

B-1X/1X-1250C-F(DFB)-SSCx



Features

- Single Mode Single Fiber 2x5 SFF SC Receptacle connector
- Gigabit Ethernet Compliant
- Single +3.3V Power Supply
- Tx 1310nm/Rx 1550 nm [B-13/15-1250C-F(DFB)-SSCx]
- Tx 1550nm/Rx 1310 nm [B-15/13-1250C-F(DFB)-SSCx]
- LVPECL Differential Inputs and Outputs
- LVTTTL Signal Detection Output
- Class 1 Laser Int. Safety Standard IEC-825 Compliant
- EMI Shielding Finger Optional
- RoHS compliance available

Absolute Maximum Rating

Parameter	Symbol	Min.	Max.	Unit	Note
Power Supply Voltage	V_{cc}	0	3.6	V	
Input Voltage	-	0	V_{cc}	V	
Output Current	I_{out}	-	30	mA	
Soldering Temperature	-	-	260	°C	10 seconds on leads only
Storage Temperature	T_{stg}	-40	85	°C	

Recommended Operating Condition

Parameter	Symbol	Min.	Typ.	Max.	Unit
Power Supply Voltage	V_{cc}	3.1	3.3	3.5	V
Operating Temperature (-SSCx(S))	T_{opr}	-5	-	70	°C
Operating Temperature (-SSCxA(S))	T_{opr}	-40	-	85	°C
Data Rate	-	-	1250	-	Mbps

B-1X/1X-1250C-F(DFB)-SSC_x

Transmitter Specifications

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Optical						
Optical Transmit Power	P_o	-9	-	-3	dBm	B-1X/1X-1250C-F(DFB)-SSC
Optical Transmit Power	P_o	-5	-	0	dBm	B-1X/1X-1250C-FDFB-SSC2
Optical Transmit Power	P_o	-3	-	+2	dBm	B-1X/1X-1250C-FDFB-SSC3
Optical Transmit Power	P_o	0	-	+5	dBm	B-1X/1X-1250C-FDFB-SSC4
Output center Wavelength	λ	1260	1310	1360	nm	B-13/15-1250C-F(DFB)-SSC _x
Output center Wavelength	λ	1480	1550	1580	nm	B-15/13-1250C-F(DFB)-SSC _x
Output Spectrum Width	$\Delta\lambda_{rms}$	-	-	4	nm	RMS(σ), B-1X/1X-1250C-F-SSC
Output Spectrum Width	$\Delta\lambda$	-	-	1	nm	-20dB width, B-1X/1X-1250C-FDFB-SSC _x
Side Mode Supression Ratio	SMSR	30	-	-	dB	B-1X/1X-1250C-FDFB-SSC _x
Extinction Ratio	ER	9	-	-	dB	
Output Eye		Compliant with IEEE 802.3z				
Optical Rise Time	t_r	-	-	260	ps	20% to 80% Values
Optical Fall Time	t_f	-	-	260	ps	20% to 80% Values
Optical Isolation		30	-	-	dB	
Relative Intensity Noise	RIN	-	-	-116	dB/Hz	
Total Jitter	TJ	-	-	270	ns	Measured with 2 ⁷ -1 PRBS

Transmitter Specifications

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Electrical						
Supply Current	I_{CC}	-	-	150	mA	Maximum current is specified at V _{CC} = Maximum @ maximum temperature
Transmit Enable Voltage	V_{EN}	0	-	0.8	V	
Transmit Disable Voltage	V_{DIS}	2	-	V_{CC}	V	
Data Input Current-Low	I_{IL}	-350	-	-	μ A	
Data Input Current-High	I_{IH}	-	-	350	μ A	
Differential Input Voltage	$V_{IH}-V_{IL}$	300	-	-	mV	
Data Input Voltage-Low	$V_{IL}-V_{CC}$	-2.0	-	-1.58	V	These inputs are compatible with 10K, 10KH and 100K ECL and PECL inputs
Data Input Voltage-High	$V_{IH}-V_{CC}$	-1.1	-	-0.74	V	

