SBU35080DRxD – SFP Single Fibre

Tx 1310nm & Rx 1550nm / 80km / Dual Rate

For your product safety, please read the following information carefully before any manipulation of the transceiver:

ESD

This transceiver is specified as ESD threshold 1kV for SFI pins and 2kV for all others electrical input pins, tested per MIL-STD-883G, Method 3015.4 /JESD22-A114-A (HBM). However, normal ESD precautions are still required during the handling of this module.

LASER SAFETY

This is a Class1 Laser Product according to IEC 60825-1:2007. This product complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated (June 24, 2007).

The optical ports of the module need to be terminated with an optical connector or with a dust plug in order to avoid contamination.

1. Overview

SBU35080DRxD is a high-performance transceiver module for up to 1.25Gbps data links over a single mode fibre. The maximum reach[1] is 80km, with 34dB end of life (EOL) power budget. The transmitter is a 1310nm Fabry-Pérot (FP) laser; the receiver is a 1550nm PIN photo diode. Consequently, a module with a 1550nm transmitter and a 1310nm receiver is required at the opposite side of the link. The recommended counterpart is SBD53080DRxD.

This transceiver module is compliant with the Small Form-factor Pluggable (SFP) Multisource Agreement (MSA) and hot pluggable. Always contact Skylane Optics® commercial agents for compatibility with different equipment platforms.

2. Features

- SFP Multi-Source Agreement compliant (INF-8074)
- Hot pluggable SFP footprint
- Management interface specification as per SFF-8431 and SFF-8472
- Single LC connector
- 1310nm FP transmitter
- 1550nm PIN receiver
- 80km point-to-point transmission on single mode fibre
- Operating temperature range 0°C to 70°C or -40°C to 85°C
- Low power dissipation (<1W)
- Digital diagnostics monitoring (DDM)

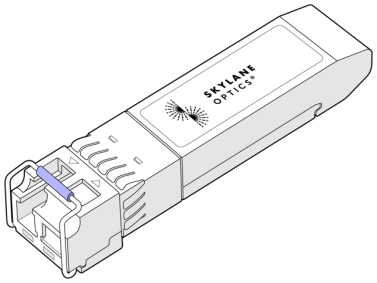

Figure 1. SFP Single Fibre
(non-binding illustration)

3. Applications

- Fast Ethernet
- Gigabit Ethernet
- 1× Fiber Channel

4. Optical Interface

P/N	Wavelength [nm]	Optical Output Power[2] [dBm]	Optical Receiver Sensitivity[3] [dBm]	Optical Receiver Overload[4] [dBm]	Power Budget[2] [dB]
SBU35080DRxD	Tx 1310 Rx 1550	1 to 5	≤ -24	-8	≥ 34

1. Distance is estimated assuming typical optical losses after decent quality fibre deployment; Only optical budget value is guaranteed
2. EOL, over operating temperature range. Together with SBD53080DRxD
3. Measured with 1.25Gbps PRBS 2^7-1, ER=9dB, BER≤10^{-12}
4. The optical input to the receiver should not exceed this value. Transmitters must never be directly connected to receivers before ensuring that proper optical attenuation is used

5. Technical Parameters

5.1. Recommended Operating Conditions					
Parameter	**Min**	**Typ**	**Max**	**Unit**	**Notes**
Storage temperature	-40		85	°C	
Operating Case Temperature	0		70	°C	SBU35080DR0D
	-40		85		SBU35080DR2D
Relative Humidity			95	%	Non condensing
Power Supply Voltage	3.15	3.3	3.45	V	
Power Supply Current			300	mA	

5.2. Transmitter Optical Specifications					
Parameter	**Min**	**Typ**	**Max**	**Unit**	**Notes**
Average Output Power	1		5	dBm	5
Centre Wavelength	1260		1360	nm	
Spectral Width (RMS)			3.5	nm	
Extinction Ratio	8.2			dB	

5. Output power coupled into a 9/125 µm single-mode fibre

5.3. Receiver Optical Specifications					
Parameter	**Min**	**Typ**	**Max**	**Unit**	**Notes**
Receiver Sensitivity			-24	dBm	6
Receiver Overload	-8			dBm	6
Receiver Operating Range	1520		1580	nm	

