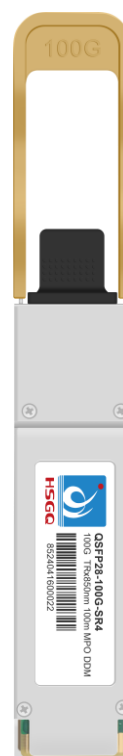


Product Features

- Supports 103.1Gb/s aggregate bit rate
- 4x25Gb/s electrical interface
- Maximum link length of 100m on OM4 Multimode Fiber (MMF)
- Hot-pluggable QSFP28 footprint
- Single MPO 12 receptacle
- Low power Consumption
- RoHS-6 compliant and lead-free
- Support Digital Diagnostic Monitor interface
- Single +3.3V power supply
- Compliance QSFP28 MSA、IEEE802.3bm、SFF-8636、RoHS
- Case operating temperature:

Commercial: 0°C to +70°C



Applications

- 100GBASE-SR4 100G Ethernet

Product specifications

(1) Absolute Maximum Ratings

Parameter	Symbol	Min	Typ	Max	Units	Notes
Storage Temperature	TS	-40		85	°C	
Storage Ambient Humidity	HA	0		85	%	
Maximum Supply Voltage	VCC	-0.5		3.6	V	
Receiver Damage Threshold	/	+3.4			dBm	
Lead Soldering Temperature/Time	TSOLD			260/10	°C/sec	2
Lead Soldering Temperature/Time	TSOLD			360/10	°C/sec	3

Note:

- 1、Exceeding any of these values may immediately damage the device.
- 2、Suitable for wave soldering.
- 3、Only for soldering by iron.

(2) General Product Characteristics

Parameter	Symbol	Min	Typ	Max	Units	Notes
Bit Rate(all wavelength combined)	BR			103.1	Gb/s	1
Bit Error Ratio(pre-FEC)	BER			10 ⁻⁵		2
Link distance on OM3 MMF	d			70	meters	3
Link distance on OM4 MMF	d			100	meters	3

Note:

- 1、 Supports 100GBASE-SR4 per IEEE 802.3bm.
- 2、 Tested with a PRBS 231-1 test pattern.
- 3、 Requires FEC on the host to support maximum distance, per 100GBASE-SR4.

(3) Optical and Characteristics

Parameter	Symbol	Min	Typ	Max	Unit	Notes
Transmitter(per lane)						
Average Output Power per lane	POUT	-6		2.4	dBm	
Extinction Ratio	ER	2			dB	
Center Wavelength	λ C	840		860	nm	
RMS Spectral Width	σ			0.6	nm	
Transmitter OFF Output Power	POff			-30	dBm	
Transmitter eye mask definition {X1,X2,X3,Y1,Y2,Y3}	/	{0.3,0.38,0.45,0.35,0.41,0.5}				1
Receiver(per lane)						
Input Optical Wavelength	λ IN	840		860	nm	
Rx Sensitivity(OMA) per lane @BER=5E-5	RSENS			-10.3	dBm	2
Input Saturation Power (Overload)	PSAT	+2.4			dBm	
Receiver Reflectance	Rfl			-12	dBm	
Loss of Signal Assert	PA	-30			dBm	
Loss of Signal De-assert	PD			-12	dBm	
LOS Hysteresis	PD - PA	0.5			dB	