B-1X/1X-1250C-F(DFB)-SSCx

Receiver Specifications

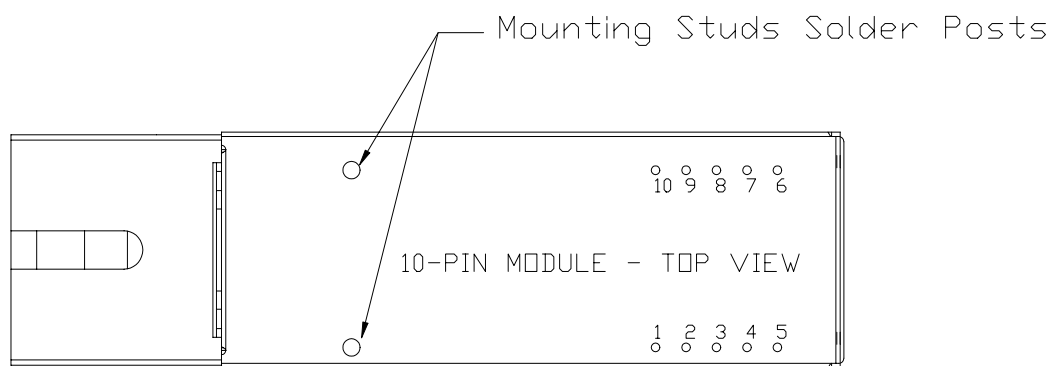
Parameter	Symbol	Min	Typical	Max	Unit	Notes
Optical						
Sensitivity	-	-	-	-22	dBm	Measured with 27-1 PRBS, BER= 10 ⁻¹²
Maximum Input Power	P _{in}	-3	-	-	dBm	
Signal Detect-Asserted	Pa	-	-	-22	dBm	Measured on transition: low to high (Note 1)
Signal Detect-Deasserted	Pd	-38	-	-	dBm	Measured on transition: high to low (Note 1)
Signal Detect-Hysteresis	-	1	-	4	dB	
Cross Talk	-	-	-	-33	dB	
Wavelength of Operation	-	1480	-	1600	nm	B-13/15-1250C-F(DFB)-SSCX
Wavelength of Operation	-	1260	-	1360	nm	B-15/13-1250C-F(DFB)-SSCX

