LinkPro™

LPJMLM85-S10C

SFP28 25Gb/s 850nm 100m DDM

PRODUCT FEATURES

- Up to 25.7813Gbps Data Links
- 850nm VCSEL laser transmitter and PIN receiver
- Maximum link length of 70m on OM3 Multimode Fiber (MMF) and 100m on OM4 MMF
- Hot-pluggable SFP28 footprint
- Duplex LC receptacles
- Low power dissipation
- RoHS compliant and lead-free
- Support Digital Diagnostic Monitor interface
- Single +3.3V power supply
- 0°C to +70°C case operating temperature

APPLICATIONS

- 25GBASE-SR Ethernet

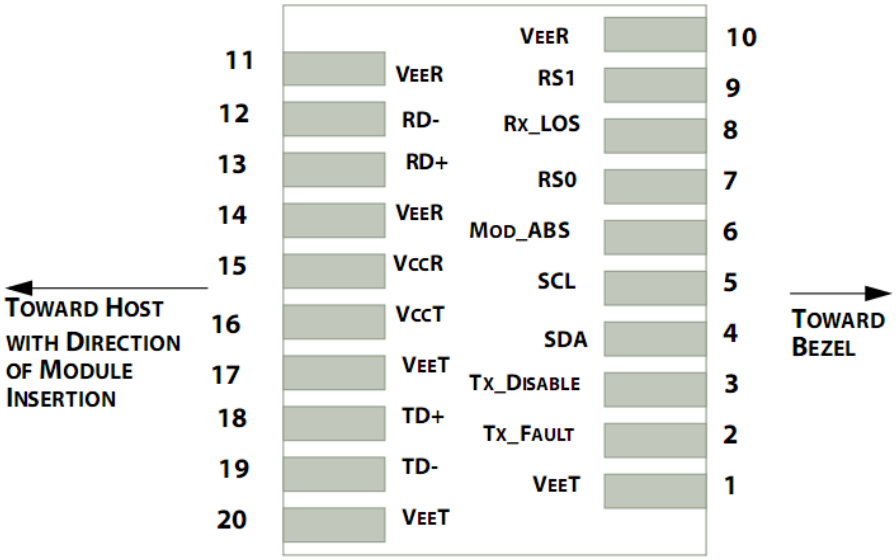
Compliance

- SFF-8472
- SFF-8402
- SFF-8432
- SFF-8431

Ordering information

Part No.	Bit Rate (Gbps)	Laser (nm)	Distance	Fiber Type	DDMI	Connector	Temp
LPJMLM85-S10C	25.78125	850	70M OM3, / 100M OM4;	MMF	YES	LC	0℃~+70℃

I. Pin Diagram



Pinout of Connector Block on Host Board

II. Pin Descriptions

Pin	Symbol	Name/Description	Ref.
1	V_{EET}	Transmitter Ground (Common with Receiver Ground)	1
2	T_{FAULT}	Transmitter Fault.	2
3	T_{DIS}	Transmitter Disable. Laser output disabled on high or open.	3
4	SDA	2-wire Serial Interface Data Line	4
5	SCL	2-wire Serial Interface Clock Line	4
6	MOD_ABS	Module Absent. Grounded within the module	4
7	RS0	No connection required	
8	LOS	Loss of Signal indication. Logic “0” indicates normal operation.	5
9	RS1	No connection required	
10	V_{EER}	Receiver Ground (Common with Transmitter Ground)	1

11	V_{EER}	Receiver Ground (Common with Transmitter Ground)	1
12	RD-	Receiver Inverted DATA out.AC Coupled	
13	RD+	Receiver Non-inverted DATA out.AC Coupled	
14	V_{EER}	Receiver Ground (Common with Transmitter Ground)	1
15	V_{CCR}	Receiver Power Supply	
16	V_{CCT}	Transmitter Power Supply	
17	V_{EET}	Transmitter Ground (Common with Receiver Ground)	1
18	TD+	Transmitter Non-Inverted DATA in. AC Coupled.	
19	TD-	Transmitter Inverted DATA in. AC Coupled.	
20	V_{EET}	Transmitter Ground (Common with Receiver Ground)	1

Notes:

1. Circuit ground is internally isolated from chassis ground.
2. TFAULT is an open collector/drain output, which is pulled up with a 4.7kΩ – 10kΩ resistor on the host board, but is grounded inside the SFP+ cable plug.
3. Laser output disabled on TDIS >2.0V or open, enabled on TDIS <0.8V.
4. Should be pulled up with 4.7kΩ – 10kΩ on host board to a voltage between 2.0V and 3.6V. MOD_ABS pull line low to indicate module is plugged in.
5. LOS is open collector output. Should be pulled up with 4.7kΩ – 10kΩ on host board to a voltage between 2.0V and 3.6V. Logic 0 indicates normal operation; logic 1 indicates loss of signal.

