

SFPB-53-100-BX



Features

- Compliant with OC3/STM-1, 100BaseBX and 10BaseBX
- Simplex SC Connector
- Digital Diagnostic SFF-8472 Compliant
- 14 dB Minimum Power Budget
- 20 Km Typical reach
- Commercial and Industrial Temperature Available
- Single 3.3V Supply
- 1550nm FP Laser
- Bellcore GR-468 Compliant

General Operating

Parameter	Symbol	Min.	Typ.	Max.	Unit
Supply Voltage	V_{cc}	3.135	3.3	3.465	V
Total Current	I_{cc}	-	-	300	mA
Power Supply Noise Rejection		100	-	-	mVp-p
Operating Temperature(case)	T_{opr}	-5	-	70	°C
Operating Temperature(case)(-T)	T_{opr}	-40	-	85	°C
Storage Temperature	T_{stg}	-40	-	85	°C
Data Rate	DR	10	-	155	Mbps

Transmitter Specifications, Optical

Parameter	Symbol	Min	Typical	Max	Unit
Optical power	P_{op}	-14	-11	-8	dBm
Optical crosstalk	XT	-	-	-45	dB
Average Launch power of off Tx	P_{off}	-	-	-30	dBm
Extinction Ratio	ER	9	-	-	dB
Eye Mask		IEEE 802.3 and SONET/SDH Compliant			
Optical Jitter generation	J_{gen}	-	-	0.002	UI
Optical Rise time (20% to 80% values)	t_r	-	-	500	ps
Optical Fall time (20% to 80% values)	t_f	-	-	500	ps
Mean Wavelength	λ	1530	-	1580	nm
Maximum RMS width (σ)	σ	-	-	4	nm
Relative Intensity Noise	RIN	-	-	-120	dB/Hz

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Transmitter Specifications , Electrical

Parameter	Symbol	Min	Typical	Max	Unit
Input Differential Impedence	R_{in}	80	100	120	Ω
PECL Single Ended data input swing	$V_{in, p-p}$	250	-	1200	mV
TxFault_Fault	V_{fault}	2	-	V_{cc}	V
TxFault_Normal	V_{normal}	V_{ee}	-	$V_{ee} + 0.5$	V
TxDisable_Disable	V_d	2	-	V_{cc}	V
TxDisable_Enable	V_{en}	V_{ee}	-	$V_{ee} + 0.8$	V

Receiver Specifications, Optical

Parameter	Symbol	Min	Typical	Max	Unit
Receiver Power Low ^b	$R_{sens, low}$	-	-30	-28	dBm
Receiver Power High	$R_{sens, high}$	-8	-	-	dBm
Damage Threshold for Receiver	$P_{in, damage}$	-	-	4	dBm
Wavelength	λ	1260	1310	1360	nm
LOS Assert	-	-38	-	-	dBm
LOS De-assert	-	-	-	-28	dBm
LOS hysteresis	-	1	-	-	dB

b) at 10^{-10} BER, PRBS 2²³-1

Electrical Output

Parameter	Symbol	Min	Typical	Max	Unit
PECL Single ended data output swing	$V_{out, p-p}$	400	-	800	mV
Data output rise time	t_r	-	-	500	ps
Data output fall time	t_f	-	-	500	ps

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Timing and Electrical

Parameter	Symbol	Min	Typical	Max	Unit
Tx Disable Negate time	t _{on}	-	-	1	ms
Tx Disable assert time	t _{off}	-	-	10	μs
Time to initialize, including reset of Tx fault	t _{init}	-	-	300	ms
Tx fault Assert time	t _{fault}	-	-	100	μs
Tx Disable to reset	t _{reset}	10	-	-	μs
LOS Assert time	t _{loss_on}	-	-	100	μs
LOS De-assert time	t _{loss_off}	-	-	100	μs
Serial ID Clock Rate	f _{serial_clock}	-	-	100	KHz
RX_LOS Voltage (high)	Rx_LOS _H	2	-	-	V
RX_LOS Voltage (low)	Rx_LOS _L	-	-	0.8	V
LOS output voltage-Fault	V _{LOS fault}	2	-	V _{cc}	V
LOS output voltage-Normal	V _{LOS normal}	V _{ee}	-	V _{ee} + 0.5	V
MOD_DEF (0:2)-High	V _h	2	-	V _{cc}	V
MOD_DEF (0:2)-Low	V _l	V _{ee}	-	V _{ee} + 0.5	V

