

1.25Gbps SFP Transceiver BN-J4859D



Product Features

- Up to 1.25Gbps data links
- 10Km with 9/125µm SMF
- 1310nm FP laser
- Duplex LC Connector
- Hot-pluggable SFP footprint
- Single 3.3V power supply
- Operating temperature: Ref.to ordering info.
- RoHS
- Digital Diagnostic Monitor (DDM)



Applications

√ 1.25Gbps 1000Base-LX

1. Product Description

The BN-J4859D is a small form factor pluggable (SFP) transceiver compatible with multi-sourcing agreement (MSA). It is suitable for single-mode fiber (SMF) communications in 1.25Gbps Ethernet and 1G Fiber Channel.

2. Regulatory Compliance

Our 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	3.6	V
Storage Temperature	T _s	-40	85	°C
Operating Case Temperature	T _c	Refer to ordering information		

4. Recommended Operating Conditions

Parameter	Symbol	Min.	Typical	Max.	Unit
Operating Case Temperature	T_c	Refer to ordering information			
Power Supply Voltage	V_{CC}	3.15	3.3	3.45	V
Power Supply Current	I_{CC}			250	mA
Data Rate			1.25	2.125	GBps
Max Link Length on 9/125 μ m SMF	L_{max}		10		km

5. Optical Characteristics

Parameter	Symbol	Min.	Typical	Max.	Unit
Transmitter					
Centre Wavelength	λ_c	1260	1310	1360	nm
Spectral Width (RMS)	σ			4	nm
Average Output Power	P_{out}	-9		-3	dBm
Extinction Ratio	ER	9			dB
Optical Rise/Fall Time	tr/tf			1	ns
Receiver					
Centre Wavelength	λ_c	1200	1310	1600	nm
Receiver Sensitivity	P_{IN}			-23	dBm
Receiver Overload	P_{max}	1			dBm
LOS De-Assert	LOS_D			-27	dBm
LOS Assert	LOS_A	-29			dBm
LOS Hysteresis		0.5		4.5	dB

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}	500		2400	mV
Tx-Dis Disable	Vd	2.0		V_{cc}	V
Tx-Dis Enable	Ven	0		0.8	V
TX-Fault (Fault)		2.0		$V_{cc}+0.3$	V
TX-Fault (Normal)		0		0.8	V
Receiver					
Data Output Swing Differential	V_{out}	370		2000	mV
Rx-Los Fault	Vlf	2.0		$V_{cc}+0.3$	V
Rx-Los Normal	Vln	0		0+0.8	V

7. Pin Descriptions

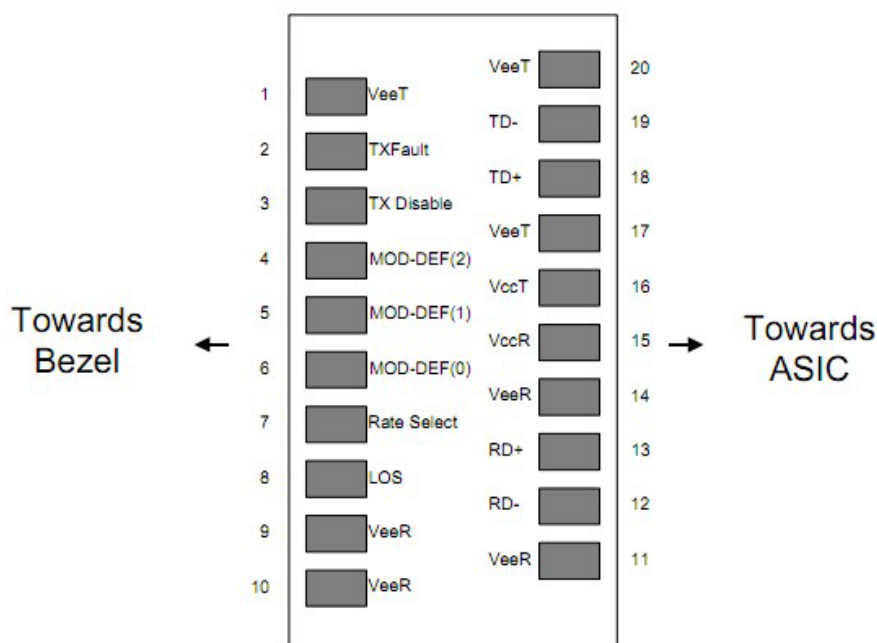


Diagram of Host Board Connector Block Pin Numbers and Names

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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. Clock 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
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.

8. EEPROM & DDM THRESHOLD

8.1 EEPROM

2 wire address 1010000X (A0h)

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

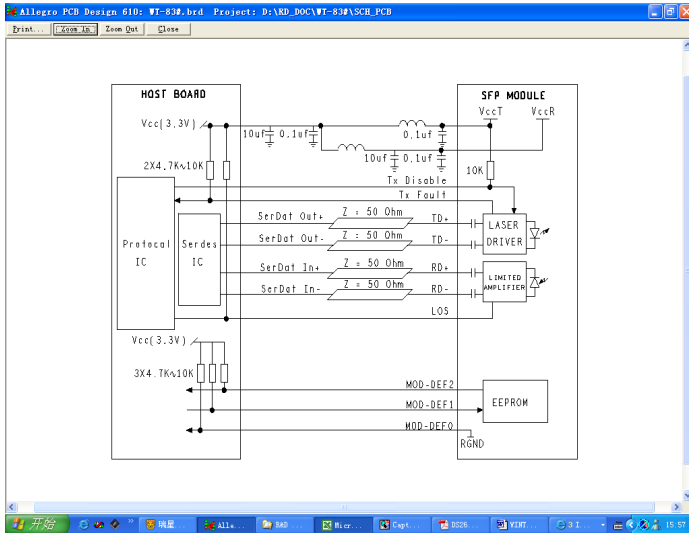
8.1 DDM THRESHOLD

	Low Alarm	Low Warn	H i g h Warn	H i g h Alarm
Temperature BN-J4859D	-45℃	-40℃	85℃	90℃
Voltage	3V	3.1V	3.5V	3.6V
BN-J4859D	3mA	4mA	70mA	75mA
Tx Power	-13.5dBm	-9.5dBm	-1dBm	1dBm
Rx Power	-23dBm	-19dBm	-3dBm	1dBm

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9. Recommend Circuit



10. Mechanical Specifications