III. Absolute Maximum Ratings

Parameter	Symbol	Min	Type	Max	Unit	Ref.
Maximum Supply Voltage	Vcc	-0.5		3.6	V	
Storage Temperature	TS	-40		85	℃	1
Case Operating Temperature	TOP	0		70	℃	
Relative Humidity	RH	0		85	%	2

Notes1. Non-condensing.

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IV. Optical Characteristics (TOP = 0°C to 70°C, VCC = 3.3 ± 5% Volts)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Remark
Transmitter						
Center Wavelength	λc	840	850	860	nm	
RMS Spectral Width	Pm			0.6	nm	
Average Output Power	Pavg	-8.4		2.4	dBm	
Optical Modulation Amplitude (OMA)	Poma	-6.4		3	dBm	
Extinction Ratio	ER	2			dB	
Transmitter Dispersion Penalty	TDEC			4.3	dB	
Optical Return Loss Tolerance	TOL			12	dB	
Transmitter OFF Output Power	POff			-30	dBm	
Transmitter eye mask definition {X1, X2, X3, Y1, Y2, Y3}, Hit ratio 1.5E-3		{0.3, 0.38, 0.45, 0.35, 0.41, 0.5}				
Receiver						
Center Wavelength	λc	840	850	860	nm	
Receiver Stress Sensitivity, OMA				-5.2	dBm	
Receiver Sensitivity, Average Power				-10.3	dBm	
Receiver Reflectance	Rfl			-26	dBm	
Loss of Signal Assert	P_A	-30			dBm	
Loss of Signal De-assert	P_D			-13	dBm	
LOS Hysteresis	P_D- P_A	0.5			dB	

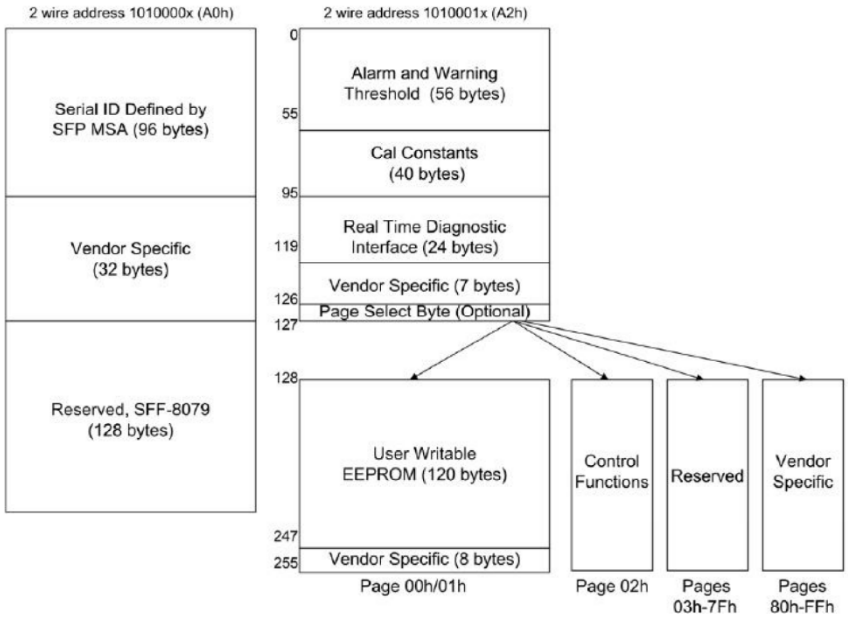
V. \Electrical Characteristics (TOP = 0°C to 70°C, VCC = 3.3 ± 5% Volts)

Parameter	Symbol	Min	Type	Max	Unit	Ref.
Supply Voltage	Vcc	3.135	3.3	3.465	V	
Supply Current	Icc			300	mA	
Transmitter						
Input differential impedance	Rin		100			1
Differential data input swing	Vin, pp	200		1000	mV	
Transmit Disable Voltage	V_D	2		V_{CC}	V	
Transmit Enable Voltage	V_{EN}	Vee		Vee+0.8	V	
Receiver						
Differential data output swing	Vout, pp	200		1000	mV	2
LOS Fault	V_{LOS_fault}	2		Vcc	V	3
LOS Normal	V_{LOS_norm}	Vee		Vee+0.8	V	3
Power Supply Noise Tolerance	V_{CCT}/V_{CCR}	Per SFF-8431 Rev 4.1			mVpp	

