



# **SFP Modules**

## Product Catalog

## 400G



### Features

- Hot-pluggable QSFP-DD form factor
- 8 channels full-duplex transceiver module
- Bx 850nm VCSEL array and PIN photo-detector array
- Internal CDR circuits on both receiver and transmitter channels
- Compliant with QSFP-DD MSA, IEEE 802.3cd 200GBASE-SR4 and CMIS
- Data rate up to 425Gbps (8x PAM4 53Gbps)
- Reach up to 70m (OM3) or 100m (OM4) over MMF with FEC
- Power consumption < 10W
- MPO24 receptacle
- Built-in digital diagnostic functions
- Operating case temperature range from 0°C to 70°C
- 3.3V power supply voltage
- RoHS compliant (lead free)

### Application

2x 200GBASE-SR4 Ethernet

Part No.	Form Factor	Data Rate (Gb/s)	Reach	Wavelength	Transmitter	Receiver	Interface	Temperature
ULSQ85FXM-CDS1	QSFP-DD SR8	425G	PAM4 100m	8x850nm VCSEL	-6.5 ~ 4	< - 6.5	MPO24	0~70

## 100G QSFP28 CWD4



### Features

- Duplex LC receptacle optical interface
- Hot-pluggable QSFP28 MSA form factor
- 4x25G Electrical Serial Interface
- Compliant with 4x28G (CEI-28G-VSR)
- Transmitter: 4x25Gb/s CWD4 TOSA (1270 , 1290 , 1310 , 1330nm)
- Receiver: 4x25Gb/s PIN ROSA
- Operating case temperature range:0°C to 70°C

### Application

- 100GBASE-LR4
- Infiniband QDR and DDR interconnects
- 100G Datacom connections

Part No.	Form Factor	Data Rate (Gb/s)	Reach	Wavelength	Transmitter	Receiver	Interface	Temperature
ULSQXTXL-CD10C	QSFP 28	100G	2 ~ 10km	1270 ~ 1330nm	-4.5 ~ 2.5	<-11.2	LC	0 ~ 70

## OTDR SFP



### Features

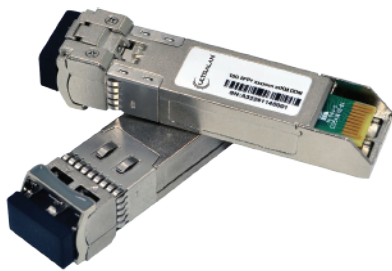
- Integral Micro-OTDR SFP Transceiver
- Dual Fiber, Full Duplex, SFP LC connector
- 0°C to 70°C
- Dead Zone 30 meters(Max)
- Resolution of 10 meters(Min)
- Accuracy of 50 meters(Min)
- Minimum 28 dB Link Budget for FE Data Model
- Minimum 20 dB Link Budget for GbE Data Model
- Minimum 55 dB Dynamic Range for the OTDR
- Automatically Transitions to Micro-OTDR Mode
- Operates Anywhere Conventional SFPs Operate

### Application

- Optical Supervisory Channel
- Network Monitoring
- Network Maintenance
- Business Class Service
- Metro-Ethernet Direct
- Wireless Backhaul

Part No.	Form Factor	Data Rate (Gb/s)	Reach	Wavelength	Transmitter	Receiver	Interface	Temperature
ULOP3112L-CD20	SFP	155M/1.25G	20km	1310nm	-10~-3	<-20	LC	0 ~ 70
ULOP3112L-CD40	SFP	155M/1.25G	40km	1310nm	-5~0	<-22	LC	0 ~ 70
ULOP5512L-CD80	SFP	155M/1.25G	80km	1550nm	-3~+2	<-26	LC	0 ~ 70
ULOPXX12L-CD80	SFP	155M/1.25G	80km	1470~1610nm	-3~+2	<-26	LC	0 ~ 70

## SFP OLP



### Features

- Supports 9.95 to 11.3Gb/s bit rates
- Duplex LC Connector
- Hot pluggable SFP+ footprint
- Uncooled 1270nm DFB transmitter, 1330nm PIN photo-detector
- Uncooled 1330nm DFB transmitter, 1270nm PIN photo-detector
- Applicable for 10km SMF connection
- Low power consumption, < 1.5W
- Digital Diagnostic Monitor Interface
- Optical interface compliant to IEEE 802.3ae 10GBASE-LR
- Electrical interface compliant to SFF-8431
- Operating case temperature:  
Commerical: 0 to 70°C Industrial: -40 to 85°C

