FTH-S01T-BOPY-030D

QSFP28 100GBase-ER1, ELM laser/APD receiver, BiDi, SMF, 30km

Picture 1 Transceiver QSFP28 100G 30km

Description

FTH-S01T-BOPY-030D series QSFP28 transceiver can be used to setup a reliable, high speed (up to 100Gbps) serial data link over single-mode fibers. Maximum link span can reach up to 30km. This module is commonly used in today's datacenter interconnections and high-speed cores of computer networks over long distance. Transmission is established over one fiber, where one LAN-WDM channel. Outstanding immunity to EMI interferences (thanks to case made from metal alloys) and great overall performance allows for deployment of high port density systems. Casing made fully from metal alloys ensures very good EMI immunity. Module is fully compliant with QSFP28 MSA and IEEE 802.3ba 100GBASE-ER specification. Host device can access module internal EEPROM memory and DDMI via I2C interface. Built-in digital diagnostic interface (DOM, DDMI) allows a network administrator to monitor each channel's parameters such as: transmitted and received optical power, temperature, supply voltage and laser current. Those information and data are very helpful e.g. in prediction and prevention of connection failures. A module is available in various dedicated versions, which can be compatible with devices from vendors such as Cisco, Juniper, Alcatel-Lucent and Huawei.

Applications

- 100GBASE-ER1 & 100G Ethernet
- Telecom networking
- Data Center

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QSFP28 Transceivers

Key features

- LC Simplex connector
- Transmission distance up to 30km*
- Supports single 53,125GB optical lane
- Supports 106,25Gb/s aggregate bit rate
- Fully compliant with QSFP28 MSA and SFF-8661, SFF-8636
- Hot-Pluggable
- RoHS-6 compliant
- Class 1 laser safety
- Low power consumption (4,5W)
- Metal case for low EMI
- Operating case temperature: 0~70°C

Specification

Supported transmission technology
Ethernet

Speed supported for Ethernet technology
106,25Gbps

Speed supported for Fibre Channel technology
-

Transmission medium
Single-mode fiber 9/125µm

Transmission distance*
30km

Receptacle type
LC Simplex

Wavelength
TX: 1304,58nm; RX: 1309,14nm

Output power
+3dBm~+6,5dBm

Receiver sensitivity
-12,5dBm(OMA)

Power supply voltage
3,3V

Power Dissipation
4,5W

Operating environment – temperature
0~70°C

Operating environment - humidity
15~85% non-condensing

Dimensions
Compliant with QSFP28 Multi-Source Agreement

* - transmission distance depends on optical link attenuation

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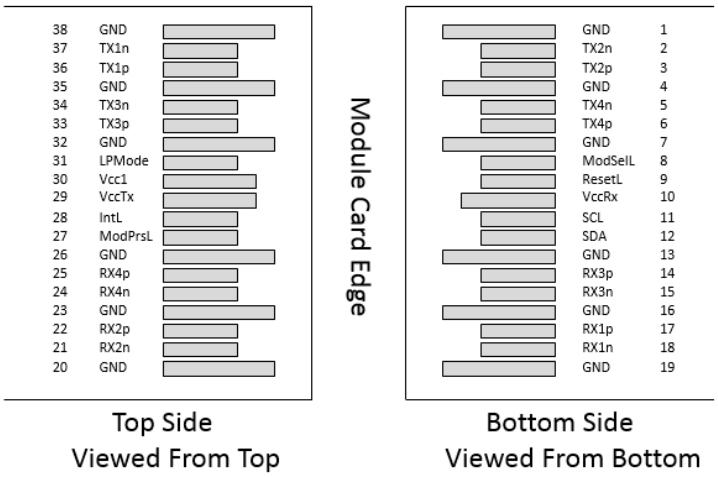
Detailed technical specification

Pin Description



Picture 2 MSA compliant Connector

Pin	Name	Function/Description	Notes
1	GND	Transmitter Ground (Common with Receiver Ground)	1
2	Tx2-	Transmitter Inverted Data Input	-
3	Tx2+	Transmitter Non-Inverted Data Input	-
4	GND	Transmitter Ground (Common with Receiver Ground)	1
5	Tx4-	Transmitter Inverted Data Input	-
6	Tx4+	Transmitter Non-Inverted Data Input	-
7	GND	Transmitter Ground (Common with Receiver Ground)	1
8	ModSelL	Module Select	-
9	ResetL	Module Reset	-
10	VccRx	3.3V Power Supply Receiver	-
11	SCL	2-Wire serial Interface Clock	-
12	SDA	2-Wire serial Interface Data	-
13	GND	Transmitter Ground (Common with Receiver Ground)	1
14	Rx3+	Receiver Non-Inverted Data Output	-
15	Rx3-	Receiver Inverted Data Output	-
16	GND	Transmitter Ground (Common with Receiver Ground)	1
17	Rx1+	Receiver Non-Inverted Data Output	-
18	Rx1-	Receiver Inverted Data Output	-
19	GND	Transmitter Ground (Common with Receiver Ground)	1
20	GND	Transmitter Ground (Common with Receiver Ground)	1
21	Rx2-	Receiver Inverted Data Output	-
22	Rx2+	Receiver Non-Inverted Data Output	-
23	GND	Transmitter Ground (Common with Receiver Ground)	1

