DATASHEET

RAYMARK: RM-SFP-LX2

1.25Gb/s SFP (Small Form Pluggable) Long Wavelength (1310nm) Transceiver

Overview

Raymark RM-SFP-LX2 SFP optical transceivers are based on the Gigabit Ethernet IEEE 802.3 standard and Fibre Channel FC-PI Rev.5.0, providing a fast and reliable interface for GE/FC applications. The product implements digital diagnostics via a 2-wire serial bus, compliant with the INF-8074i Small Form Factor Pluggable Multi-Source Agreement (MSA) and SFF-8472 standard.

Product Features

- Supports data rates of 1.25Gb/s
- Compliant with SFP MSA
- Hot-pluggable SFP footprint
- 1310nm FP laser transmitter
- Duplex LC connector
- Built-in digital diagnostic functions
- Up to 20km on 9/125um SMF
- Single power supply 3.3V
- RoHS Compliant
- Class 1 laser product complies with EN 60825-1
- Operating temperature range: Commercial Level 0°C to 70°C

Applications

- 1.25Gb/s Gigabit Ethernet
- 1.063Gb/s Fiber Channel

Ordering Information

Part Number	Description	Color on Clasp
RM-SFP-LX2	GE/FC SFP 1310nm LC Connectors 20km on SMF, with DOM function, commercial temp	Blue

General Specifications

Parameter	Symbol	Min	Typ	Max	Unit	Remarks
Data Rate	DR		1.25		Gb/s	1
	DR		1.062		Gb/s	2
Bit Error Rate	BER			10^{-12}		
Operating Temperature	Tc	0		70	°C	3
Storage Temperature	Tsto	-40		85	°C	4
Supply Current	Icc		175	300	mA	5
Input Voltage	Vcc	3.14	3.3	3.46	V	
Maximum Voltage	Vmax	-0.5		4	V	5

Notes:

1. Case temperature
2. Ambient temperature
3. For electrical power interface

Transmission distance

Data Rate	Optical Fiber type	Distance range (km)	Remark
1.25Gb/s	9/125um Singel mode fiber	20	

Optical – Characteristics – Transmitter

V_{CC}=3.14V to 3.46V, T_C

Parameter	Symbol	Min	Typ	Max	Unit	Remarks
Output Optical Power	P_{TX}	-9.5		-3	dBm	1
Optical Center Wavelength	λ_C	1260	1310	1360	nm	
Extinction Ratio	ER	9			dB	
Spectral Width (RMS)	$\Delta\lambda$			5	nm	
Optical Rise/Fall Time (20%-80%)	t_r/t_f		250	300	ps	

Notes: Class 1 Product

Optical – Characteristics – Receiver

V_{CC}=3.14V to 3.46V, T_C

Parameter	Symbol	Min	Typ	Max	Unit	Remarks
Receiver Overload	P_{OL}	0			dBm	
Optical Center Wavelength	λ_C	1260		1600	nm	
Receiver Sensitivity	$R_{X\ SEN}$			-24	dBm	
LOS Assert	LOS_A	-35			dBm	
LOS De-Assert	LOS_D			-26	dBm	
LOS Hysteresis	LOS_H	0.5			dB	

Electrical – Characteristics – Transmitter

V_{CC}=3.14V to 3.46V, T_C

Parameter	Symbol	Min	Typ	Max	Unit	Remarks
Input differential impedance	R_{IN}		100		Ω	
Single ended data input swing	V_{IN_PP}	250		1200	mV	
Transmit disable voltage	V_D	V_{CC}-1.3		V_{CC}	V	
Transmit enable voltage	V_{EN}	V_{EE}		V_{EE}+0.8	V	
Transmit disable assert time				10	μs	

Electrical – Characteristics – Receiver

V_{CC}=3.14V to 3.46V, T_C

Parameter	Symbol	Min	Typ	Max	Unit	Remarks
Single ended data output swing	V_{OUT_PP}	300	400	800	mV	
Data output rise/fall time (20%-80%)	t_r/t_f			300	ps	
LOS Fault	V_{LOS_A}	V_{CC}-0.5		V_{CC_HOST}	V	
LOS Normal	V_{LOS_D}	V_{EE}		V_{EE}+0.5	V	

RX Squelch	Method of RX squelch implemented	Remarks
Not implemented	N.A	

DDM Threshold Information

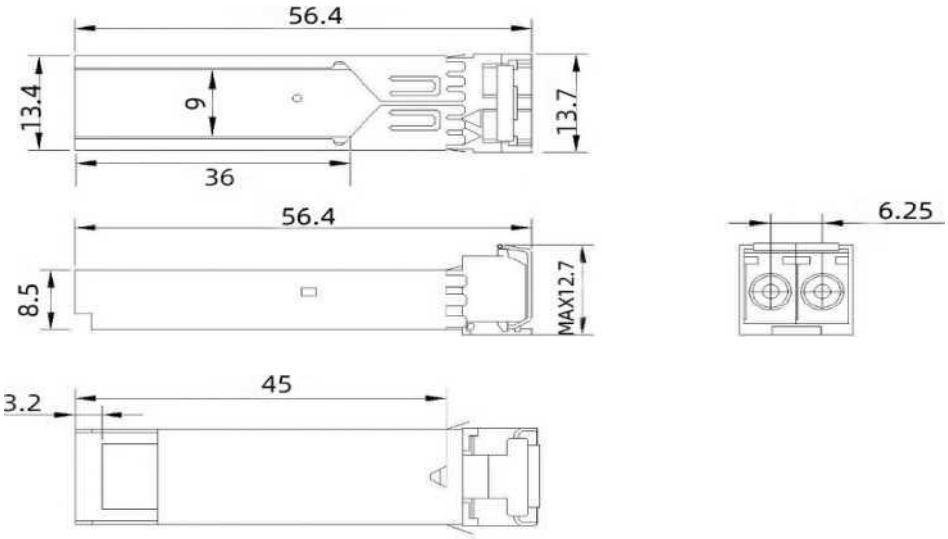
Parameter	Alarm Threshold		Warning Threshold	
	High Value	Low Value	High Value	Low Value
Temp (°C)	75 (4B 00)	-5 (FB 00)	70 (46 00)	0(00 00)
Voltage(V)	3.63(8D CC)	2.97 (74 04)	3.46 (87 28)	3.13 (7A 44)
Bias Current(mA)	100 (C3 50)	2 (03 E8)	80 (9C 40)	4 (07 D0)
Tx Power(dBm)	-2.21 (17 7E)	-10.47 (03 81)	-3.00 (13 93)	-9.5 (04 62)
Rx Power(dBm)	3.01 (4E 20)	-30.46 (00 09)	0.00 (27 10)	-27.21 (00 13)

Parameter	Symbol	Accuracy	Units	Report Range		Unit	Remarks
Internal Calibration							
Temperature	Temp	±5	°C	-40	95	°C	
Voltage	V_{CC}	±0.1	V	2.7	3.9	V	
Bias Current	Ibias	±10	%	1	80	mA	
Tx Power	P_{TX}	±3	dB	-12	0	dBm	
Rx Power	P_{RX}	±3	dB	-30	0	dBm	

Product weight

The module of weight：17.0 Grams of each
Dust cap weight：0.95 Grams of each

Dimensions



ALL DIMENSIONS ARE ±0.2mm UNLESS OTHERWISE SPECIFIED
UNIT: mm

Electrical Pad Layout

Top of Board

Bottom of Board