### Application

- 10GBASE-LR at 10.3125Gbps
- 10GBASE-LW at 9.953Gbps
- Other optical link

Part No.	Form Factor	Data Rate (Gb/s)	Reach	Wavelength	Transmitter	Receiver	Interface	Temperature
ULLP3512L-CD20	SFP	1.25G	20KM	1310/1550nm	-10~-3	<-19	LC	-40~85
ULLP5312L-CD20	SFP	1.25G	20KM	1550/1310nm	-10~-3	<-19	LC	-40~85
ULLP231XL-CD10	SFP+	10G	10KM	1270/1330nm	-6~0	<-14	LC	-40~85
ULLP321XL-CD10	SFP+	10G	10KM	1330/1270nm	-6~0	<-14	LC	-40~85

## 25G SFP28



### Features

- Hot-pluggable SFP+ footprint
- Built-in digital diagnostic function
- Duplex LC connector
- RoHS compliant
- 10 km on 9/125μm SM
- 100m on MMF (50/125μm)
- Metal enclosure, for lower EMI
- Single 3.3V power supply
- Operating temperature range: 0°C to -40~85°C

### Application

- 25.78 Gb/s single lane 100GE system
- QUT4
- 32GFC
- CPRI Option 10

Part No.	Form Factor	Data Rate (Gb/s)	Reach	Wavelength	Transmitter	Receiver	Interface	Temperature
ULSP852XL-CDS1	SFP28	25G	100m	850nm	-8.4~2.4	<-8	LC	-40~85
ULSP312XL-CD10	SFP28	25G	10km	1310nm	-7~+2	<-11	LC	-40~85

## 25G SFP28 BIDI



### Features

- 25 Gb/s bi-directional data links
- Hot-pluggable SFP+ footprint
- Built-in digital diagnostic function
- Simplex LC connector
- RoHS compliant
- 10 km on 9/125μm SM
- Metal enclosure, for lower EMI
- Single 3.3V power supply
- Operating temperature range: 0°C-70°C

### Application

- 25.78 Gb/s single lane 100GE system
- OUT4
- 32GFC
- CPRI Option 10

Part No.	Form Factor	Data Rate (Gb/s)	Reach	Wavelength	Transmitter	Receiver	Interface	Temperature
ULSB232XL-CD10	SFP28	25G	10km	1270/1330nm	-2~+4	<-10.6	LC	0 ~ 70
ULSB322XL-CD10	SFP28	25G	10km	1330/1270nm	-2~+4	<-10.6	LC	0 ~ 70

## 25G CWDM



### Features

- Support Data Rate 25Gbps
- Built-in CDR
- Up to 70m transmission distance on OM3 MMF
- 850nm VCSEL and PIN receiver
- SFI electrical interface
- 2-wire interface for integrated Digital Diagnostic monitoring
- SFP+ MSA package with duplex LC connector
- Hot pluggable
- Very low EMI and excellent ESD protection
- +3.3V power supply
- Power consumption less than 13W
- Operating case temperature: 0~+ 70°C

### Application

- 32G Fibre Channel
- 25G BASE-SR

Part No.	Form Factor	Data Rate (Gb/s)	Reach	Wavelength	Transmitter	Receiver	Interface	Temperature
ULSCXX2XL-CD20	SFP28	25G	20km	1271/1297nm	-4.3 ~ 4.5	<-12	LC	0 ~ 70
				1311/1331nm				

## 10G SFP+ BIDI 1310/1310nm 3km



### Features

- Supports 9.95 to 10.3Gb/s bit rates
- Simplex LC Connector
- Hot pluggable SFP+ footprint
- Uncooled 1310nm LD transmitter, 1310nm PIN-TIA
- Applicable for 3km SMF connection
- Low power consumption, < 1.0W
- Digital Diagnostic Monitor Interface
- Optical interface compliant to IEEE 802.3ae 10GBASE-LR
- Electrical interface compliant to SFF-8431
- Operating case temperature
- Commercial : 0 to 70 °C