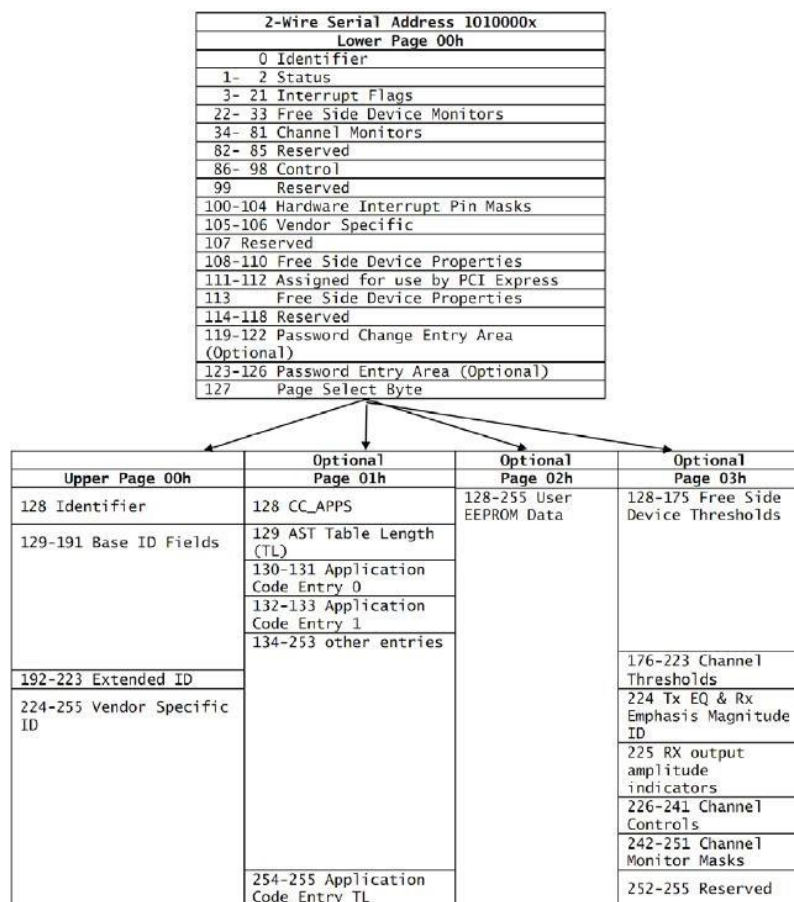
Note:

- 1、 Hit Ratio 1.5x10⁻³ hit/sample.
- 2、 Measured with PRBS 2³¹-1 test pattern 225.78125Gbps.BER=E-12.

