



- Passive Optical Devices
- OEM/ODM Manufacturer

Optical Transceiver Module Introduction

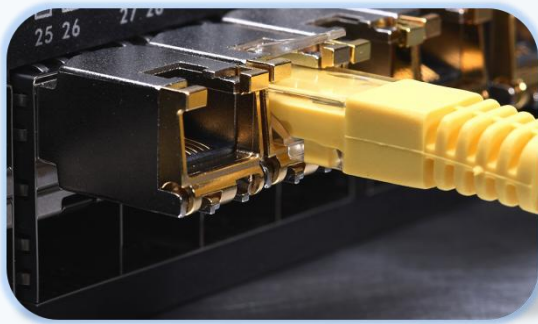


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Optics Inc



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RJ45 Connector & over Cat 6a cable



Feature

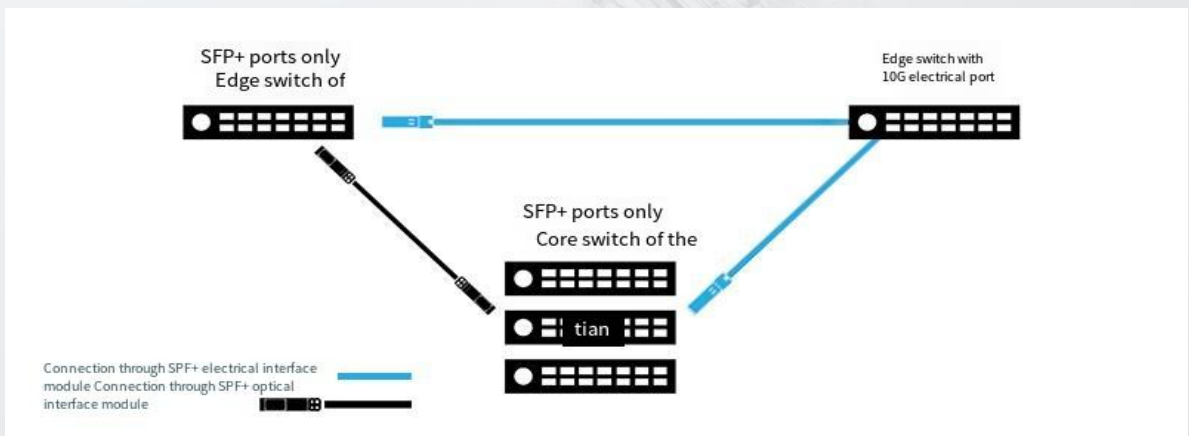
Support :
 10Gbase-T / 5Gbase-T / 2.5Gbase-T / 1000base-T
 Low Power Consumption : 2.5W MAX @ 30m

Standards

IEEE802.3ae 10GBASE-SR/SW
 SFF-8472 SFF-8431 SFF-8432



Applications:



Ordering Information:

Part No.	Specifications							
	Package	Date rate(Gbps)	Wavelength (nm)	Optical Power (dBm)	Sensitivity (dBm)	Temp(°C)	Reach (m)	Connector
HRGSF-T196-M0B	SFP+	10.3125	/	/	/	0~70	30	RJ45
PN	HRGSF-T196-M0B							
Description	10Gbps-T,RJ45, 30m, 0-70°C							

Key Performance

Support 10km~40km application

Low Power consumption,
C-temp<0.6W, E-temp<0.8w,

I-temp<1.3W (CWDM)

Support customized design

(27/41, 29/35, 31/43, 33/45, 51/57, 31/51)

with or without pigtail fiber



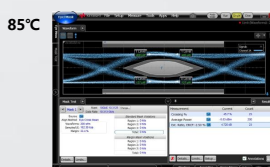
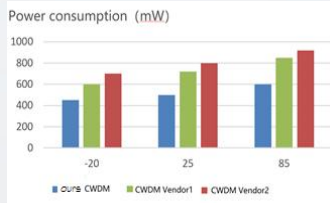
Standards