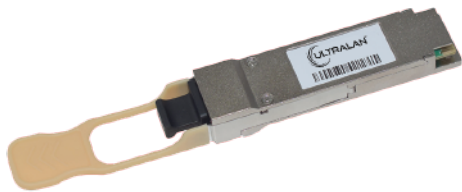
### Application

- 10GBASE-LR at 10.3125Gbps
- 10GBASE-LW at 9.953Gbps
- Other optical link

Part No.	Form Factor	Data Rate (Gb/s)	Reach	Wavelength	Transmitter	Receiver	Interface	Temperature
ULSB311XL-CD03	SFP+	10G	3km	1310/1310nm	-6 ~ -1	<-10	LC	0 ~ 70



# 100G QSFP28



## Features

- Hot-pluggable QSFP28 form factor
- Supports 103.1Gb/s aggregate bit rate
- RoHS-6 compliant
- Single 3.3V power supply
- Maximum link length of 100m on Om4 multi mode fiber (MMF)
- Maximum link length 10km of single made fiber (SMF)
- 4\*25Gb/s transmitter

## Application

- 100GBASE-SR4 100G Ethernet
- 100GBASE-LR4 100G Ethernet
- Other optical link

Part No.	Form Factor	Data Rate (Gb/s)	Reach	Wavelength	Transmitter	Receiver	Interface	Temperature
ULSQ85TXM-CDS1	QSFP 28	100G	100m	850nm	-8.4 ~ 2.4	<-10	MPO	0 ~ 70
ULSQxxTXL-CD10R	QSFP 28	100G	/	/	/	<-8.6	LC	0 ~ 70
ULSQxxTXL-CD10	QSFP 28	100G	10km	LAN-WDM	-4.3 ~ 4.5	<-10	LC	0 ~ 70

# 100G CFP4 LR4



## Features

- Supports 103.1Gb/s aggregate bit rate
- Power dissipation < 5W
- RoHS-6 compliant(lead-free)
- Single 3.3V power supply
- Maximum link length of 10km on Single Mode Fiber(SMF)
- 4x25Gb/s DFB-based LAN-WDM transmitter
- 4x25G electrical interface
- Duplex LC receptacles
- MDIO management interface
- Commercial case temperature range: 0°C to 70°C

## Application

100GBASE-LR4 100G Ethernet

Part No.	Form Factor	Data Rate (Gb/s)	Reach	Wavelength	Transmitter	Receiver	Interface	Temperature
ULCPxxTXL-CD10R	CFP4	100G	/	/	/	<-8.6	LC	0 ~ 70
ULCPxxTXL-CD10	CFP4	100G	10km	LAN-WDM	-4.3 ~ 4.5	<-8.6	LC	0 ~ 70

# 100G CFP2



## Features

- Hot-pluggable CFP2 form factor
- Supports 103.1 Gb/s aggregate bit rate
- Power dissipation < 8W
- RoHS-6 compliant(lead-free)
- Commercial case temperature range of 0°C to 70°C
- Single 3.3V power supply
- Maximum link 10km and 30km on Single Mode Fiber(SMF)
- Maximum link 150m on MultiMode Fiber (MMF)
- 4x25Gb/s DFB-based LAN-WDM transmitter
- 4x25G electrical interface
- Duplex LC receptacles
- MDIO management interface

## Application

- 100G Ethernet
- Data center
- Other optical link

Part No.	Form Factor	Data Rate (Gb/s)	Reach	Wavelength	Transmitter	Receiver	Interface	Temperature
ULCF85TXMX-CDS1	CFP2 SR10	100G	100m	850nm	-8~1	<-9.9	MPO	0 ~ 70
ULCFxxTXL-CD10R	CFP2	100G	/	/	/	<-8.6	LC	0 ~ 70
ULCFxxTXL-CD10	CFP2	100G	10km	LAN-WDM	-4.3~4.5	<-8.6	LC	0 ~ 70
ULSQ314XL-CD30	CFP2	100G	30km	LAN-WDM	-2.9~29	<-16.8	LC	0 ~ 70
ULSQ314XL-CD40	CFP2	100G	40km	LAN-WDM	-2.9~29	<-21	LC	0 ~ 70



