Product Specification

1.25Gbps BiDi LC 40KM SFP Transceiver

AT SFPGEBD151340D-L

ATSFPGEBD151340D- LI

- Up to 1.25Gbps data linkS
- 40Km with 9/125µm SMF *1
- 1550nm /1310nm DFB laser *1
- Simplex LC Connector
- Hot-pluggable SFP footprint
- Single 3. 3V power supply
- Operating temperature: Refer to
- RoHS *1

Applications

√ 1.25Gbps 1000Base-EX / √ 1G/2G Fiber Channel

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PART NUMBER	TX/RX	DISTANCE	LASER	TEMPERATURE
ATSFPGEBD151340D-L	1550/1310nm	40Km	DFB/PIN	COM 0~70℃
ATSFPGEBD151340D-LI	1550/1310nm	40Km	DFB/PIN	IND -40~85℃

1. Product Description

The AT-SFPGEBD151340D-L series SFPs are small form factor pluggable (SFP) transceivers compatible with multi-sourcing agreement (MSA). It is suitable for single-mode fiber (SMF) communications in 1.25Gbps Ethernet and 1G/2G Fiber Channel.

2. Regulatory Compliance

ANDA TELECOM transceivers are AT ass 1 Laser Products comply with FDA regulations. Meet AT ass 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	3.6	V
Storage Temperature		T_S	-40	85	℃
ATSFPGEBD151340D-L	Operating Case Temperature	T_C	0	70	℃
ATSFPGEBD151340D-LI	Operating Case Temperature	T_C	-40	85	℃

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4. Recommended Operating Conditions

Parameter		Symbol	Min.	Typical	Max.	Unit
ATSFPGEBD15 1340D-L	Operating Case Temperature	TC	0		70	°C
ATSFPGEBD15 1340D-LI		TC	-40		85	°C
Power Supply Voltage		Vcc	3.15	3.3	3.45	V
Power Supply Current		Icc			300	mA
Data Rate				1.25		GBps
Max Link Length on 9/125μm SMF		Lmax			40	km

5. Optical Characteristics

Parameter	Symbol	Min.	Typical	Max.	Unit
Transmitter					
Centre Wavelength	λc	1540	1550	1560	nm
Spectral Width (-20dB)	σ			1	nm
Average Output Power	Pout	-5		0	dBm
Extinction Ratio	ER	9			dB
Optical Rise/Fall Time	tr/tf			2	ns
Receiver					
Centre Wavelength	λc	1300	1310	1320	nm

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Receiver Sensitivity	P_{IN}			-19	dBm
Receiver Overload	P_{MAX}	1			dBm
LOS De-Assert	LOS_D			-30	dBm
LOS Assert	LOS_A	-35			dBm
LOS Hysteresis		0.5		4.5	dB

6. Electrical Characteristics

Parameter	Symbol	Min.	Typical	Max.	Unit
Transmitter					
Input Differential Impedance	Zin	90	100	110	Ω
Data Input Swing Differential	Vin	500		2400	mV
Tx-Dis Disable	Vd	2.0		Vcc	V
Tx-Dis Enable	Ven	0		0.8	V
TX-Fault (Fault)		2.0		Vcc+0.3	V
TX-Fault (Normal)		0		0.8	V
Receiver					
Data Output Swing Differential	Vout	370		2000	mV
Rx-Los Fault	Vlf	2.0		Vcc+0.3	V
Rx-Los Normal	Vln	0		0+0.8	V