6. Measured with 1.25Gbps PRBS 2^7-1, ER=9dB, BER≤10^{-12}

6. Transceiver Electrical Pad Layout

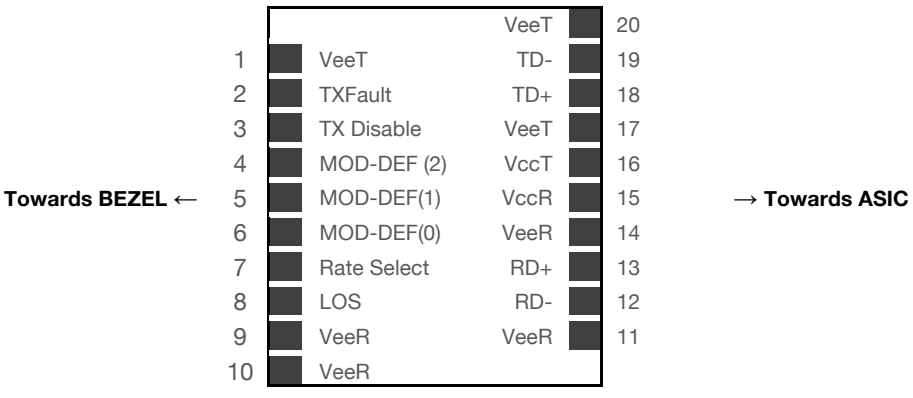

Figure 2. Transceiver Electrical Pad Layout

7. Module Electrical Pin Definition

SFP MSA (INF-8074i)

Pin Number	Name	Function
1	VeeT	Transmitter Ground
2	TX Fault	Transmitter Fault Indication
3	TX_ Disable	Transmitter Disable
4	MOD-DEF2	2-Wire Serial Interface Data
5	MOD-DEF1	2-Wire Serial Interface Clock
6	MOD-DEF0	Grounded in Module
7	Rate Select	Not Connected
8	LOS	Loss of Signal
9	VeeR	Receiver Ground
10	VeeR	Receiver Ground
11	VeeR	Receiver Ground
12	RD-	Inverted Received Data Out
13	RD+	Received Data Out
14	VeeR	Receiver Ground
15	VccR	Receiver Power
16	VccT	Transmitter Power
17	VeeT	Transmitter Ground
18	TD+	Transmit Data In
19	TD-	Inverted Transmit Data In
20	VeeT	Transmitter Ground

8. EEPROM

SFP MSA (SFF-8472)

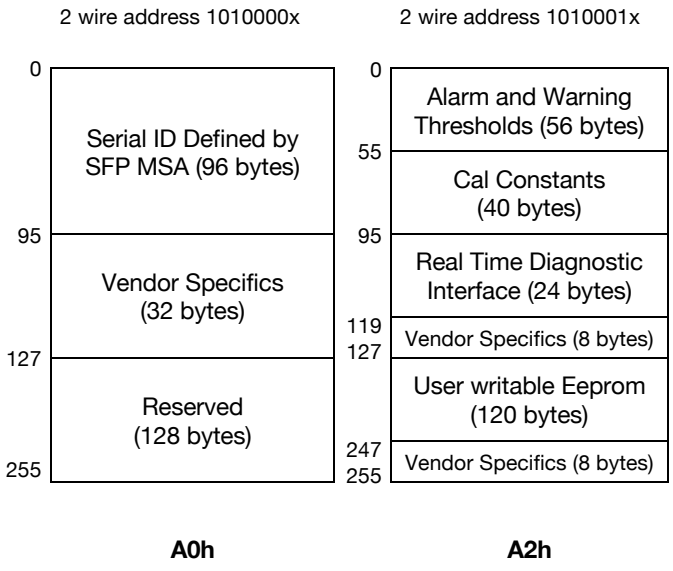

Figure 3. EEPROM of a an SFP

9. Ordering Information

Part Number	Description
SBU35080DR0D	SFP single fibre, Tx 1310nm (FP), Rx 1550nm (PIN), maximum distance 80km, power budget 34dB, dual rate, LC connector, **0°C to 70°C**, DDM
SBU35080DR2D	SFP single fibre, Tx 1310nm (FP), Rx 1550nm (PIN), maximum distance 80km, power budget 34dB, dual rate, LC connector, **-40°C to 85°C**, DDM

10. Document Revision Information

Revision	Description
A	Initial release
B	Industrial temperature variant added

Skylane Optics® supplies a broad range of optical transceivers. Our engineers work closely with our customers to find the best solutions for every application. We are committed to provide high quality products and services to our customers.

For questions on this product please contact:
support@skylaneoptics.com