IEEE802.3ae 10GBASE-SR/SW

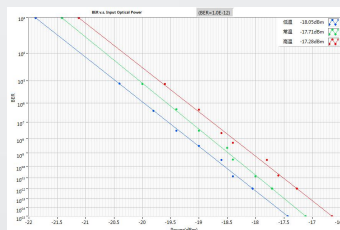
SFF-8472 SFF-8431 SFF-8432

Test:

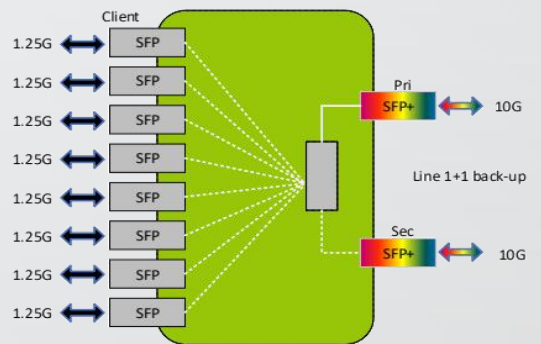
Power consumption



Sensitivity(PIN-ROSA)



Applications:



Ordering Information:

Part No.	Specifications							
	Package	Date rate(Gbps)	Wavelength (nm)	OpticalPower(dBm)	Sensitivity (dBm)	Temp(°C)	Reach (m)	Connector
	SFP+	10.3125	CWDM	/	/	-40~85	40	LC
PN								
Description								

Profile(TDM/CWDM/DWDM/BIDI)

Key Performance

Excellent OSNR&Jitter performance, support

40km~100km OTN

DWDM support 96ch, support customized requirement

Low power consumption , High stability, I-temp<1.8w, C-temp<1.5w

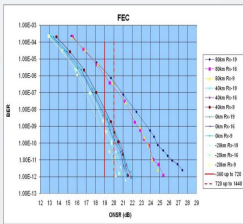
Standards

IEEE802.3ae 10GBASE-SR/SW
SFF-8472 SFF-8431 SFF-8432



Test (DWDM) :

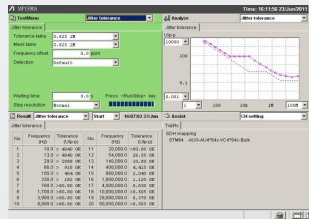
OSNR



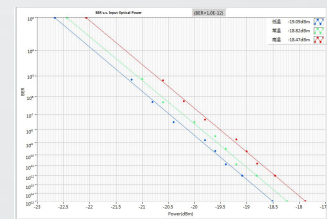
Eye diagram



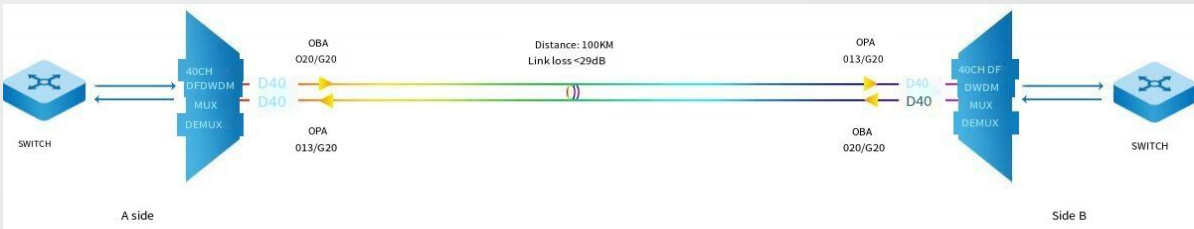
Jitter Toleranc



Sensitivity(PIN-ROSA)



Applications:



Ordering Information:

Part No.	Specifications							
	Package	Date rate(Gbps)	Wavelength (nm)	Optical Power (dBm)	Sensitivity(dBm)	Temp(°C)	Reach (m)	Connector
	SFP28	10.3125	C-bnad	/	/	0~70	80	LC
PN	10G-CWDM/DWDM/BIDI-20/40/80km							
Description	10km, 40km, 80km							