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7. Pin Descriptions

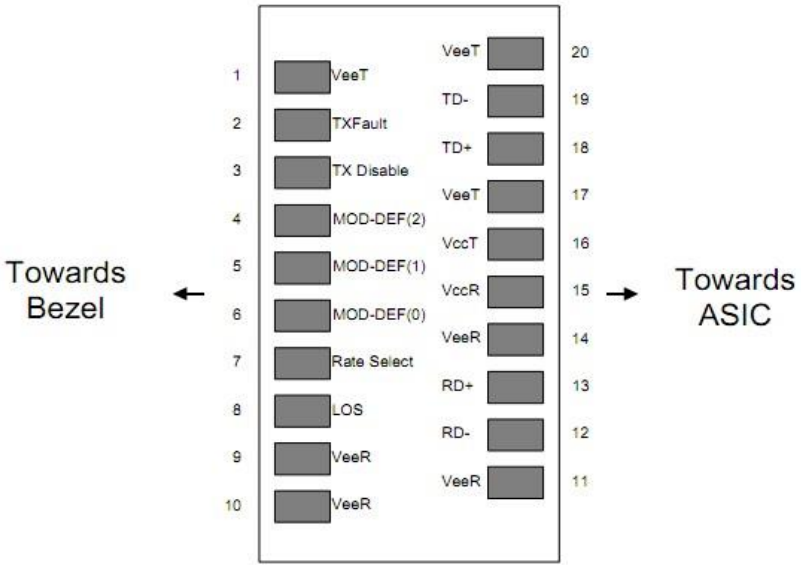

Diagram of Host Board Connector Block Pin Numbers and Names

Pin	Symbol	Description	Ref.
1	VEET	Transmitter Ground (Common with Receiver Ground)	6.1
2	TFAULT	Transmitter Fault. Not supported.	
3	TDIS	Transmitter Disable. Laser output disabled on high or open.	6.2
4	MOD_DEF(2)	Module Definition 2. Data line for Serial ID.	6.3
5	MOD_DEF(1)	Module Definition 1. ATock line for Serial ID.	6.3
6	MOD_DEF(0)	Module Definition 0. Grounded within the module.	6.3
7	Rate Select	No connection required	
8	LOS	Loss of Signal indication. Logic 0 indicates normal operation.	6.4
9	VEER	Receiver Ground (Common with Transmitter Ground)	6.1
10	VEER	Receiver Ground (Common with Transmitter Ground)	6.1

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11	VEER	Receiver Ground (Common with Transmitter Ground)	6.1
12	RD-	Receiver Inverted DATA out. AC Coupled.	
13	RD+	Receiver Non-inverted DATA out. AC Coupled.	
14	VEER	Receiver Ground (Common with Transmitter Ground)	6.1
15	VCCR	Receiver Power Supply	
16	VCCT	Transmitter Power Supply	
17	VEET	Transmitter Ground (Common with Receiver Ground)	6.1
18	TD+	Transmitter Non-Inverted DATA in. AC Coupled.	
19	TD-	Transmitter Inverted DATA in. AC Coupled.	
20	VEET	Transmitter Ground (Common with Receiver Ground)	6.1

Notes:

6.1 Circuit ground is internally isolated from chassis ground.

6.2 Laser output disabled on TDIS >2.0V or open, enabled on TDIS <0.8V.

6.3 Should be pulled up with 4.7k - 10kohms on host board to a voltage between 2.0V and 3.6V. MOD_DEF(0) pulls line low to indicate module is plugged in.

6.4 LOS is open collector output. Should be pulled up with 4.7k -10kohms on host board to a voltage between 2.0V and 3.6V. Logic 0 indicates normal operation; logic 1 indicates loss of signal.

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8. EEPROM & DDM THRESHOLD

8.1 EEPROM

2 wire address 1010000X (A0hex)

0~95 Serial ID Defined by SFP MSA (96 bytes)
96~127 Vendor Speific (32 bytes)
128~255 Reserved (128 bytes)

8.2 DDM THRESHOLD

ATSFPGEBD151340D-L/I

		Low Alarm	Low Warn	High Warn	High Alarm
Temp	**ATSFPGEBD151340D-LI**	-45℃	-40℃	85℃	90℃
Temp	**ATSFPGEBD151340D-L**	-5℃	0℃	70℃	75℃
Voltage		3V	3.1V	3.6V	3.7V
Tx Bias **ATSFPGEBD151340D-L**		3mA	4mA	70mA	75mA
Tx Bias **ATSFPGEBD151340D-LI**		3mA	4mA	125mA	130mA
Tx Power		-8dBm	-7dBm	1dBm	2dBm
Rx Power		-23dBm	-22dBm	1dBm	2dBm