Note 1: The SD level should be deasserted when fiber disconnected

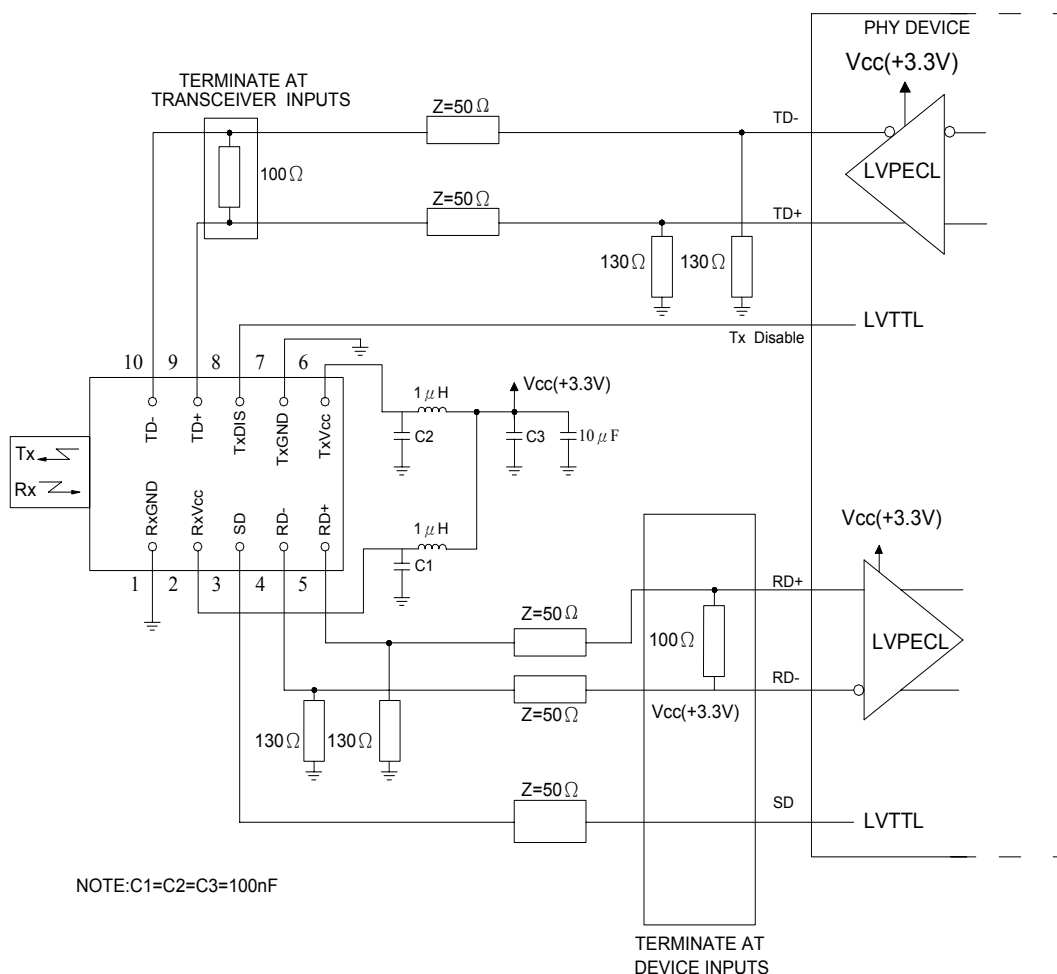
Receiver Specifications

Parameter	Symbol	Min	Typical	Max	Unit	Note
Electrical						
Supply Current	I _{CC}	-	-	100	mA	The current excludes the output load current
Data Output Voltage-Low	V _{OL} -V _{CC}	-2.0	-	-1.58	V	These outputs are compatible with 10K, 10KH and 100KECL and PECL outputs LVTTTL SD Output
Data Output Voltage-High	V _{OH} - V _{CC}	-1.1	-	-0.74	V	
Signal Detect Output Voltage-Low	V _{SDL}	0	-	0.5	V	
Signal Detect Output Voltage-High	V _{SDH}	2.0	-	V _{CC}	V	

Connection Diagram



PIN	Symbol	Notes
1	RxGND	Directly connect this pin to the receiver ground plane
2	RxVcc	+3.3V dc power for the receiver section
3	SD	Active high on this indicates a received optical signal(LVTTL)
4	RD-	Receiver Data Out Bar(LVPECL)
5	RD+	Receiver Data Out (LVPECL)
6	TxVcc	+3.3V dc power for the transmitter section
7	TxGND	Directly connect this pin to the transmitter ground plane
8	TxDIS	Transmitter disable(LVTTL)
9	TD+	Transmitter Data In (LVPECL)
10	TD-	Transmitter Data In Bar (LVPECL)