Key Performance

Excellent OSNR&Jitter performance,
support 40km~100km OTN

DWDM support 96ch, support customized
requirement

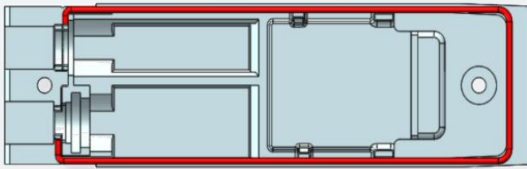
Low power consumption , High stability, I-
temp<1.8w, C-temp<1.5w



Standards

IEEE 802.3cc 25GBASE-LR
SFF-8431 SFF-8432 SFF-8472

Design:

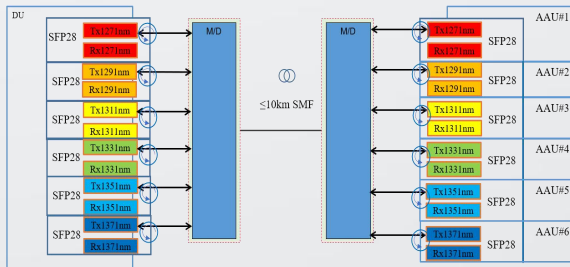


Good EMI performance, with special shield
mechanical design

Latch sink design can good compatible
various cage

Groove glue dropping can easily springback
ring-pull bail latch, latch color can be customized

Applications:



- Support commercial, industrial-grade application
- Support 10~40km (40km with APD)

Original technology:

Intergraded optical circulator in OSA, BIDI can
support CWDM application in single lambda mode

Ordering Information:

Part No.	Specifications							
	Package	Date rate(Gbps)	Wavelength (nm)	OpticalPower (dBm)	SensitivityO MA(dBm)	Temp (°C)	Reach (km)	Connector
HRGS28-D*X1-10BD	SFP28	25.78	1271~1371	-4~2	<-12	-40~85	10	LC
PN	HRGS28-D*X1-20BD							
Description	25Gbps,SMF,10km,-40-85°C							



Key Performance

Support DWDM 96ch, max 20km direct link

Max 80km application with DCM and EDFA

Support I-temp, power consumption

max<1.8W

Check with NPB(Network Packet Broker) and

TAP(Test Access Point) before shipping



Standards

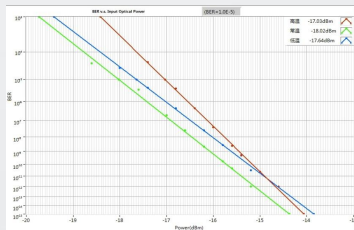
IEEE 802.3cc 25GBASE-LR

SFF-8431 SFF-8432 SFF-8472

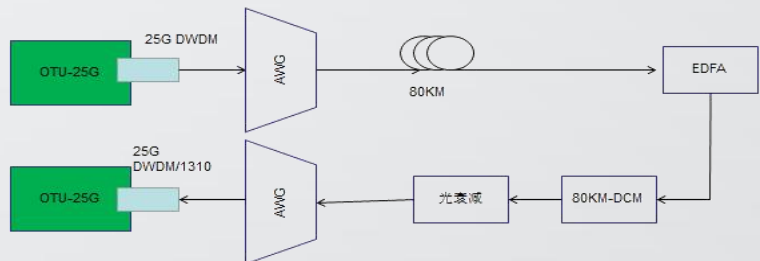
Test : 3-T eye diagram



Excellent sensitivity



Support 80km link with DCM and EDFA



Ordering Information:

Part No.	Specifications							
	Package	Date rate(Gbps)	Wavelength (nm)	OpticalPower (dBm)	SensitivityOM A(dBm)	Temp (°C)	Reach (km)	Connector
HRGS28-D*X1-10BD	SFP28	25.78	As per ITU-T 694.1	0~4	<-14	-40~85	20	LC
PN	HRGS28-D*X1-20BD							
Description	25Gbps,SMF,20km,-40-85°C							

