

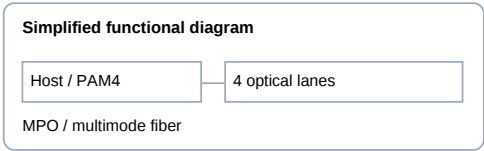
OSFP-SR4-400G-Flat Top

OSFP, 400GBASE-SR4, 850 nm, 50 m, MTP/MPO-12/APC

1. Product overview

400GBASE-SR4 OSFP transceiver for parallel OM4 multimode links up to 50 m using MTP/MPO-12.

Supports 400GAUI-4, 1x400G point-to-point connections and real-time digital diagnostics.



2. Key features

OSFP MSA; IEEE 802.3ck; CMIS; up to 106.25 Gb/s/channel PAM4; single 3.3 V; 8.5 W max in features; MTP/MPO-12 APC; 0 to 70°C.

3. Applications

400G Ethernet; InfiniBand interconnect; 1x400G point-to-point.

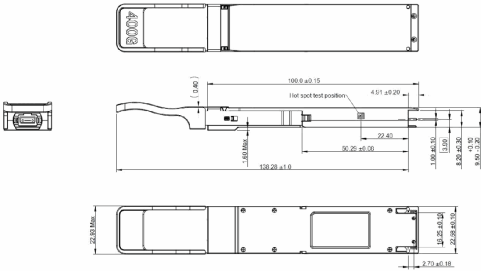
4. Technical data

Parameter	Specification	Parameter	Specification
Power / supply current	12 W / 3.83 A max (electrical table)	Feature power	8.5 W max
Power supply filter	470 nH; 0.25 ohm; 47 µF; 0.1 µF	Absolute maximum ratings	No numerical table supplied

Electrical characteristics, per lane - TX input TP1/TP1a; RX output TP4.

TX input	Specification	RX output	Specification
Differential p-p tolerance	750 mV min	AC common-mode p-p LF/FB	32 / 80 mV max
AC common-mode tolerance LF/FB	3280 mV	Differential p-p short/long	600845 mV max
Return loss	802.3ck Eq.120G-2, dB	Return loss	802.3ck Eq.120G-1, dB
Effective return loss	8.5 dB min	Effective return loss	8.5 dB min
Termination mismatch	10% max	Termination mismatch	8.5 ps min (source)
Stressed input tolerance	802.3ck 120G.3.4.3	Eye height / VEC	15 mV min / 12 dB max
Single-ended tolerance	-0.4 to 3.3 V	DC common-mode	-0.35 to 2.85 V
DC common-mode	-0.35 to 2.85 V	Transition time	Not separately stated
Signaling rate	53.125 ±100 ppm GBd	Signaling rate	53.125 ±100 ppm GBd

Mechanical drawing from source



5. Recommended operating conditions

Parameter	Specification	Parameter	Specification
Case temperature	0 to +70°C	Supply min/typ/max	3.135 / 3.3 / 3.465 V
Lane rate / accuracy	53.125 GBd typ; -100 to +100 ppm	Pre-/post-FEC BER max	2.4x10 ⁻⁴ / 1x10 ⁻¹²
OM4 reach	2-50 m	Host FEC / OM3	Required for maximum reach; 2-30 m

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6. Optical characteristics

Transmitter, each lane	Specification	Receiver, each lane	Specification
Signaling rate / format	53.125 ±100 ppm GBd / PAM4	Signaling rate / format	53.125 ±100 ppm GBd / PAM4
Wavelength	842-948 nm (source)	Wavelength	842-948 nm
RMS spectral width	0.65 nm max	Damage threshold	5 dBm min
Average launch power	-4.6 to +4 dBm	Average receive power	-6.3 to +4 dBm
OMA _{outer} ; M=max(TECQ,TDECQ)	M≤1.8 dB: -2.6 dBm min; 1.8<M≤4.4 dB: -4.4+M dBm min; 3.5 dBm max	Receive OMA _{outer}	3.5 dBm max
TDECQ / TECQ	4.4 / 4.4 dB max	Receiver reflectance	-15 dB max
Overshoot/undershoot	29% max	Sensitivity OMA _{outer}	TECQ≤1.8 dB: -4.4 dBm max; 1.8<TECQ≤4.4 dB: -6.2+TECQ dBm max
TX power excursion	2.3 dBm max	Sensitivity equation	RS=max(-4.4, TECQ-6.2)
Extinction ratio / transition	2.5 dB min / 17 ps max	Stressed sensitivity OMA _{outer}	-1.8 dBm max
TX off / RIN _{14OMA}	-30 dBm max / -132 dB/Hz max	LOS Assert / De-assert	-15 dBm min / -9.2 dBm max
Optical return loss tolerance	14 dB max	LOS hysteresis	0.5 dB min
Encircled flux	≥86% at 19 μm; ≤30% at 4.5 μm	Stress SECQ / aggressor OMA _{outer}	4.4 dB typ / 3.5 dBm typ

Optical notes: RMS width is spectral standard deviation. Encircled flux/aggressor note specifies A1a.2/A1a.3/A1a.4 50 μm fiber per IEC61280-1-4. Damage threshold tolerates continuous modulated input without required operation. Minimum average RX power is informative; below it cannot comply. Sensitivity is informative for transmitter TECQ up to 4.4 dB; TP3 stressed-sensitivity BER is 2.4x10⁻⁴. Stress conditions are not receiver characteristics.

7. Digital diagnostics and management

Parameter	Specification
Monitor absolute error	Temperature -3 to +3°C over operating range; Vcc -0.1 to +0.1 V over full range. Per-channel RX/TX power -2 to +2 dB. Bias -10% to +10% (source unit mA). Fiber variation can add ±1 dB, giving ±3 dB total power accuracy.
Control pins	SCL14 / SDA47: two-wire clock/data, bidirectional. LPWn/PRSn17: low-power/presence. INT/RSTn44: interrupt/reset, multilevel. LVCMOS-I/O serial pins; TX CML-I host input, RX CML-O host output.
60-contact pin map	TX p/n lanes 1-8: 59/58,2/3,56/55,5/6,53/52,8/9,50/49,11/12. RX p/n lanes 1-8: 29/28,32/33,26/25,35/36,23/22,38/39,20/19,41/42. Vcc:15,16,45,46 (+3.3 V). GND:1,4,7,10,13,18,21,24,27,30,31,34,37,40,43,48,51,54,57,60.
Plug sequence	GND 1; Vcc 2; other pins 3.

8. Safety and regulatory

ESD: 1 kV high-speed pins, 2 kV other electrical inputs; MIL-STD-883 Method3015.4/JESD22-A114-A HBM. ESD-protected handling required. Class I/1 per IEC/EN60825-1:2014; 21CFR1040.10/1040.11 exception per IEC60825-1 Ed.3 and Laser Notice56 (May8,2019). Unspecified controls/procedures may cause hazardous radiation.

9. Ordering information

Ordering number	Description
OSFP-400G-SR4	OSFP, 400GBASE-SR4 Flat Top 4x100Gbps, 850 nm, 50 m, MTP/MPO-12/APC