Notes:

1. Connected directly to TX data input pins.AC coupling from pins into laser driver IC.
2. Into 100Ω differential termination.
3. Measured with Module Compliance Test Board and OMA test pattern. Use of four 1’s and four 0’s in sequence in the PRBS^9 is an acceptable alternative. SFF-8431 Rev 4.1

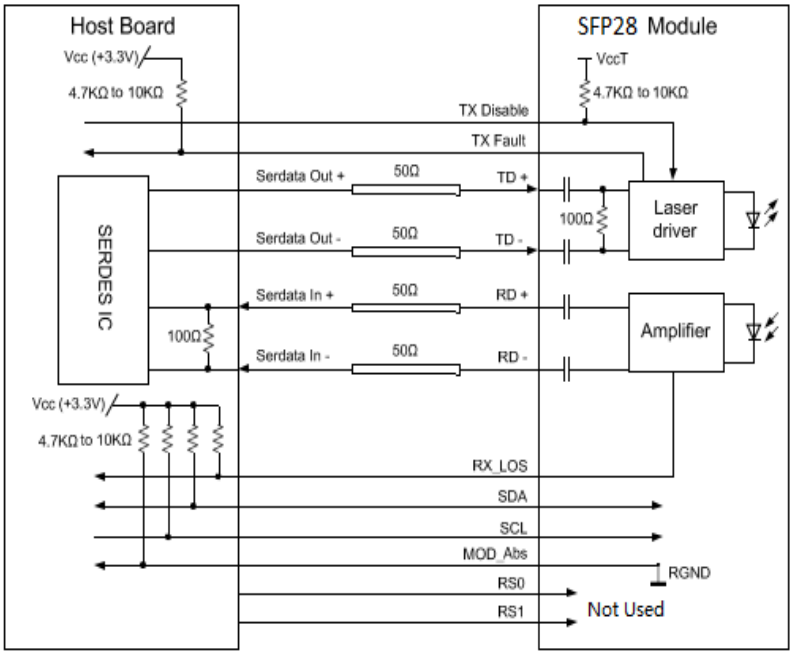
VI. Digital Diagnostic Memory Map



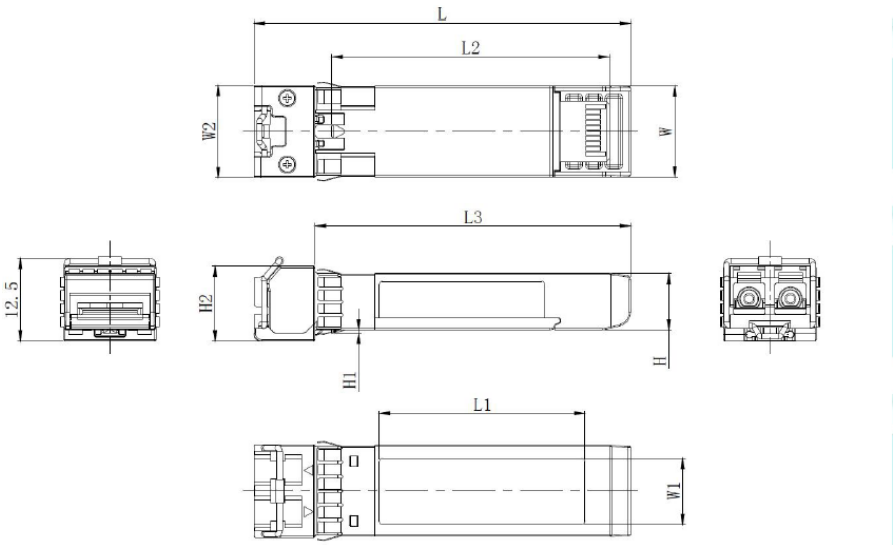
VII. Digital Diagnostic Monitoring Information

Parameter	Unit	Accuracy
Case Temperature	℃	±3
Supply Voltage	V	±3%
Tx Bias Current	mA	±10%
Tx Optical Power	dB	±3
Rx Optical Power	dB	±3

VIII.Recommended Interface Circuit



IX. Mechanical Dimensions



Unit: mm

	L	L1	L2	L3	W	W1	W2	H	H1	H2
MAX	56.9	31.2	41.95	47.7	13.8	10.2	14.0	8.6	0.6	11.5
Typical	56.7	31.0	41.80	47.5	13.7	10.0	-	8.5	0.5	11.3
MIN	56.5	30.8	41.65	47.3	13.5	9.8	-	8.4	0.4	11.1