## 40G QSFP+



### Features

- Supports 41.2Gb/s bit rates
- Duplex LC receptacle
- Hot pluggable QSFP+ form factor
- 4x10Gb/s CWDM transmitter(1270-1330nm)
- Applicable for 10km on Single Mode Fiber(SMF).
- Built-in digital diagnostic functions
- Low power consumption, < 3.5W
- 3.3V power supply voltage
- Unretimed XLPI electrical interface
- Operating temperature: -5°C to 70°C

### Application

- 40GBASE-LR4 40G Ethernet
- Infiniband QDR and DDR interconnects
- Data center
- Other optical links

Part No.	Form Factor	Data Rate (Gb/s)	Reach	Wavelength	Transmitter	Receiver	Interface	Temperature
ULSQ854XM-CD51	QSFP+	40G	100m	850nm	-8~1	-9.5	MPO	0 ~ 70
ULSQ314XM-CD02	QSFP+	40G	2K/10km	1310nm	-7.5~2.5	-11.5	MPO	0 ~ 70
ULSQxx4XL-CDIO	QSFP+	40G	10km	CWDM 1270~1330nm	-7.5~2.5	-11.5	LC	0 ~ 70
ULSQxx4XL-CD40	QSFP+	40G	40km	CWDM 1270~1330nm	-7.5~2.5	-16.8	LC	0 ~ 70

## 10G SFP+/XFP BIDI 80KM



### Features

- Supports 9.95 to 11.3Gb/s bit rates
- Simplex LC Connector
- Hot pluggable SFP+ footprint
- 1490nm EML transmitter, 1550nm APD receiver
- 1550nm EML transmitter, 1490nm APD receiver
- Applicable for 80km SMF connection
- Low power consumption, < 1.5W
- Digital Diagnostic Monitor Interface
- Compliant to IEEE 802.3ae 10GBASE-ZR
- Electrical interface compliant to SFF-8431
- Operating case temperature: Commercial: 0 to 70°C

### Application

- 10.3125Gbps Ethernet
- SONET OC-192 & SDH STM I-64.1
- Other optical link

Part No.	Form Factor	Data Rate (Gb/s)	Reach	Wavelength	Transmitter	Receiver	Interface	Temperature
ULSB451XL-CD80	SFP+	10G	80km	1490/1550nm	0~+6	<-21	LC	0 ~ 70
ULSB541XL-CD80	SFP+	10G	80km	1550/1490nm	0~+6	-21	LC	0 ~ 70
ULXB451XL-CD80	XFP	10G	80km	1490/1550nm	0~+6	-21	LC	0 ~ 70
ULXB541XL-CD80	XFP	10G	80km	1550/1490nm	0~+6	-21	LC	0 ~ 70

# 10G/40G DAC/ AOC



## Features

- Maximum aggregate data rate: 41.25 Gbps (4 x 10.3125Gbit/s)
- Hybrid cable link length up to 5m
- High-Density QSFP 38-PIN and 4x SFP 20-PIN Connector
- Compliant with SFP MSA and SFF-8472
- Compatible to QSFP+ MSA and SFP+ MSA
- RoHS compliant
- Power Supply : +3.3V
- Case operating temperature:
- Commercial: 0°C to + 70°C

## Application

- Storage Area Networks
- Switches and routers
- Data center cabling infrastructure
- High density connections between networking equipment

Part No.	Form Factor	Data Rate (Gb/s)	Reach	Temperature
ULSFP+AOC	AOC	10G	3m	0 ~ 70
ULQSFPAOC	AOC	40G	3m	0 ~ 70
ULQSFPA4_xSFP+AOC	AOC	40/10G	5m	0 ~ 70
ULQSFPA28AOC	AOC	10G	5m	0 ~ 70
ULSFP+DAC1	DAC	10G	1m	0 ~ 70
ULSFP+DAC3	DAC	10G	3m	0 ~ 70
ULSFP+DAC5	DAC	10G	5m	0 ~ 70
ULQSFPA+DAC1	DAC	40G	1m	0 ~ 70
ULQSFPA+DAC3	DAC	40G	3m	0 ~ 70
ULQSFPA+DAC5	DAC	40G	5m	0 ~ 70
ULQSFPA+_4xSFP+DAC1	DAC	40/10G	1m	0 ~ 70
ULQSFPA+_4xSFP+DAC3	DAC	40/10G	3m	0 ~ 70
ULQSFPA+_4xSFP+DAC5	DAC	40/10G	5m	0 ~ 70

