



Features

- Duplex LC Single Mode Transceiver
- Small Form Factor Multi-sourced 2x5 Pin Package
- Ultra Long reach SONET OC-3/SDH STM-1 Compliant
- Single +3.3V Power Supply
- LVPECL Differential Inputs and Outputs
- LVPECL Signal Detection Output
- Temperature Range: 0 to 70 °C
- Class 1 Laser International Safety Standard IEC 825 Compliant
- Solder ability to MIL-STD-883, Method 2003
- Flammability to UL94V0
- Humidity RH 5-85% (5-95% short term) to IEC 68-2-3
- Complies with Telcordia(Bellcore) GR-468-CORE
- Uncooled Laser Diode with MQW Structure
- EMI Shielding Finger Optional
- ATM 155 Mbps links
- RoHS Compliance Available

Table 1 – Absolute Maximum Rating

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Power Supply Voltage	V _{cc}	0	-	3.6	V	
Output Current	I _{out}	-	-	30	mA	
Soldering Temperature	-	-	-	260	°C	1
Storage Temperature	T _{stg}	-40	-	85	°C	

Note 1: 10 seconds on leads only

Table 2 – Recommended Operating Condition

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Power Supply Voltage	V _{cc}	3.1	3.3	3.5	V	
Operating Temperature (Case)	T _{opr}	0	-	70	°C	
Data Rate	DR	-	155	-	Mbps	

Table 3 – Transmitter Specifications (Optical)

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Optical Transmit Power	P_o	-15	-	-3	dBm	
Output Center Wavelength	λ_c	1261	1310	1360	nm	
Output Spectrum Width	$\Delta \lambda$	-	-	7.7	nm	
Optical Rise/Fall Time	t_r / t_f	-	-	2	ns	2
Extinction Ratio	ER	8.2	-	-	dB	
Output Eye		Compliant with Bellcore GR-253-CORE and ITU Recommendation				
Relative Intensity Noise	RIN	-	-	-116	dB/Hz	
Total Jitter	T_J	-	-	1.2	ns	3

Note 2: 10% to 90% Values

Note 3: Measured with $2^{23}-1$ PRBS with 72 ones and 72 zeros.

Table 4 – Transmitter Specifications (Electrical)

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Power Supply Current	I_{CC}	-	-	180	mA	4
Transmitter Enable Voltage	V_{EN}	0	-	0.8	V	
Transmitter Disable Voltage	V_D	2	-	V_{CC}	V	
Data Input Current-Low	I_{IL}	-200	-	-	μA	
Data Input Current-High	I_{IH}	-	-	200	μA	
Data Input Voltage-Low	$V_{IL}-V_{CC}$	-2.0	-	-1.58	V	5
Data Input Voltage-High	$V_{IH}-V_{CC}$	-1.1	-	-0.74	V	5

Note 4: Maximum current is specified at $V_{CC} = \text{Maximum}$ @ maximum temperature

Note 5: These inputs are compatible with 10K, 10KH and 100K ECL and PECL inputs

Table 5 – Receiver Specifications (Optical)

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Sensitivity	-	-	-	-34	dBm	6
Maximum Input Power	P_{in}	-3	-	-	dBm	
Signal Detect-Asserted	P_a	-	-	-32	dBm	
Signal Detect-Deasserted	P_d	-48	-	-	dBm	
Signal Detect-Hysteresis	-	1	-	4	dB	
Wavelength of Operation	-	1100	-	1600	nm	

Note 6: Measured with $2^{23}-1$ PRBS/BER = 10^{-10}

Table 6 – Receiver Specifications (Electrical)

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Power Supply Current	I_{CC}	-	-	100	mA	7
Data Output Voltage-Low	$V_{OL}-V_{CC}$	-2	-	-1.58	V	8
Data Output Voltage-High	$V_{OH}-V_{CC}$	-1.1	-	-0.74	V	8
Signal Detect Output Voltage-Low	$V_{SDL}-V_{CC}$	-2	-	-1.58	V	
Signal Detect Output Voltage-High	$V_{SDH}-V_{CC}$	-1.1	-	-0.74	V	

Note 7: The current excludes the output load current

Note 8: These outputs are compatible with 10K, 10KH and 100KECL and LVPECL outputs.

