1550nm EML
148-163	16	Vendor Name	43 2D 4C 49 47 48 54 20 20 20 20 20 20 20 20 20	TINOUT * OEM available
164	1	CDR Support	F8	9.9~11.1Gbps
165-167	3	Vendor OUI	00 00 00	* OEM available
168-183	16	Vendor PN	xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx	* OEM available
184-185	2	Vendor Rev	30 31	01
186-187	2	Wavelength	xxxx	DWDM C-BAND
188-189	2	Wavelength Tolerance	00 14	0.1nm
190	1	Max Case Temp	4B	75°C
191	1	CC-BASE		
EXTENDED ID FIELDS				
192-195	4	Power Supply	64	Max Power Consumption 2W
			78	Max Power Consumption in Power Down Mode is 1.2W
			04	Max Current by 3.3V is 400mA
			00	
196-211	16	Vendor SN	43 4C xx xx xx xx xx xx xx xx xx 20 20 20 20 20	SN of Transceiver (ASCII). Exp. "PLXXXXXXXXXX"
212-219	8	Date Code	xx xx xx xx xx xx 20 20	YY/MM/DD Exp. 120727
220	1	Diagnostic Monitoring	08	Average Power
221	1	Enhanced Options	40	Optional Soft TX_DISABLE implemented;
222	1	Aux Monitoring	00	
223	1	CC_EXT	checksum	Checksum for Extended ID
VENDOR SPECIFIC ID FIELDS				
224-255	32	Vendor Specific	FF FF FF.....	Depends on Customer Info



8.1 DDM THRESHOLD

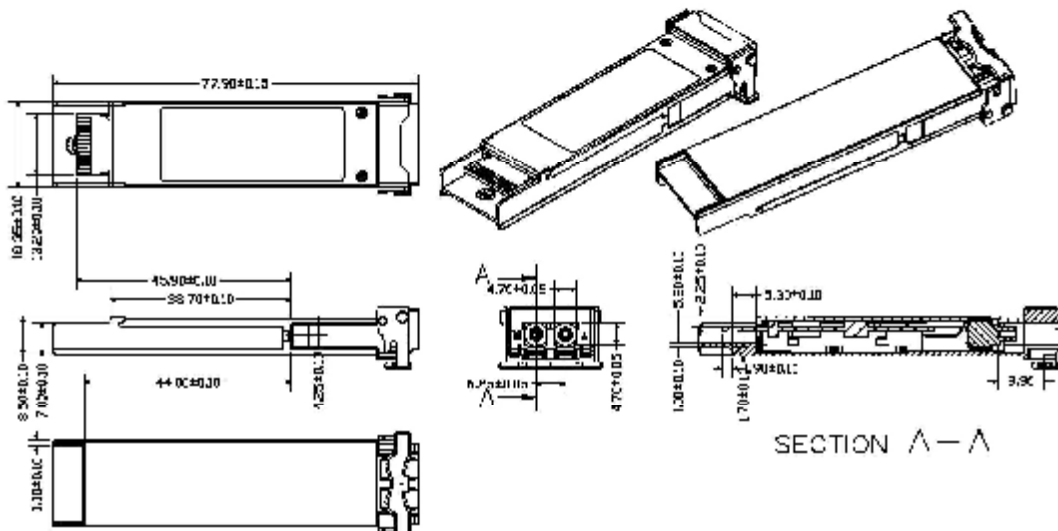
PLXFP10GDMB16-xx

	Low Alarm	Low Warn	High Warn	High Alarm
Temperature	-5°C	0°C	70°C	75°C
Voltage	2.9V	3V	3.6V	3.7V
Tx Bias	15mA	20mA	90mA	100mA
Tx Power	-3dBm	-2dBm	5dBm	7dBm
Rx Power	-18dBm	-16dBm	5dBm	7dBm

PLXFP10GDMB24-xx

	Low Alarm	Low Warn	High Warn	High Alarm
Temperature	-5°C	0°C	70°C	75°C
Voltage	2.9V	3V	3.6V	3.7V
Tx Bias	15mA	20mA	90mA	100mA
Tx Power	-3dBm	-2dBm	5dBm	7dBm
Rx Power	-26dBm	-24dBm	-7dBm	-6dBm

9. Mechanical Specifications





10. LABEL

TINOUT offers label OEM design and print.
 Label barcode supports code128 and 2D barcode
 SIZE: 38mm*15mm



Ordering Information

Part No.	Data Rate	DDM	Wave	Fiber Type	Power Budget	Temp.	Optical Interface
PLXFP10GDMB16-xx	9.95Gbps ~11.1Gbps	yes	XX*	SMF	16dB	-5~75°C	LC
PLXFP10GDMB24-xx	9.95Gbps ~11.1Gbps	yes	XX*	SMF	24dB	-5~75°C	LC

* Please refer to the channel list in Page2

VERSION UPDATE:

VERSION NO.	DATE	UPDATED INFORMATION
V20140819	20140819	New Published

NOTICE:

TINOUT reserves the right to make changes to this product in this specification without notice, in order to improve product performance.

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