100G QSFP28 BIDI Tx1291nm/ Rx1311 nm

Variants

10km LC 20Km LC

Details

100Gbps Bi-Directional Simplex LC QSFP28 Transceiver

QSFP28 100G BIDI Transceiver, Tx1291nm / Rx1311nm, designed for up to 20km transmission over single-mode fiber with low power consumption and integrated digital diagnostics.

Key Features

No.	Feature
1	Lane signaling rate 106.25Gb/s with PAM4
2	Up to 20km transmission on SMF
3	EML laser and PIN receiver
4	4 × 25.78Gb/s NRZ electrical interface (CAUI-4)
5	Supports KP4 FEC inside the module
6	I2C interface with integrated digital diagnostics monitoring
7	QSFP28 MSA package with simplex LC connector
8	Single +3.3V power supply

9	Power consumption 4W
10	Operating case temperature: 0°C to +70°C
11	Compliant with SFF-8636, SFF-8679, 100G Lambda MSA, and EU Directive 2015/863/EU

Applications

No.	Application
1	Data Center
2	100GBASE-LR BIDI

Ordering Information

Data Rate	Laser	Fiber Type	Distance	Interface	Temp	DDMI	Latch Color	Variant
106.25Gb	Tx1291 / Rx1311	SMF	20km	LC	0~70°C	Yes	Purple	A
106.25Gb	Tx1311 / Rx1291	SMF	20km	LC	0~70°C	Yes	Red	B

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit
Storage Temperature	TS	-40	-	+85	°C
Supply Voltage	VCC	-0.5	-	+4.0	V

Operating Relative Humidity	RH	-	-	85	%

Recommended Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit
Operating Case Temperature	TC	0	-	+70	°C
Power Supply Voltage	VCC	3.13	3.3	3.47	V
Transmission Distance	TD	-	-	20	km

Key Optical Characteristics

Parameter	Specification
Transmitter Center Wavelength	1291nm or 1311nm
Receiver Center Wavelength	1311nm or 1291nm
Signaling Rate	53.125 GBd
Average Launch Power	-0.2 to 6.6 dBm
TDECQ	3.6 dB max
Side Mode Suppression Ratio	30 dB min
Extinction Ratio	3.5 dB min
Average Rx Power	-10 to 6.6 dBm
Receiver Sensitivity (OMA)	-7.6 dBm / (-9 + TDECQ) dBm

LOS Assert / De-Assert	-26 dBm / -10 dBm
Stressed Receiver Sensitivity	-5.4 dBm

Electrical Characteristics

Parameter	Specification
Input Differential Impedance	100 Ohm
Differential Data Input Amplitude	900 mVpp max
DC Common-Mode Input Voltage	-0.3 to 2.8 V
Output Differential Impedance	100 Ohm
Differential Data Output Amplitude	900 mVpp max
Transition Time	10ps / 12ps typical

Digital Diagnostics

Parameter	Range	Accuracy	Calibration
Temperature	0 to 70°C	±3°C	Internal
Voltage	0 to Vcc	±3%	Internal
Tx Bias Current	0 to 100mA	±10%	Internal
Tx Output Power	-0.2 to 6.8 dB	±3 dB	Internal
Rx Input Power	-10 to 6.6 dB	±3 dB	Internal

Communication Interface Timing

Parameter	Symbol	Max.	Notes

Initialization Time	t_init	10 s	Time from power on or hot plug until module is fully functional

Main Pin Definitions

Pin	Logic	Symbol	Description
1	-	GND	Ground
8	LVTTL-I	ModSelL	Module Select
9	LVTTL-I	ResetL	Module Reset
11	LVCMOS-I/O	SCL	2-Wire Serial Interface Clock
12	LVCMOS-I/O	SDA	2-Wire Serial Interface Data
27	LVTTL-O	ModPrsL	Module Present
28	LVTTL-O	IntL / Rx_LOS	Interrupt / Rx_LOS
31	LVTTL-I	LPMode / TxDIS	Low Power Mode / Tx Disable

Part Number Information

Part Number	Product Description
A	TX 1291nm, RX 1311nm, 100Gbps, Bi-Directional Simplex LC QSFP28 Transceiver, 0°C to +70°C, with DDM
B	TX 1311nm, RX 1291nm, 100Gbps, Bi-Directional Simplex LC QSFP28 Transceiver, 0°C to +70°C, with DDM