

## BN-GLC-EX-SM

### 1.25G/2.125Gbps 40KM SFP Transceiver



#### FEATURES

- Up to 2.125Gbps data links
- 40km 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)

#### APPLICATION

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

#### PRODUCT DESCRIPTION

BN-GLC-EX-SM 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/2G Fiber Channel.

#### REGULATORY COMPLIANCE

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.

#### ABSOLUTE MAXIMUM RATING

Parameter	Symbol	Min.	Max.	Unit
Supply Voltage	V <sub>CC</sub>	-0.5	3.6	V
Storage Temperature	T <sub>s</sub>	-40	85	°C
Operating Case Temperature	T <sub>c</sub>	Refer to ordering information		

## RECOMMENDED OPERATING CONDITIONS

Parameter	Symbol	Min.	Typical	Max.	Unit
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 $\mu$ m SMF	$L_{max}$			40	km
Operating Case Temperature	$T_C$	Refer to ordering information			

## OPTICAL CHARACTERISTICS

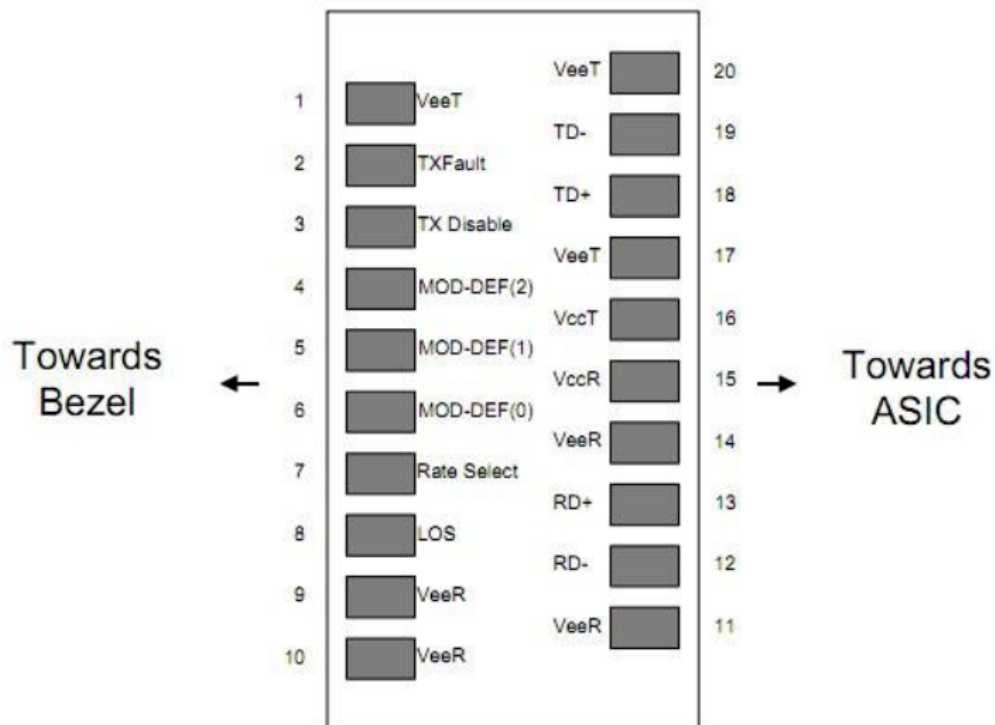
Parameter	Symbol	Min.	Typical	Max.	Unit
<b>Transmitter</b>					
Centre Wavelength	$\lambda_c$	1260	1310	1360	nm
Spectral Width (RMS)	$\sigma$			4	nm
Average Output Power	$P_{out}$	-5		0	dBm
Extinction Ratio	ER	9			dB
Optical Rise/Fall Time	$t_r/t_f$			1	ns
<b>Receiver</b>					

<b>Receiver</b>					
Centre Wavelength	$\lambda_c$	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

## ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Min.	Typical	Max.	Unit
<b>Transmitter</b>					
Input Differential Impedance	Z <sub>in</sub>	90	100	110	Ω
Data Input Swing Differential	V <sub>in</sub>	500		2400	mV
Tx-Dis Disable	V <sub>d</sub>	2.0		V <sub>cc</sub>	V
Tx-Dis Enable	V <sub>en</sub>	0		0.8	V
TX-Fault (Fault)		2.0		V <sub>cc</sub> +0.3	V
TX-Fault (Normal)		0		0.8	V
<b>Receiver</b>					
Data Output Swing Differential	V <sub>out</sub>	370		2000	mV
Rx-Los Fault	V <sub>lf</sub>	2.0		V <sub>cc</sub> +0.3	V
Rx-Los Normal	V <sub>ln</sub>	0		0+0.8	V

## 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. 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.

## EEPROM & DDM THRESHOLD

### 1 - EEPROM

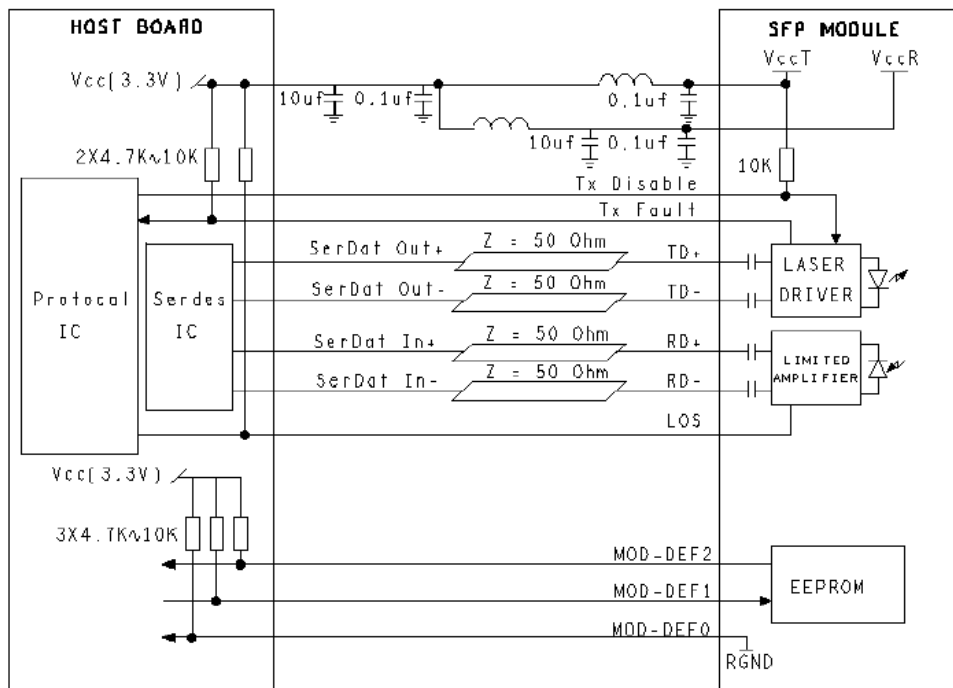
#### 2 wire address 1010000X (A0h)

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

## 2 - DDM THRESHOLD

		Low Alarm	Low Warn	High Warn	High Alarm
Temp.	BN-GLC-EX-SM	-5°C	0°C	70°C	75°C
Voltage		3V	3.1V	3.5V	3.6V
Tx Bias BN-GLC-EX-SM		3mA	4mA	70mA	75mA
Tx Power		-8dBm	-7dBm	1dBm	2dBm
Rx Power		-23dBm	-22dBm	1dBm	2dBm

## RECOMMEND CIRCUIT



## MECHANICAL SPECIFICATION