Diagnostics

Parameter	Range	Accuracy	Unit	Calibration	Bit Value	Formula
Temperature(-T)	-40 to 85	±3	°C	Internal	1/256 C	Tc(C) = Tad(16 bit signed twos complement)/256
Temperature	-5 to 70	±3	°C	Internal	1/256 C	Tc(C) = Tad(16 bit signed twos complement)/256
Voltage	0 to Vcc	.1	V	Internal	100μV	V(Volts) = Vad(16 bit unsigned integer)*0.1
Bias Current	0 to 120	5	mA	External	-	I(mA) = Islope * Iad(16 bit unsigned integer)+Ioffset
Tx Power	0 to 0.5	±3dB	mW	External	-	Tx_PWR(μW) = Tx_PWRslope*Tx_PWRad(16 bit unsigned integer)+Tx_PWRoffset
Rx Power	-24 to -8 dBm	±3dB	mW	External	-	Rx_PWR(μW) = A0+A1*x+A2*x^2+A3*x^3+A4*x^4

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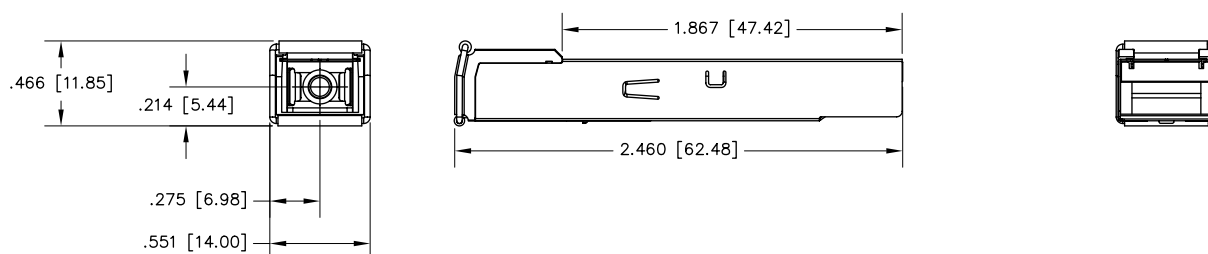
EEPROM Serial ID

Name of Field	Discription of Field	Address	Hex	ASCII
Vendor Name	SFPVendor name (ASCII)	20	4C	L
		21	55	U
		22	4D	M
		23	49	I
		24	4E	N
		25	45	E
		26	4E	N
		27	54	T
Vendor OUI	IEEE vendor OUI code for Luminent Inc.	37	00	
		38	06	
		39	B5	
Vendor PN	Part number in ASCII, e.g. SFPB-53-100-BX	40	53	S
		41	46	F
		42	50	P
		43	42	B
		44	35	5
		45	33	3
		46	31	1
		47	30	0
		48	30	0
		49	42	B
		50	58	X