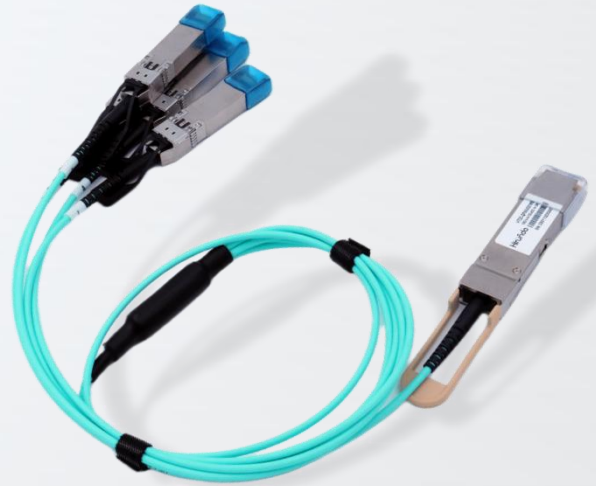


Key Performance

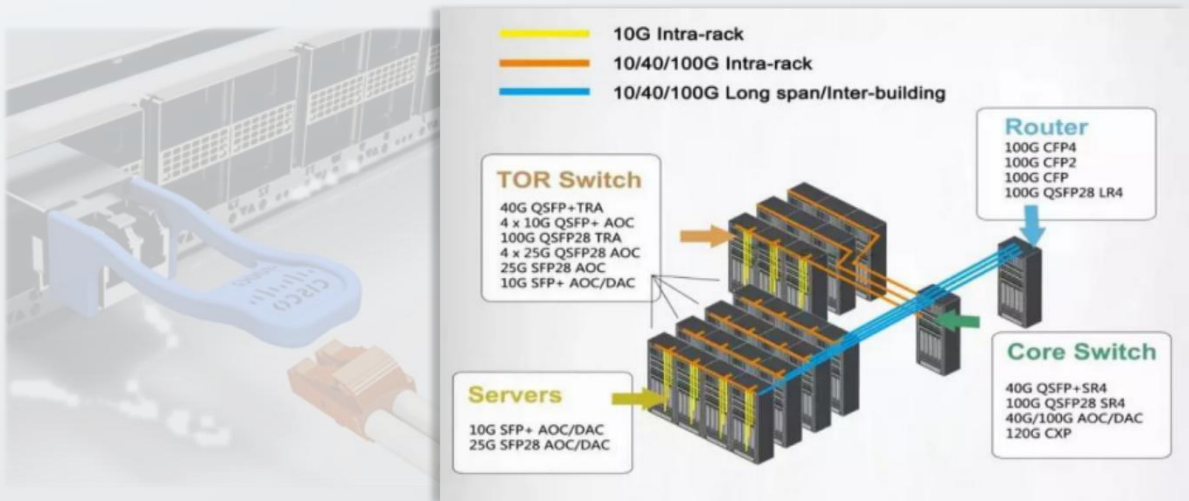
850nm VCSEL laser and PIN photo-detector
 Maximum link length of 70m on OM3 MMF
 and 100m on OM4 MMF
 Digital diagnostics functions are available via
 the I2C interface

Standards

IEEE 802.3by 25GBASE-SR
 IEEE 802.3bm 100GBASE-SR4
 SFF-8431 SFF-8436 SFF-8472
 ROHS



Applications:



Ordering Information:

Part No.	Specifications							
	Package	Date rate(Gbps)	Wavelength (nm)	OpticalPower(dBm)	Bit Error Rate	Temp(°C)	Reach (m)	Connector
HRGOC-QPA5- **01MB	QSFP284* SFP28	103.12	850nm	-7.5~2.5	E-12	0~70	100	AOC
PN	HRGOC-QPA5-**01MB							
Description	100G QSFP28 to 4*SFP28 Active Optical Cables, up to 100m, 0-70°C							