# 10G SFP+



## Features

- Hot pluggable
- 10Gb/s serial optical interface
- Up to 80km distance
- Compliant with SFP+ MSA
- SFP MSA package with duplex LC connector
- Digital Diagnostic Monitor Interface
- Very low EMI and excellent ESD protection
- High transmission margin
- +3.3V single power supply
- Below 1.5W power consumption
- SFP mechanical interface
- Wide data-rate range

## Application

- 10G Ethernet
- Other optical links

Part No.	Form Factor	Data Rate (Gb/s)	Reach	Wavelength	Transmitter	Receiver	Interface	Temperature
ULSP851XL-CDS3	SFP+	10G	300m	850nm	-6~-1	<-10.5	LC	0 ~ 70
ULSP311XL-CD10	SFP+	10G	10km	1310nm	-6~0	<-14.4	LC	0 ~ 70
ULSP551XL-CD40	SFP+	10G	40km	1550nm	-2~+4	<-15	LC	0 ~ 70
ULSP551XL-CD80	SFP+	10G	80km	1550nm	0~+5	<-23	LC	0 ~ 70

# 10G SFP+ BIDI



## Features

- Single LC Connector
- Support hot-pluggable
- Metal with lower EMI
- Excellent ESD protection
- 1270nm Transmitter, 1330nm receiver
- 1330nm Transmitter, 1270nm receiver
- Distance up to 60km on 9/125nm SMF
- RoHS Compliant and Lead-Free
- Operation Temperature: 0°~+ 70°C
- Single 3.3V power supply and Low power dissipation <1.0W
- Support 9.95328Gbps and 10.3125Gbps Data Rate.
- Compliant with IEEE802.3ae
- Compliant with SFF-8431SFP+ MSA and SFF-8472
- Digital Diagnostic Monitor Function.

## Application

- Switch/Router
- SAN/Server
- Other optical transmission systems

Part No.	Form Factor	Data Rate (Gb/s)	Reach	Wavelength	Transmitter	Receiver	Interface	Temperature
ULSB231XL-CD10	SFP+	10G	10km	1270/1330nm	-6 ~ 0	<-14	LC	0 ~ 70
ULSB321XL-CD10	SFP+	10G	10km	1330/1270nm	-6 ~ 0	<-14	LC	0 ~ 70
ULSB231XL-CD40	SFP+	10G	40km	1270/1330nm	0 ~ +6	<-15	LC	0 ~ 70
ULSB321XL-CD40	SFP+	10G	40km	1330/1270nm	0 ~ +6	<-15	LC	0 ~ 70
ULSB231XL-CD60	SFP+	10G	60km	1270/1330nm	+1 ~ +6	<-20	LC	0 ~ 70
ULSB321XL-CD60	SFP+	10G	60km	1330/1270nm	+1 ~ +6	<-20	LC	0 ~ 70

# 10G SFP+ CWDM/DWDM



## Features

- 10Gb/s serial optical interface compliant to 802.3ae
- Electrical interface compliant to SFF-8431
- Compliant with SFF-8472
- Digital diagnostic monitoring interface for optical transceivers
- Eye Safety
- Designed to meet Laser Class1 Compliant with IEC60825-1
- Operating case temperature: -5 to 70°C
- Metal enclosure for low EMI
- Low power consumption advanced firmware allow customer
- System encryption information to be stored in transceiver
- Single +3.3V Power Supply

## Application

- Switch to Switch interface
- Switched backplane applications
- Router/Server interface
- Other optical transmission systems