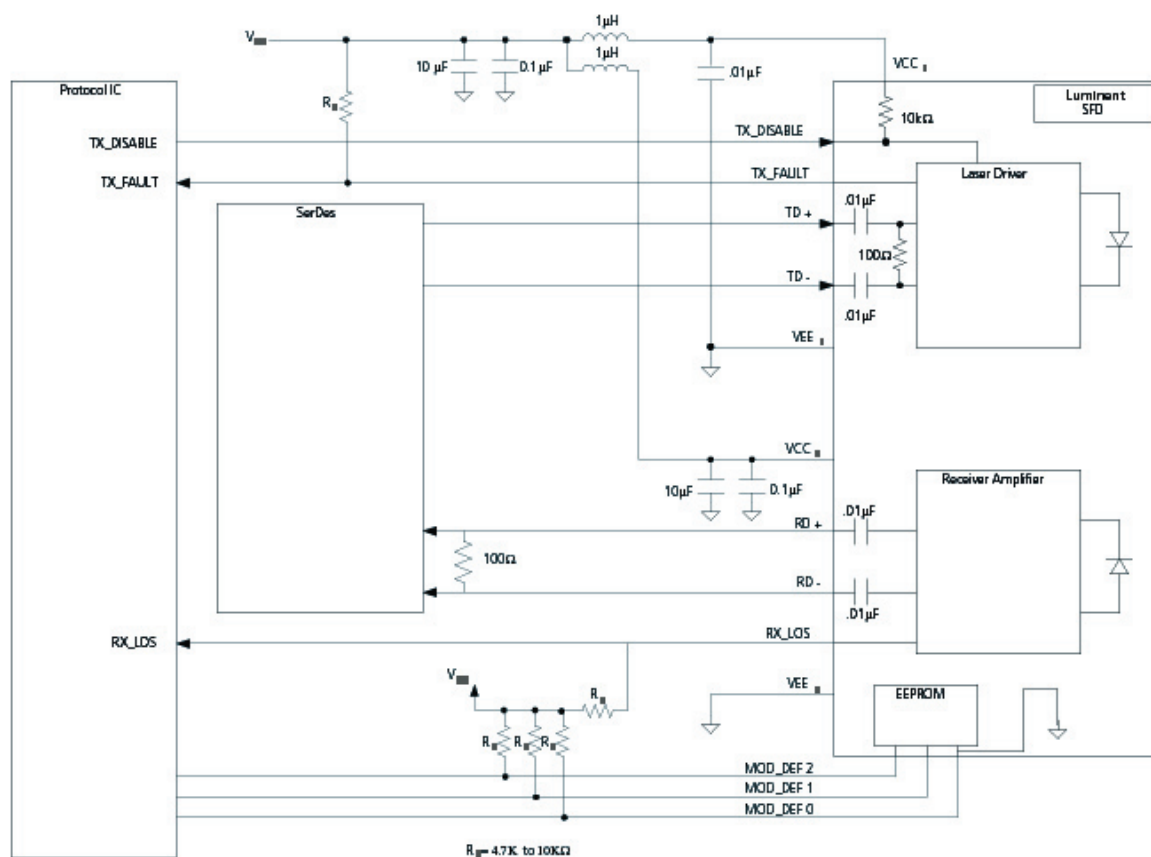
Pinout Definitions

Pin	Function	Notes
1	V _{ee} T	TX GND
2	TX_FAULT	Open Collector
3	TX_DISABLE	Internally Pulled High
4	MOD_DEF2	Serial Data Input
5	MOD_DEF1	Serial Clock Input
6	MOD_DEF0	Internally Grounded
7	NC	Not Connected
8	LOS	Open Collector
9	V _{ee} R	RX Ground
10	V _{ee} R	RX Ground
11	V _{ee} R	RX Ground
12	RXD-	RX Data Negative
13	RXD+	RX Data Positive
14	V _{ee} R	RX GND
15	V _{CC} R	RX Power
16	V _{CC} T	TX Power
17	V _{ee} T	TX GND
18	TXD+	TX Data Positive
19	TXD-	TX Data Negative
20	V _{ee} T	TX GND

Technical drawing of a shaft with a diameter of .528 [13.41]. The shaft has a central section with a diameter of .528 [13.41] and a length of 13.41 inches. The shaft is shown in a cross-sectional view with a central hole and a keyway.



Suggested Transceiver Interface



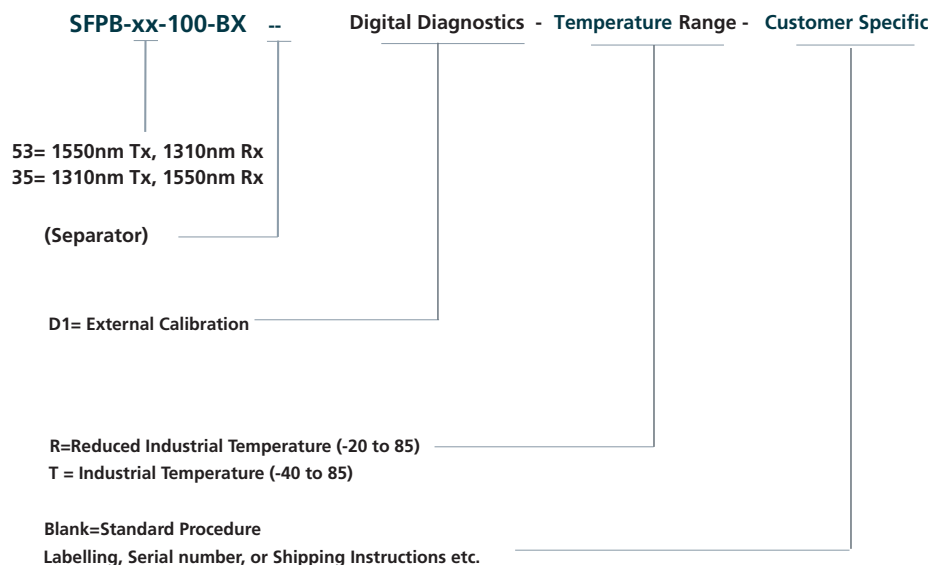
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Ordering Information

Available Options:

SFPB-53-100-BX
 SFPB-53-100-BX--T
 SFPB-53-100-BX--D1
 SFPB-53-100-BX--D1-T
 SFPB-35-100-BX
 SFPB-35-100-BX--T
 SFPB-35-100-BX--D1
 SFPB-35-100-BX--D1-T

Part numbering Definition:



Warnings:

Handling Precautions: This device is susceptible to damage as a result of electrostatic discharge (ESD). A static free environment is highly recommended. Follow guidelines according to proper ESD procedures.

Laser Safety: Radiation emitted by laser devices can be dangerous to human eyes. Avoid eye exposure to direct or indirect radiation.

Legal Notes:

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