SFP28-25G-LR-DR

10/25GBase SFP28
1310nm
10km Reach

+45 (0)32 72 66 76
info@nexgen.eu
www.nexgen.eu

Features

- Supports 10.3125Gb/s & 25.78Gb/s data rate
- Up to 10km transmission on SMF
- Duplex LC Connextor
- Hot-pluggable SFP28 footprint
- Power dissipation < 1.0W (0°C to 70°C)
- Power dissipation < 1.2W (-40°C to 85°C)
- Built-in digital diagnostic functions
- Single +3.3V power supply
- Commercial operating case temperature: 0°C to 70°C
- Industrial operating case temperature : -40°C to 85°C
- RoHS Compliant

Applications

- 10G Base-LR
- 25G Base-LR

Part number	Product description
SFP28-25G-LR	25GBase SMF SFP28 1310nm 10km 0°C to 70°C LC Duplex DDM
SFP28-25G-LR-I	25GBase SMF SFP28 1310nm 10km -40°C to 85°C LC Duplex DDM

PIN Description

PIN	Symbol	Name - Description	Notes
1	VEET	Transmitter Ground (Common with Receiver Ground)	
2	TFAULT	Transmitter Fault. Not supported.	1
3	TDIS	Transmitter Disable. Laser output disabled on high or open.	2
4	MOD_DEF(2)	Module Definition 2. Data line for Serial ID.	1
5	MOD_DEF(1)	Module Definition 1. Clock line for Serial ID.	1
6	MOD_DEF(0)	Module Definition 0. Grounded within the module.	1
7	Rate Select	No connection required	
8	LOS	Loss of Signal indication. Logic 0 indicates normal operation.	3
9	VEER	Receiver Ground (Common with Transmitter Ground)	
10	VEER	Receiver Ground (Common with Transmitter Ground)	
11	VEER	Receiver Ground (Common with Transmitter Ground)	
12	RD-	Receiver Inverted DATA out. AC Coupled	4
13	RD+	Receiver Non-inverted DATA out. AC Coupled	4
14	VEER	Receiver Ground (Common with Transmitter Ground)	
15	VCCR	Receiver Power Supply	
16	VCCT	Transmitter Power Supply	
17	VEET	Transmitter Ground (Common with Receiver Ground)	
18	TD+	Transmitter Non-Inverted DATA in. AC Coupled.	5
19	TD-	Transmitter Inverted DATA in. AC Coupled.	5
20	VEET	Transmitter Ground (Common with Receiver Ground)	

Notes:

1. Open collector/drain output, which should be pulled up with a 4.7kΩ to 10kΩ resistor on the host board if intended for use. Pull up voltage should be between 2.0V to 3.6V. A high output indicates a transmitter fault caused by either the TX bias current or the TX output power exceeding the preset alarm thresholds. A low output indicates normal operation. In the low state, the output is pulled to <0.8V.
2. Laser output disabled on Tx_Disable >2.0V or open, enabled on Tx_Disable <0.8V.
3. LOS is open collector output. Should be pulled up with 4.7kΩ to 10kΩ on host board to a voltage between 2.0V and 3.6V. Logic 0 indicates normal operation; logic 1 indicates loss of signal.
4. RD-/+: These are the differential receiver outputs. They are internally AC-coupled 100Ω differential lines which should be terminated with 100Ω (differential) at the user SERDES.
5. TD-/+: These are the differential transmitter inputs. They are internally AC-coupled, differential lines with 100Ω differential termination inside the module.