Part No.	Form Factor	Data Rate (Gb/s)	Reach	Wavelength	Transmitter	Receiver	Interface	Temperature
ULSCxx1XL-CD10	SFP+	10G	10km	1270/1330nm	-3 ~ +5	<-14	LC	0 ~ 70
ULSCxx1XL-CD40	SFP+	10G	40km	1470~4610nm	-2 ~ +4	<-15	LC	0 ~ 70
ULSCxx1XL-CD80	SFP+	10G	80km	1470~4610nm	0 ~ +5	<-23	LC	0 ~ 70
ULSDxx1XL-CD40	SFP+	10G	40km	1528.77~1563.86nm	-2 ~ +4	<-15	LC	0 ~ 70
ULSDxx1XL-CD80	SFP+	10G	80km	1528.77~1563.86nm	0 ~ +5	<-23	LC	0 ~ 70



## 10G XFP



### Features

- Hot pluggable
- Support 9.95Gb/s to 11.1Gb/s bit rates
- Below 2.5W power consumption
- XFP MSA package with duplex LC connector
- Digital Diagnostic Monitor Interface
- Very low EMI and excellent ESD protection
- Up to 80KM on 9/125um SMF
- Operating temperature range 0° to 70°C
- No reference clock requirement

### Application

- SONET OC-192/SDH STM-64
- Other optical links

Part No.	Form Factor	Data Rate (Gb/s)	Reach	Wavelength	Transmitter	Receiver	Interface	Temperature
ULXP851XL-CD53	XFP	10G	300m	850nm	-6 ~ 0	<-10.5	LC	0 ~ 70
ULXP311XL-CD10	XFP	10G	10km	1310nm	-6 ~ 0	<-14.4	LC	0 ~ 70
ULXP551XL-CD40	XFP	10G	40km	1550nm	-2 ~ +4	<-15	LC	0 ~ 70
ULXP551XL-CD80	XFP	10G	80km	1550nm	0 ~ +5	<-23	LC	0 ~ 70

## 10G XFP BIDI



### Features

- Operating data rate up to 10.3Gbps
- 1270nm Transmitter, 1330nm receiver
- 1330nm Transmitter, 1270nm receiver
- Distance up to 60km on 9/125nm SMF
- Single 3.3V Power supply and TTL Logic Interface
- Hot Pluggable
- Operating Case Temperature
- Standard: 0°C~+70° C
- Compliant with MSA SFP Specification
- DDM function

### Application

- Switches/Router
- SONET/SDH
- Other Optical Links

Part No.	Form Factor	Data Rate (Gb/s)	Reach	Wavelength	Transmitter	Receiver	Interface	Temperature
ULXB231XL-CD10	XFP	10G	10km	1270/1330nm	-6 ~ 0	<-14	LC	0 ~ 70
ULXB321XL-CD10	XFP	10G	10km	1330/1270nm	-6 ~ 0	<-14	LC	0 ~ 70
ULXB231XL-CD40	XFP	10G	40km	1270/1330nm	0 ~ +6	<-15	LC	0 ~ 70
ULXB321XL-CD40	XFP	10G	40km	1330/1270nm	0 ~ +6	<-15	LC	0 ~ 70
ULXB231XL-CD60	XFP	10G	60km	1270/1330nm	+1 ~ +6	<-20	LC	0 ~ 70
ULXB321XL-CD60	XFP	10G	60km	1330/1270nm	+1 ~ +6	<-20	LC	0 ~ 70



# 10G XFP CWDM/DWDM



## Features

- Hot-pluggable
- Support 9.95Gb/s to 11.1Gb/s bit rates
- Below 2.5W power dissipation
- XFP MSA package with duplex LC connector
- Digital Diagnostic Monitor Interface
- Very low EMI and excellent ESD protection
- Up to 80km on 9/125um SMF
- Operating temperature range 0°C to 70°C
- No reference clock requirement

## Application

- SONET OC-192/SDH STM-64 line card
- Other optical links

Part No.	Form Factor	Data Rate (Gb/s)	Reach	Wavelength	Transmitter	Receiver	Interface	Temperature
ULXCxx1XL-CD10	XFP	10G	10km	1270/1610nm	-3 ~ +5	<-14	LC	0 ~ 70
ULXCxx1XL-CD40	XFP	10G	40km	1470/1610nm	-2 ~ +4	<-15	LC	0 ~ 70
ULXCxx1XL-CD80	XFP	10G	80km	1470/1610nm	0 ~ +5	<-23	LC	0 ~ 70
ULXCxx1XL-CD40	XFP	10G	40km	1528.77~1563.86nm	-2 ~ +4	<-15	LC	0 ~ 70
ULXCxx1XL-CD80	XFP	10G	80km	1528.77~1563.86nm	0 ~ +5	<-23	LC	0 ~ 70