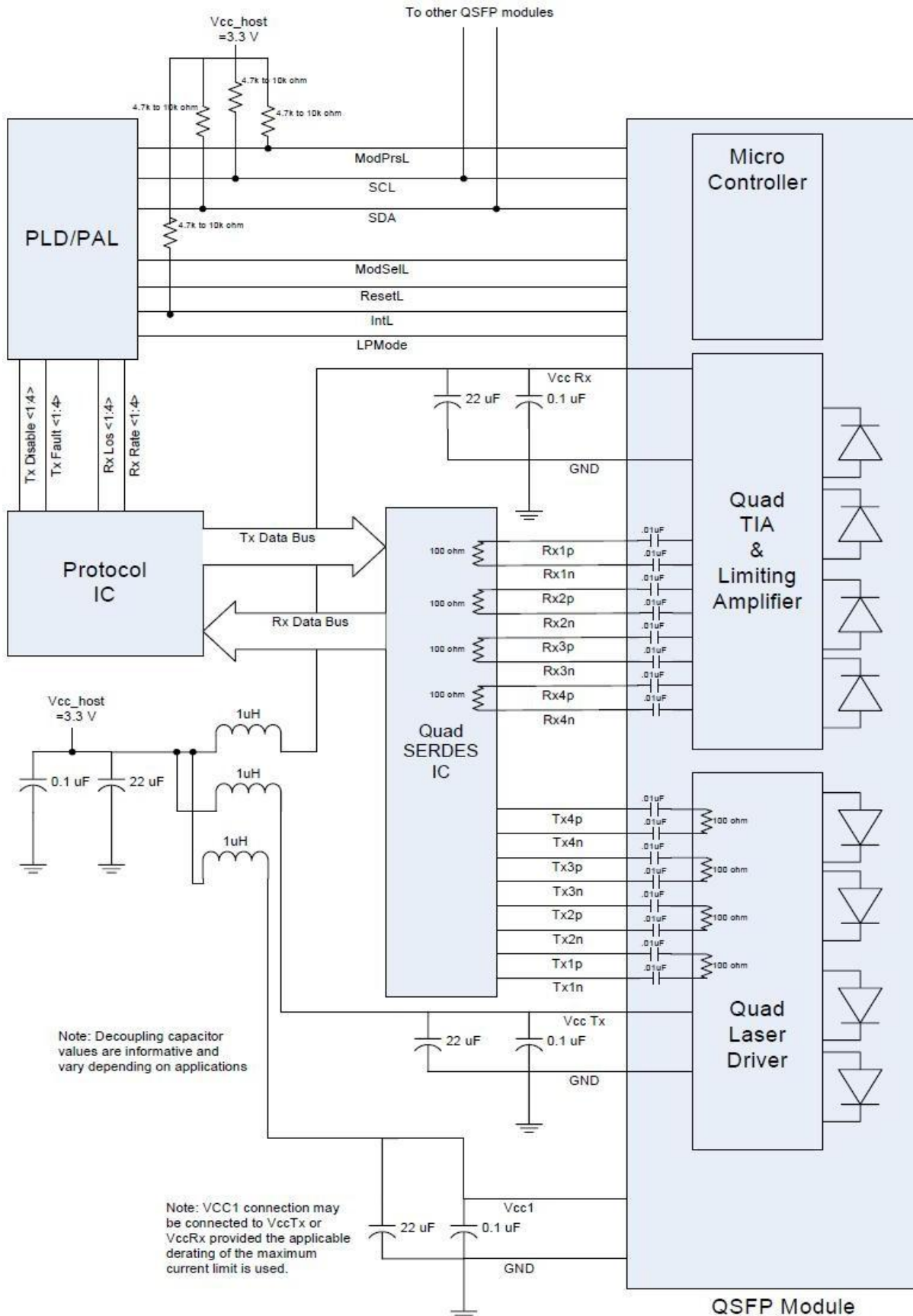
(4) Electrical Characteristics

Parameter	Symbol	Min	Typ	Max	Unit	Notes
Supply Voltage	VCC1, VCCTX, VCCR _X	3.15		3.45	V	
Supply Current	ICC			750	mA	
Transmitter (Module Input)						
Input different impedance	R _{in}	90	100	110	Ω	
Single ended input voltage tolerance	V _{inT}	-0.3		4.0	V	
Single ended data input swing	V _{in,pp}	200		1000	mV	
Receiver (Module Output)						
Output different impedance	R _{out}	90	100	110	Ω	
Single ended data output swing	V _{out,pp}	200		1000	mV	
Single-ended output voltage	V _{outR}	-0.3		4.0	V	