Key Performance

Compatible with IEEE 802.3bj, IEEE 802.3by and InfiniBand EDR

Supports aggregate data rates of 100Gbps

Optimized construction to minimize insertion loss and cross talk

Backward compatible with existing QSFP+ connectors and cages

Pull-to-release slide latch design

26AWG through 30AWG cable

Straight and break out assembly configurations available

Customized cable braid termination limits EMI radiation

Customizable EEPROM mapping for cable signature

RoHS compliant



Standards

100G Ethernet(IEEE 802.3bj)

25G Ethernet(IEEE 802.3by)

InfiniBand EDR

SFF-8665 QSFP+ 28G 4X

Pluggable Transceiver

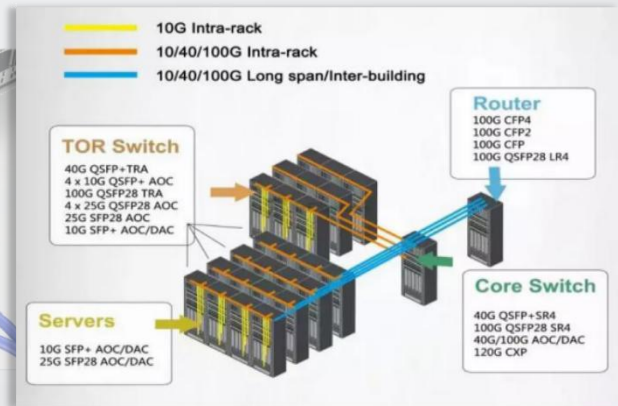
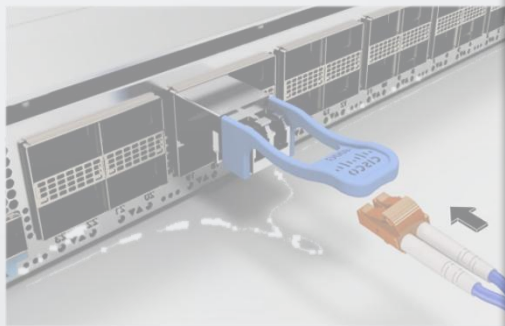
Solution(QSFP28)

SFF-8402 SFP+ 1X 28Gb/s

Pluggable Transceiver

Solution(SFP28)

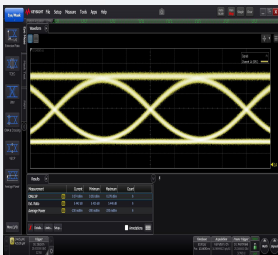
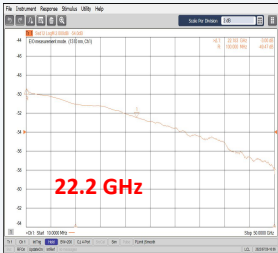
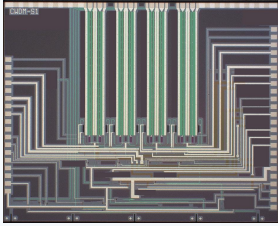
Applications:



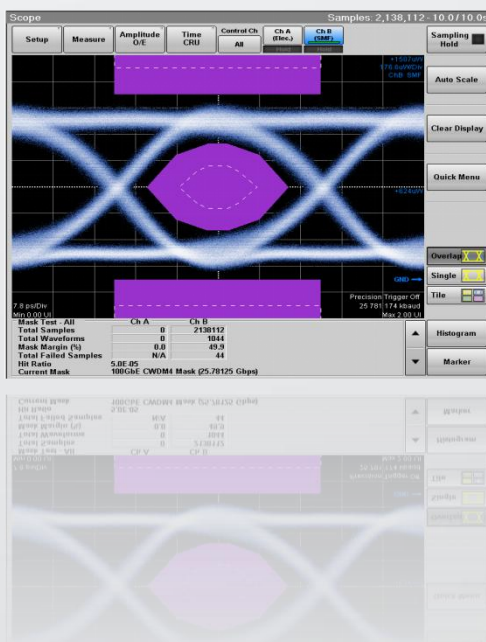
Ordering Information:

Part No.	Specifications						Application
	Package	Datarate (Gbps)	Wire gauge(AWG)	Cable length (unit: m)	Temp (°C)	Others	
HRGDC-QQA5-**01MB	QSFP284*SFP P28	103.12	30 to 26	1~5	0~70	RoHS	100/25 Gigabit Ethernet
PN	HRGDC-QQA5-**01MB						
Description	100G QSFP28-to-4*SFP28 Direct Attach Cables, 30 to 26 AWG, up to 5m, 0-70°C						

Silicon photonic chip



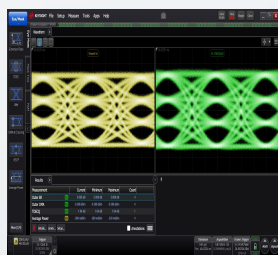
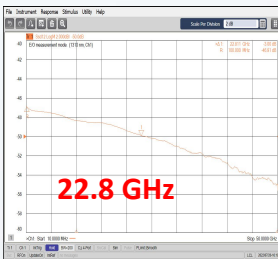
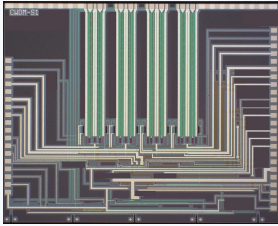
Rate: 4×25 Gbps NRZ	Integrated multiplexer: 1271/1291/1311/1331 nm
Single channel insertion loss: <5.5 dB	Electro-optical bandwidth: >20 GHz
Differential impedance: 100 ohms	Differential drive voltage: 2.0 Vppd
Extinction Ratio: >5 dB	Operating temperature: 0~70 °C



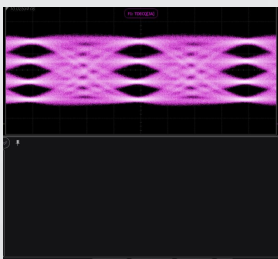
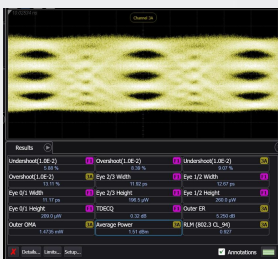
Compliant to the IEEE 802.3bm	Compliant to the QSFP28 MSA specification
4×25.78 Gbps optical interface	4×25.78 Gbps electrical interface
I2C interface with integrated DDM	Link lengths of 2 km, 10 km
Supply voltage: 3.3 V	Power consumption: <3.5 W
LC optical connectors	Operating case temperature: 0~70 °C
RoHS compliant	RoHS compliant

Silicon photonic module

Silicon photonic chip

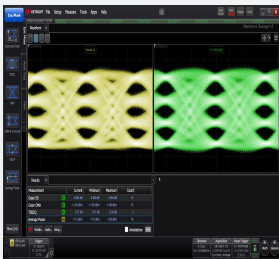
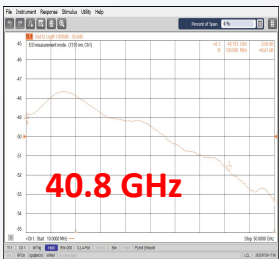
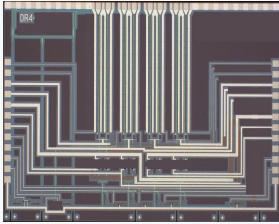


Rate: 4×50 Gbps PAM4	Integrated multiplexer: 1271/1291/1311/1331 nm
Single channel insertion loss: <5.5 dB	Electro-optical bandwidth: >20 GHz
Differential impedance: 100 ohms	Differential drive voltage: 2.0 Vppd
Extinction Ratio: >5 dB	Operating temperature: 0~70 °C