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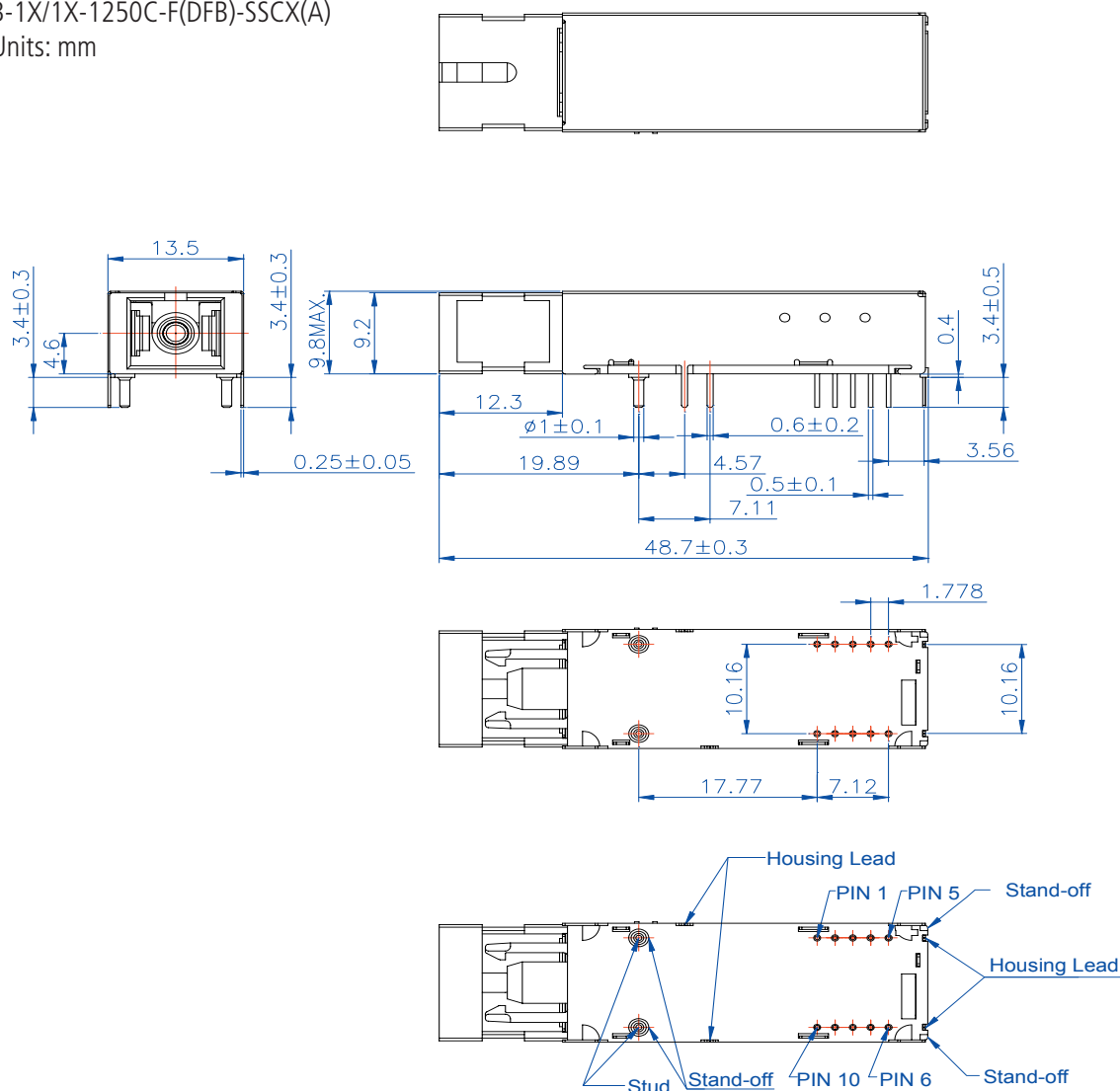


1. THIS FIGURE DESCRIBE THE RECOMMAND CIRCUIT BOARD LAYOUT FOR THE SFF TRANSCEIVER.
2. THE HATCHED AREAS ARE KEEP-OUT AREAS RESERVED FOR HOUSING STANDOFF. NO METAL TRACES OR GROUND CONNECTION IN KEEP-OUT AREAS.
3. THE MOUNTING STUDS SHOULD BE SOLDERED TO CHASSIS GROUND FOR MECHANICAL INTEGRITY.

Package Diagram

B-1X/1X-1250C-F(DFB)-SSCx(A)

