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QSFP28 - 100G - BiDi

100Gb/s QSFP28 BiDi ER 40km DDM Transceiver

Description:

OPTOKON **100G QSFP28 BiDi ER** is designed for 40km optical communication applications. It is intended for the service with single mode fiber in 100Gb/s high speed data communications.

The optical signals are multiplexed to a single-mode fiber through commercial standard LC connector. The module incorporates one channel optical signal on 1304nm and 1309nm wavelength. Compliant with the QSFP28 MSA. Digital diagnostics functions are available via the I2C interface, as specified by the QSFP28 MSA.

Features:

- Supports 100GBASE-ER1 BiDi
- Lane signaling rate 106.25Gb/s with PAM4
- Up to 40 km transmission on SMF
- EML Laser and APD receiver
- 4x25.78Gb/s with NRZ electrical interface (CAUI-4)
- Support KP4 FEC inside the module
- High speed I/O electrical interface
- I2C interface with integrated Digital Diagnostic monitoring
- QSFP28 MSA package with simplex LC connector
- Single +3.3 V power supply
- Power consumption < 4W
- Case operating temperature: 0°C to 70°C

Safety and regulatory compliance and standards:

- Compliant to IEEE 802.3cu, SFF-8636 & SFF-8679
- Compliant to 100G Lambda MSA 100G-ER optical spec.
- Complies with EU Directive 2015/863/EU

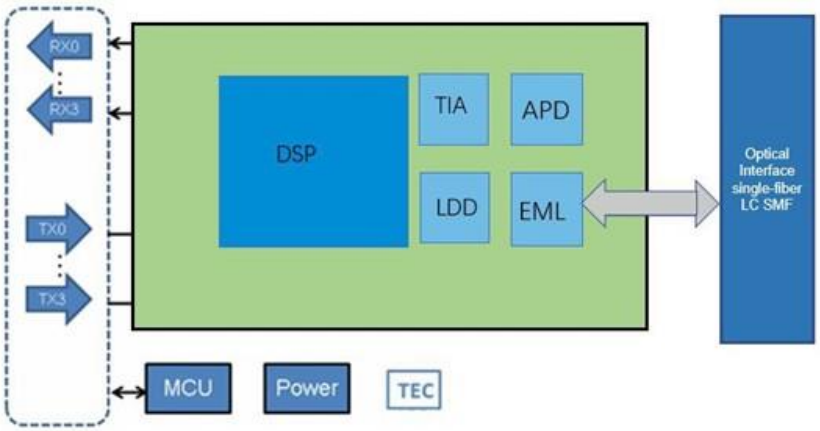
Applications:

- 100G Ethernet
- Data centers

Recommended operating conditions:

Parameter	*Min*	*Typ*	*Max*	*Unit*	*Note*
Case Operating Temperature	0	–	+70	°C	Without air flow
Relative Humidity	–	–	85	%	
Power Supply Voltage	3.13	3.3	3.47	V	
Transmission Distance			40	km	9/125um SMF

Module block diagram:



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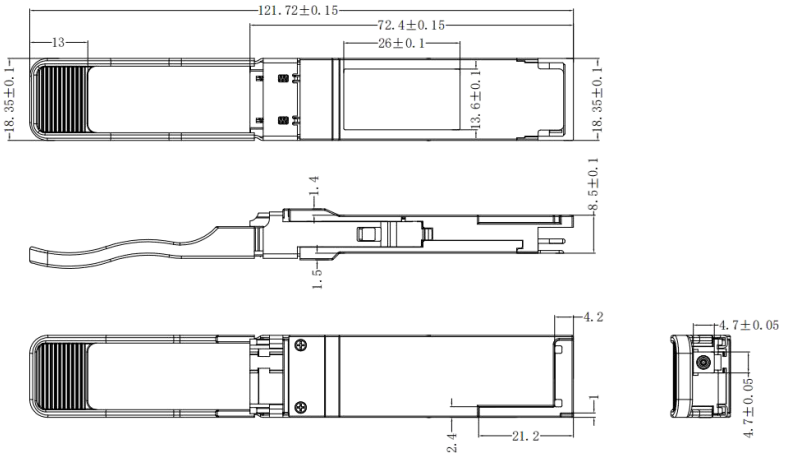
Optical and Characteristics:

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Transmitter						
Center Wavelength	CW	1303.54	1304.58	1305.63	nm	
		1308.09	1309.14	1310.19	nm	
Signaling Rate	SR			53.125	GBd	
Frequency Offset	Foffset	-100		100	Ppm	
Average Launch Power	PTX	1.7		7.1	dBm	1
Average Output Power (Laser Turn off)	Poff	–	–	-30	dBm	
Side Mode Suppression Ratio	SMSR	30	–	–	dB	
Extinction Ratio	ER	5	–	–	dB	
Transmitter reflectance	Tref	–	–	-26	dB	
Optical Return Loss Tolerance	ORLT	–	–	15.6	dB	
Receiver						
Center Wavelength	CW	1303.54	1304.58	1305.63	nm	
		1308.09	1309.14	1310.19	nm	
Damage threshold	Pdamage	-2.4	–	–	dBm	2
Average Rx Power	PRx	-16	–	-3.4	dBm	3
Receive power_OMAouter	POMA	–	–	-2.6	dBm	
Reflectance	Ref	–	–	-26	dB	
Loss Assert	LosA	-30	–		dBm	
Los De-Assert	LosDA	–	–	-13	dBm	

Notes: *1) The optical power is launched into SMF*
2) The receiver shall be able to tolerate, without damage, continuous exposure to an optical input signal having this average power level. The receiverdoes not have to operate correctly at this input power.
3) Average receive power, each lane (min) is informative and not the principal indicator of signal strength.

Dimension:



Ordering code:

Code	Description
S100G-W1305/1309-QP28-ER-40-XX	100 Gbps (TX 1305nm/RX 1309nm), QSFP28 housing, 40 km, 0°C to +70°C, DDM, simplex LC connector
S100G-W1309/1305-QP28-ER-40-XX	100 Gbps (TX 1309nm/RX 1305nm), QSFP28 housing, 40 km, 0°C to +70°C, DDM, simplex LC connector

Remark: Full compatibility is conditioned by exact specification of the end device; compatibility of older SFPs is not guaranteed with new devices or updated SW.