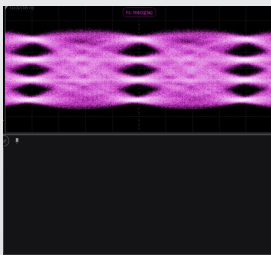
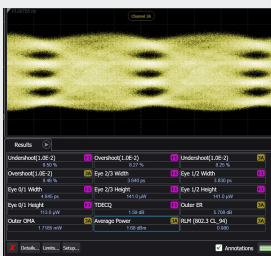


Compliant to the IEEE 802.3bs	Compliant to the QSFP56 MSA specification
4×53.125 Gbps optical interface	4×53.125 Gbps electrical interface
I2C interface with integrated DDM	Link lengths of 2 km, 10 km
Supply voltage: 3.3 V	Power consumption: <6 W
LC optical connectors	Operating case temperature: 0~70 °C
RoHS compliant	RoHS compliant

Silicon photonic chip

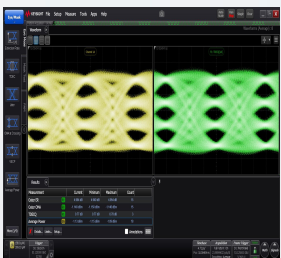
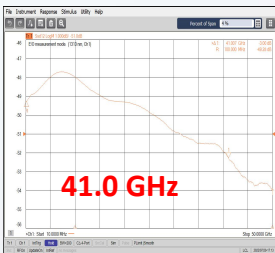
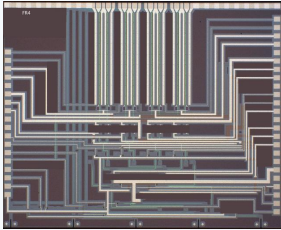


Rate: 4×100 Gbps PAM4	Integrated multiplexer: 1310 nm
Single channel insertion loss: <4.5 dB	Electro-optical bandwidth: >38 GHz
Differential impedance: 60 ohms	Differential drive voltage: 3.5 Vppd
Extinction Ratio: >4.5	Operating temperature: 0~70 °C

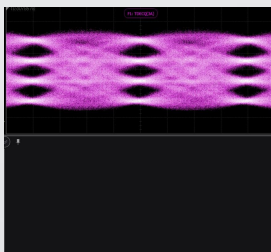
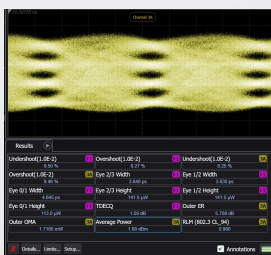


Compliant to the IEEE 802.3bs	Compliant to the QSFP-DD MSA specification
4×106.25 Gbps PAM4 optical interface	8×53.125 Gbps PAM4 electrical interface
I2C interface with integrated DDM	Link lengths of 500 m, 2km
Supply voltage: 3.3 V	Power consumption: <12 W
12-fiber MTP/MPO optical connector	Operating case temperature: 0~70 °C
RoHS compliant	

Silicon photonic chip



Rate: 4×100 Gbps PAM4	Integrated multiplexer: 1271/1291/1311/1331 nm
Single channel insertion loss: <5.5 dB	Electro-optical bandwidth: >38 GHz
Differential impedance: 60 ohms	Differential drive voltage: 3.5 Vppd
Extinction Ratio: >4.5	Operating temperature: 0~70 °C



Compliant to the IEEE 802.3CU	Compliant to the QSFP-DD MSA specification
4×106.25 Gbps PAM4 optical interface	8×53.125 Gbps PAM4 electrical interface
I2C interface with integrated DDM	Link lengths of 2 km, 10km
Supply voltage: 3.3 V	Power consumption: <12 W
LC optical connector	Operating case temperature: 0~70 °C
RoHS compliant	