# SFP



## Features

- Compliant with specifications for IEEE802.3Z
- Multi-source package with Duplex LC Connector
- Eye Safety Designed to meet Laser Class1
- Compliant with IEC60825-1
- Single +3.3V Power Supply
- Hot-Pluggable
- Monitoring interface compliant with SFF-8472
- Complies with Bellcore TA-NWT-000983

## Application

- Switch/Router
- SAN/Server
- Other optical transmission systems

Part No.	Form Factor	Data Rate (Gb/s)	Reach	Wavelength	Transmitter	Receiver	Interface	Temperature
ULSP1301L-CD02	SFP	155M	2km	1310nm	-20 ~ 14	<-28	LC	0 ~ 70
ULSP3101L-CD20	SFP	155M	20km	1310nm	-15 ~ -8	<-32	LC	0 ~ 70
ULSP3101L-CD40	SFP	155M	40km	1310nm	-10 ~ -3	<-34	LC	0 ~ 70
ULSP5501L-CD80	SFP	155M	80km	1550nm	-5 ~ 0	<-32	LC	0 ~ 70
ULSP3106L-CD20	SFP	622M	20km	1310nm	-15 ~ -8	<-26	LC	0 ~ 70
ULSP3106L-CD40	SFP	622M	40km	1310nm	-10 ~ -3	<-28	LC	0 ~ 70
ULSP5506L-CD80	SFP	622M	80km	1550nm	-5 ~ 0	<-32	LC	0 ~ 70
ULSP8512L-CD55	SFP	1.25G	550m	850nm	-10 ~ -3	<-18	LC	0 ~ 70
ULSP3112L-CD20	SFP	1.25G	20km	1310nm	-10 ~ -3	<-22	LC	0 ~ 70
ULSP3112L-CD40	SFP	1.25G	40km	1310nm	-5 ~ 0	<-22	LC	0 ~ 70
ULSP5512L-CD80	SFP	1.25G	80km	1550nm	0 ~ +5	<-26	LC	0 ~ 70
ULSP5512L-CD120	SFP	1.25G	120km	1550nm	0 ~ +5	<-32	LC	0 ~ 70
ULSP8525L-CD53	SFP	2.5G	300m	850nm	-10 ~ -3	<-16	LC	0 ~ 70
ULSP3125L-CD20	SFP	2.5G	20km	1310nm	-5 ~ 0	<-18	LC	0 ~ 70
ULSP3125L-CD40	SFP	2.5G	40km	1310nm	-3 ~ +2	<-28	LC	0 ~ 70
ULSP5525L-CD80	SFP	2.5G	80km	1550nm	0 ~ +5	<-28	LC	0 ~ 70

# SFP BIDI



## Features

- Up to 2.5G Data Rate operation
- Up to 120km on 9/125um SMF
- Standard serial ID information compliant with SFP MSA
- SFP MSA package with duplex LC connector
- Digital Diagnostic Monitor Interface
- Very low EMI and excellent ESD protection
- +3.3V single power supply
- RoHS compliant