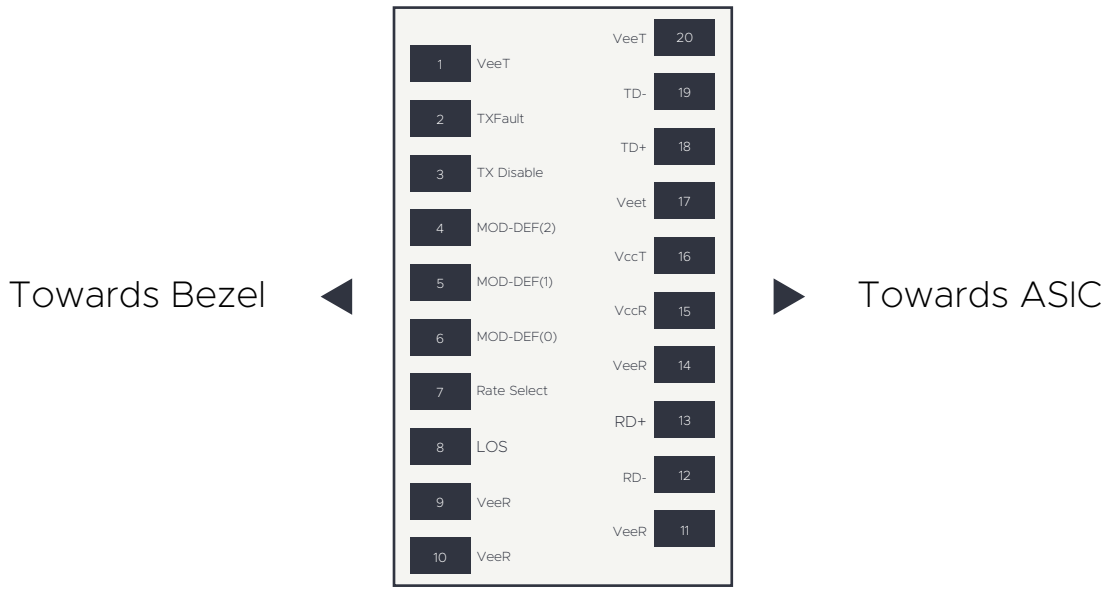


Figure 1. Diagram of host board connector block pin numbers and names

Absolute Maximum Ratings

Parameter	Symbol	Min	Typ	Max	Unit	Notes
Maximum Supply Voltage	Vcc	-0.5	-	+4.0	V	
Storage Temperature	Ts	-40	-	+85	℃	
Relative Humidity	RH	5	-	95	%	1

Notes:
1. Non-condensing.

Recommend Operation Conditions

Parameter	Symbol	Min	Typ	Max	Unit	Notes
Power Supply Voltage	Vcc	3.13	3.3	3.47	V	
Power Supply Current (com.)	Icc	-	-	300	mA	
Power Supply Current (ind.)	Icc	-	-	380	mA	
Case Operating Temperature (com.)	Top	0	-	+70	°C	
Case Operating Temperature (ind.)	Top	-40	-	+85	°C	

Electrical Characteristics

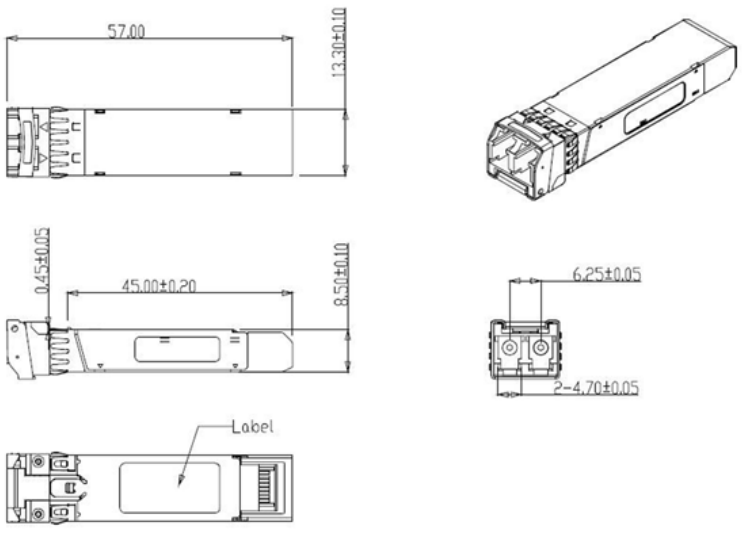
Parameter	Symbol	Min	Typ	Max	Unit	Notes
Transmitter						
Steady State Current	Icc	-	-	300	mA	
Input Differential Impedance	Zin	90	100	110	Ω	
Differential Input Voltage	Vppin	200	-	1000	mV	
Receiver						
Output Differential Impedance	Zout	90	100	110	Ω	
Differential Output Voltage	Vppout	100	-	500	mV	

Optical Characteristics

Parameter	Symbol	Min	Typ	Max	Unit	Notes
Transmitter						
Optical Center Wavelength	λC	1295	1310	1325	nm	
Average Output Power	Po	-5.0	-	2.0	dBm	
Optical Extinction Ratio	ER	3.0	-	-	dB	
RMS Spectral Width (-20dB)	Δλ	-	-	1	nm	
Data Rate	-	10.3125	25.78	-	Gb/s	
Transmitter Dipsertion Penalty	TDP	-	-	3.2	dB	
Side Mode Suppression Ratio	SMSR	30	-	-	dB	
Receiver						
Optical Center Wavelength	λC	1260	-	1355	nm	
Receiver Sensitivity (OMA)	Pmin	-	-	-13	dBm	
Receiver Overload	Pmax	3.0	-	-	dBm	
LOS De-Assert	LOSD	-	-	-17	dBm	
LOS Assert	LOSA	-30	-	-	dBm	
LOS Hysteresis	LOSH	0.5	-	-	dB	

Notes:
Sensitivity is measured at 25.75 Gbps with 5x10E-5 BER

Mechanical Dimensions



Revision history

Revision	Date	Author	Description
V1.1	05-03-2020	JGN	Initial Document

Note : Nexgen A/S reserves the right to change this document without notice.