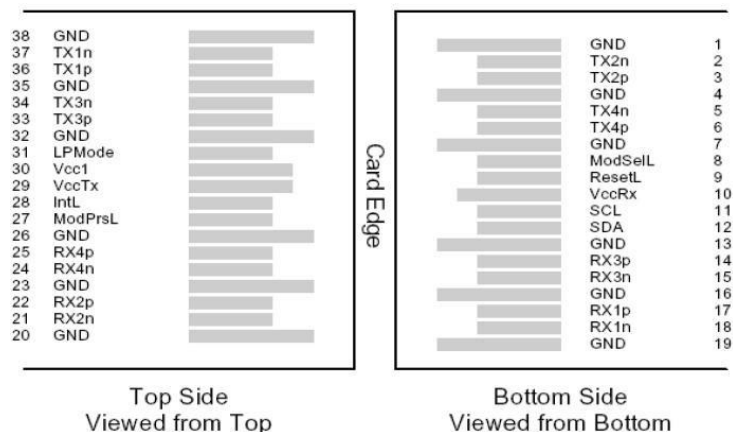
(5) Digital Diagnostic Functions



(6) Recommended Interface Circuit



(7) Pin Assignment and Description



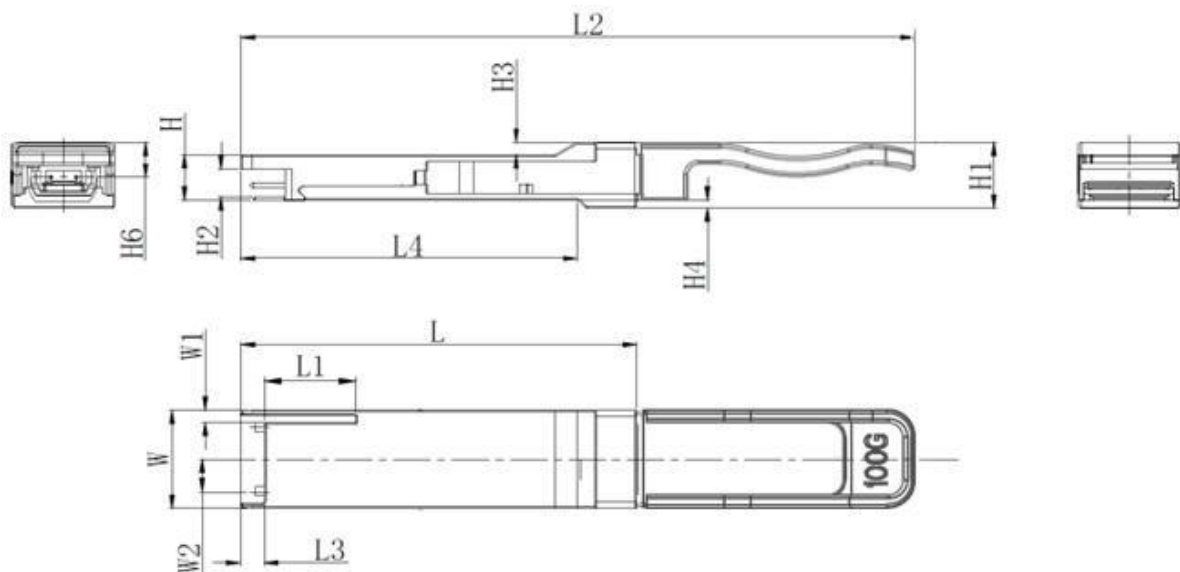
PIN Definition			
PIN	Symbol	Description	Notes
1	GND	Ground	1
2	Tx2n	Transmitter Inverted Data Input	
3	Tx2p	Transmitter Non-Inverted Data Input	
4	GND	Ground	1
5	Tx4n	Transmitter Inverted Data Input	
6	Tx4p	Transmitter Non-Inverted Data Input	
7	GND	Ground	1
8	ModSel1L	Module Select	
9	ResetL	Module Reset	
10	Vcc Rx	+3.3V Power supply receiver	
11	SCL	2-wire serial interface clock	
12	SDA	2-wire serial interface data	
13	GND	Ground	1
14	Rx3p	Receiver Non-Inverted Data Output	
15	Rx3n	Receiver Inverted Data Output	
16	GND	Ground	1
17	Rx1p	Receiver Non-Inverted Data Output	
18	Rx1n	Receiver Inverted Data Output	
19	GND	Ground	1
20	GND	Ground	1
21	Rx2n	Receiver Inverted Data Output	
22	Rx2p	Receiver Non-Inverted Data Output	
23	GND	Ground	1
24	Rx4n	Receiver Inverted Data Output	
25	Rx4p	Receiver Non-Inverted Data Output	

26	GND	Ground	1
27	ModPrSL	Module Present	
28	IntL	Interrupt	
29	Vcc Tx	+3.3V Power supply transmitter	
30	Vcc1	+3.3V Power Supply	
31	LPMode	Low Power Mode	
32	GND	Ground	1
33	Tx3p	Transmitter Non-Inverted Data Input	
34	Tx3n	Transmitter Inverted Data Input	
35	GND	Ground	1
36	Tx1p	Transmitter Non-Inverted Data Input	
37	Tx1n	Transmitter Inverted Data Input	
38	GND	Ground	1

Note:

- 1、Circuit ground is internally isolated from chassis ground.

(8) Mechanical Specifications



Unit: mm

	L	L1	L2	L3	L4	W	W1	W2	H	H1	H2	H3	H4	H5	H6
Max	72.2	-	-	4.35	61.4	18.45	-	6.2	8.6	12.4	5.35	2.5	1.6	2	-
TYPE	72	-	121	4.2	61.2	18.35	-	-	8.5	12.2	5.2	2.3	1.5	1.8	6.55
Min	68.8	16.5	-	4.05	61	18.25	2.2	5.8	8.4	12	5.05	2.1	1.3	1.6	-

Ordering Information

Model	Specification Description
QSFP28-100G-SR4	QSFP28 103.125G/850nm/100m(OM4)/MPO 1X12/DDM/multi-mode/0 ~ 70℃