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24	Rx4-	Receiver Inverted Data Output	-
25	Rx4+	Receiver Non-Inverted Data Output	-
26	GND	Transmitter Ground (Common with Receiver Ground)	1
27	ModPrsl	Module Present	-
28	IntL	Interrupt	-
29	VccTx	3.3V power supply transmitter	-
30	Vcc1	3.3V power supply	-
31	LPMode	Low Power Mode	-
32	GND	Transmitter Ground (Common with Receiver Ground)	1
33	Tx3+	Transmitter Non-Inverted Data Input	-
34	Tx3-	Transmitter Inverted Data Input	-
35	GND	Transmitter Ground (Common with Receiver Ground)	1
36	Tx1+	Transmitter Non-Inverted Data Input	-
37	Tx1-	Transmitter Inverted Data Input	-
38	GND	Transmitter Ground (Common with Receiver Ground)	1

Notes:

1. The module signal grounds are isolated from the module case.

Electrical parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Power Dissipation	P_D			4.5	W
Module Supply Current	I_{cc}			1435	mA

Transmitter parameters

Parameter	Unit	min	type	max	Note
Transmit wavelenght	nm	1304,06	1304,58	1305,1	
Launch Optical Power(Average)	dBm	0		5,6	
Launch Optical Power(OMA)	dBm	3		6,4	
Extinction Ratio(ER)	dB	5			
RIN OMA	dB/Hz			-136	
Optical Return Loss Tolerance	dB			15	
Pout @TX-Disable Asserted	P_{off}			-15	

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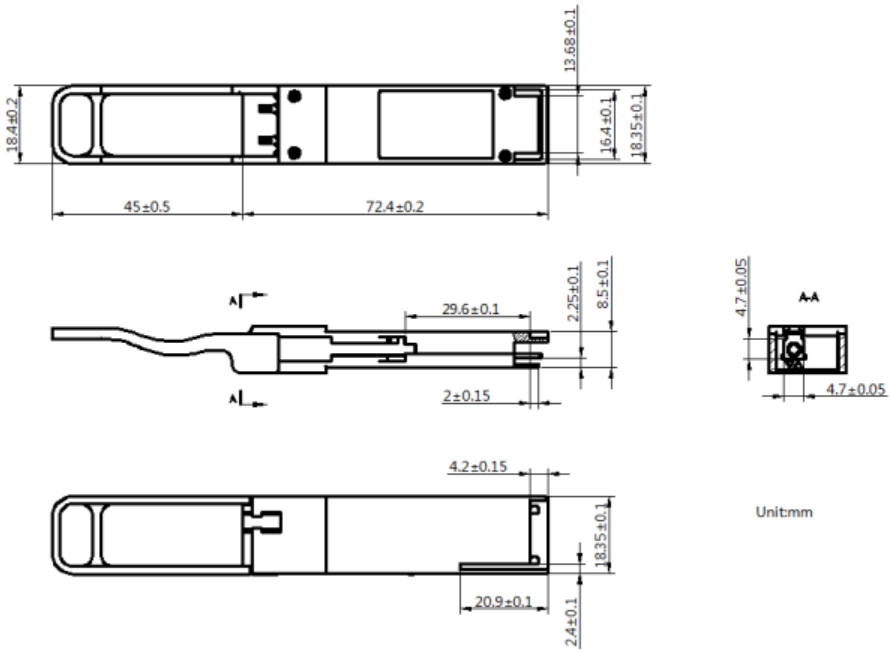
Receiver parameters

Parameter	Unit	min	type	max	Note
Center Wavelength	nm	1308,61	1309,14	1309,66	
Receive Power	dBm	-14,7		-3,4	
Receiver sensitivity (OMA)	dB			-12,5	TECQ< 1,4 dB 1,4 ≤ TECQ ≤ 3,9 dB
				-13,9+ TECQ	
Receiver reflectance	dBm			-26	
LOS Assert	dBm	-24			
LOS De-Assert	dBm			-16	
LOS Hysteresis	dB	0,5			

Mechanical specification



Picture 3 Mechanical Dimensions

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Recommended environment conditions

Parameter	Symbol	Min	Typ	Max	Unit
Operating Temperature Range	T	0		70	^{0}C
Supply Voltage	V_{CC}	3,135	3,3	3,465	V
Relative Humidity	RH	15	-	85	%
Link Distance with				30	km

Ordering information

FTH-S01T-BOPY-030**D**– QSFP28, 100G, BiDi, TX:1309,14nm, RX:1304,58nm, 30km, single-mode, LC Simplex, **DDMI**, commercial temperature (0~70°C)

For further information regarding host device PCB layout recommendation, power supply requirements, EEPROM memory map, DDMI specification please check:

SFF-8436 - Technical specification for QSFP transceiver and SFF-8665 - Technical specification for QSFP28 transceiver

Pictures used for reference only, actual product look may differ. For most actual information please contact technical support via aktywa@fibrain.pl

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