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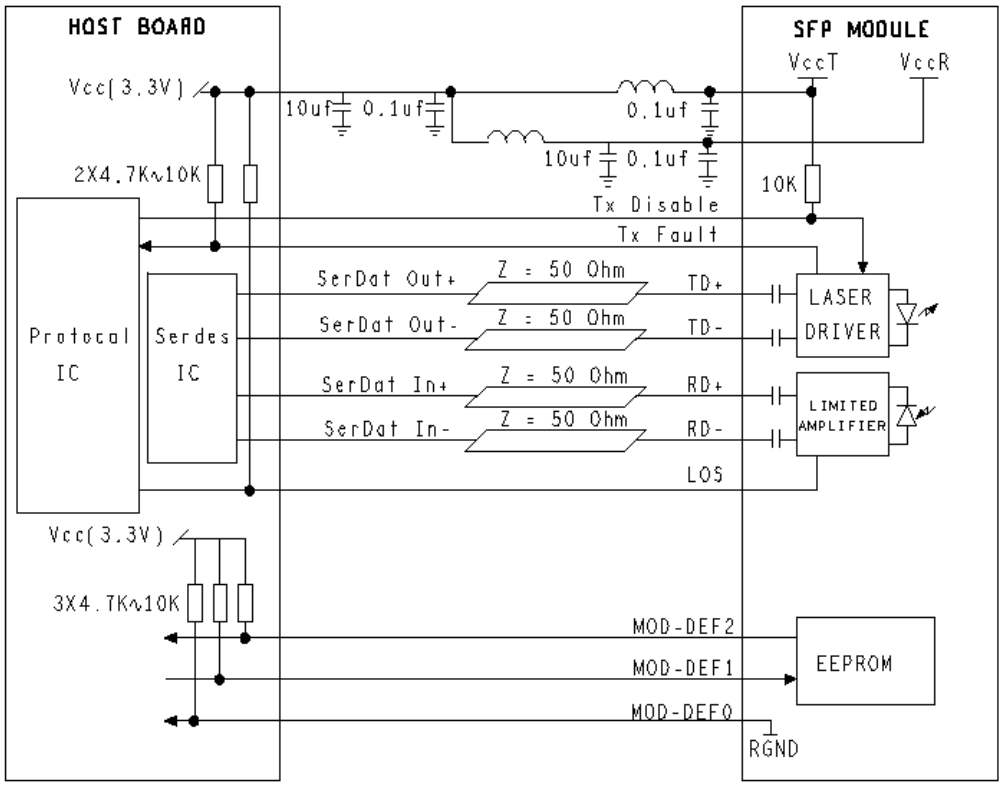
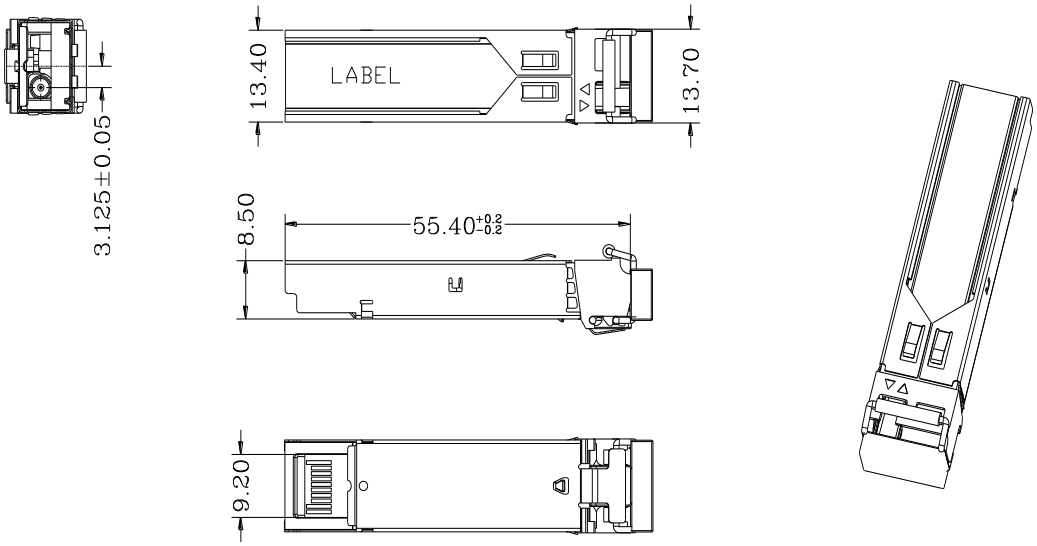
9. Recommend Circuit



10. Mechanical Specifications



Units in mm
Tolerance without indication is ±0.1mm

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11. LABEL

ANDA TELECOM offers label OEM design and print.

Label barcode supports code128 and 2D barcode

SIZE: 30mm * 9mm

Ordering Information

Part No.	Data Rate	DDM	TX/RX	Fiber Type	Dist.	Temp.	Optical Interface
ATSFPGEBD151340D-L	1.25Gbps	yes	1550nm/ 1310nm	SMF	40km	0~70℃	BiDi LC
ATSFPGEBD151340D-LI	1.25Gbps	yes	1550nm/ 1310nm	SMF	40km	-40~85℃	BiDi LC

VERSION UPDATE:

VERSION NO.	DATE	UPDATED INFORMATION
V20161010	20161010	1. EEPROM& DDM Threshold updated 2. "LABEL" added 3. Ordering information updated 4. Product picture updated
V20170815	20170815	1. More items added into list

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NOTICE:

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

(Harish Gupta)

Authorised Signatory

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