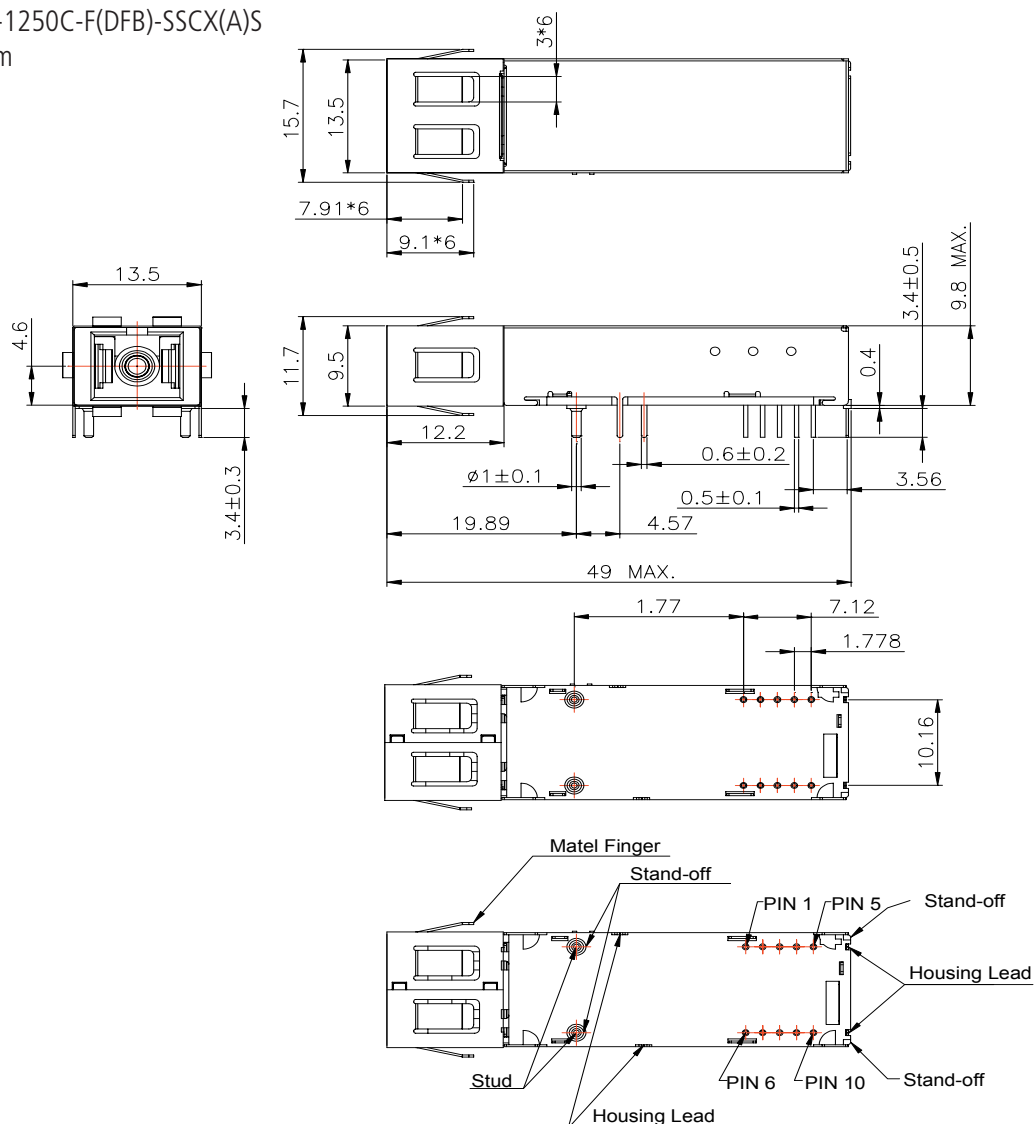
Units: mm



Package Diagram

B-1X/1X-1250C-F(DFB)-SSC(A)S

Units: mm



Ordering Information

Available Options:

B-13/15-1250C-F-SSC(A)(S)(-G5)	B-15/13-1250C-F-SSC(A)(S)(-G5)
B-13/15-1250C-FDFB-SSC(S)(-G5)	B-15/13-1250C-FDFB-SSC(S)(-G5)
B-13/15-1250C-FDFB-SSC2(S)(-G5)	B-15/13-1250C-FDFB-SSC2(S)(-G5)
B-13/15-1250C-FDFB-SSC3(S)(-G5)	B-15/13-1250C-FDFB-SSC3(S)(-G5)
B-13/15-1250C-FDFB-SSC4(S)(-G5)	B-15/13-1250C-FDFB-SSC4(S)(-G5)

Part numbering Definition:

	B	-	1X/1X	-	1250C	-	F(DFB)	-	S	SC	Tx Power	Operating Temperature	Shielding Finger	RoHS compliance available
• Wavelength	13/15													
13/15: Tx Wavelength=1310nm Rx Wavelength=1550nm 15/13: Tx Wavelength=1550nm Rx Wavelength=1310nm														
• Communication protocol (1.25 Gbps)														
• +3.3 V SFF Transceiver F= FP Laser transceiver FDFB = DFB Laser transceiver														
• Single mode fiber														
• Connector options														
• Tx Output Power blank = -9 to -3 dBm 2 = -5 to 0 dBm 3 = -3 to +2 dBm 4 = 0 to +5 dBm														
• Operating Temperature blank = Commercial temperature (-5 to 70 °C) A = Industrial temperature (-40 to 85 °C)														
• Shielding Finger Option Blank = No shielding finger S = with Shielding finger														
• RoHS compliance available Blank = RoHS non-compliant product G5 = RoHS 5/6-compliant product (lead exemption)														

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.

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