## Application

- Switch/Router
- SAN/Server
- Other optical transmission systems

Part No.	Form Factor	Data Rate (Gb/s)	Reach	Wavelength	Transmitter	Receiver	Interface	Temperature
ULSB3501L-CD20	SFP	155M	20km	1330/1550nm	-15 ~ -8	<-30	LC/SC	0 ~ 70
ULSB5301L-CD20	SFP	155M	20km	1550/1330nm	-15 ~ -8	<-30	LC/SC	0 ~ 70
ULSB3501L-CD40	SFP	155M	40km	1330/1550nm	-10 ~ -3	<-32	LC/SC	0 ~ 70
ULSB5301L-CD40	SFP	155M	40km	1550/1330nm	-10 ~ -3	<-32	LC/SC	0 ~ 70
ULSB3501L-CD80	SFP	155M	80km	1330/1550nm	-3 ~ 2	<-36	LC/SC	0 ~ 70
ULSB5301L-CD80	SFP	155M	80km	1550/1330nm	-5 ~ 0	<-37	LC/SC	0 ~ 70
ULSB3512L-CD03	SFP	1.25G	3km	1330/1550nm	-15 ~ -8	<-20	LC/SC	0 ~ 70
ULSB5312L-CD03	SFP	1.25G	3km	1550/1330nm	-15 ~ -8	<-20	LC/SC	0 ~ 70
ULSB3512L-CD20	SFP	1.25G	20km	1330/1550nm	-10 ~ -3	<-22	LC/SC	0 ~ 70
ULSB5312L-CD20	SFP	1.25G	20km	1550/1330nm	-10 ~ -3	<-22	LC/SC	0 ~ 70
ULSB3512L-CD40	SFP	1.25G	40km	1330/1550nm	-5 ~ 0	<-22	LC/SC	0 ~ 70
ULSB5312L-CD40	SFP	1.25G	40km	1550/1330nm	-5 ~ 0	<-22	LC/SC	0 ~ 70
ULSB5412L-CD80	SFP	1.25G	80km	1550/1330nm	-3 ~ +2	<-28	LC/SC	0 ~ 70
ULSB4512L-CD80	SFP	1.25G	80km	1490/1550nm	-3 ~ +2	<-28	LC/SC	0 ~ 70
ULSB4512L-CD120	SFP	1.25G	120km	1550/1490nm	0 ~ +5	<-32	LC/SC	0 ~ 70
ULSB5412L-CD120	SFP	1.25G	120km	1490/1550nm	0 ~ +5	<-32	LC/SC	0 ~ 70
ULSB3525L-CD20	SFP	2.5G	20km	1330/1550nm	-5 ~ 0	<-18	LC/SC	0 ~ 70
ULSB5325L-CD20	SFP	2.5G	20km	1550/1330nm	-5 ~ 0	<-18	LC/SC	0 ~ 70
ULSB3525L-CD40	SFP	2.5G	40km	1330/1550nm	-3 ~ +2	<-18	LC/SC	0 ~ 70
ULSB5325L-CD40	SFP	2.5G	40km	1550/1330nm	-3 ~ +2	<-18	LC/SC	0 ~ 70

# SFP CWDM/DWDM



## Features

- CWDM/DWDM Laser diode transmitter
- PIN/APD photodiode receiver
- Up to 120km on 9/125um SMF
- Standard serial ID information compliant with SFP MSA
- SFP MSA package with duplex LC connector
- Digital Diagnostic Monitor Interface
- Very low EMI and excellent ESD protection
- High transmission margin
- +3.3V single power supply
- Wide operating temperature range
- RoHS compliant

## Application

- Switch/Router
- SAN/Server
- Other optical transmission systems

Part No.	Form Factor	Data Rate (Gb/s)	Reach	Wavelength	Transmitter	Receiver	Interface	Temperature
ULSCxx12L-CD40	SFP	1.25G	40km	1270/1610nm	-5 ~ 0	<-22	LC	0 ~ 70
ULSCxx12L-CD80	SFP	1.25G	80km	1470/1610nm	0 ~ +5	<-26	LC	0 ~ 70
ULSCxx12L-CD120	SFP	1.25G	120km	1470/1610nm	0 ~ +5	<-32	LC	0 ~ 70
ULSCxx25L-CD40	SFP	2.5G	40km	1470/1610nm	-3 ~ +2	<-20	LC	0 ~ 70
ULSCxx25L-CD80	SFP	2.5G	80km	1470/1610nm	0 ~ 5	<-28	LC	0 ~ 70
ULSDxx12L-CD40	SFP	1.25G	40km	1528.77~1563.86nm	-5 ~ 0	<-22	LC	0 ~ 70
ULSDxx12L-CD80	SFP	1.25G	80km	1528.77~1563.86nm	0 ~ 5	<-26	LC	0 ~ 70
ULSDxx12L-CDH3	SFP	1.25G	120km	1528.77~1563.86nm	0 ~ 5	<-32	LC	0 ~ 70



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