Connection Diagram

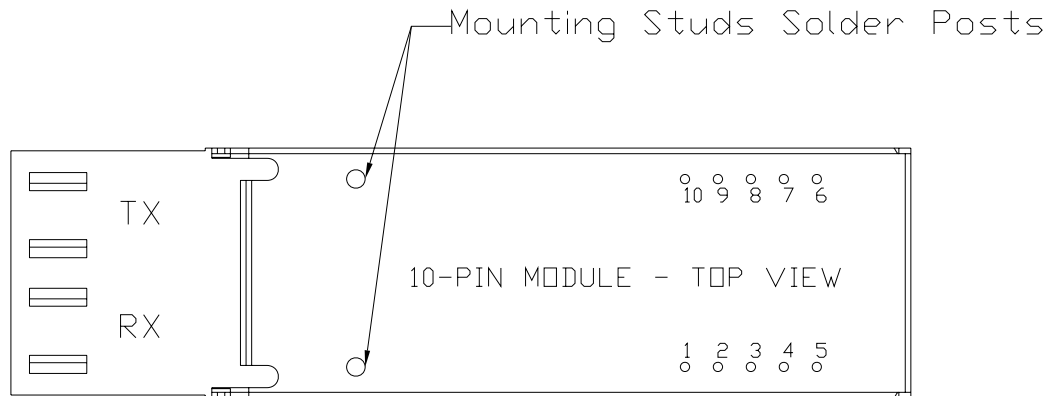
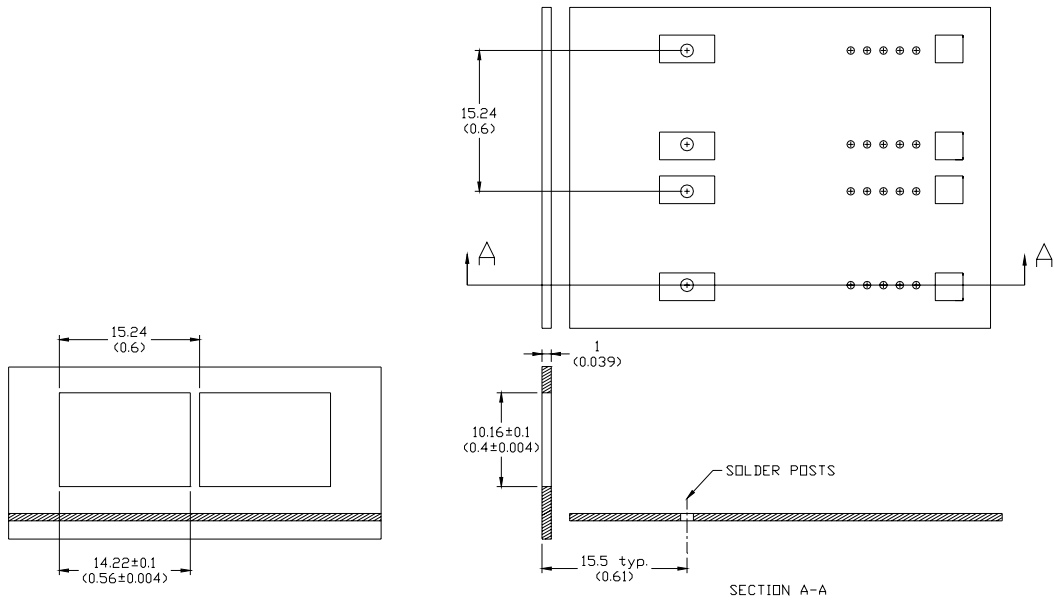


Table 7 – Pin Definitions

Pin	Unit	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 (LVPECL)
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 (LVTTTL)
9	TD+	Transmitter Data In (LVPECL)
10	TD-	Transmitter Data In Bar (LVPECL)
Attaching Posts		The attaching posts are at case potential and may be connected to chassis ground. They are isolated from circuit ground.

Recommended Panel Mounting



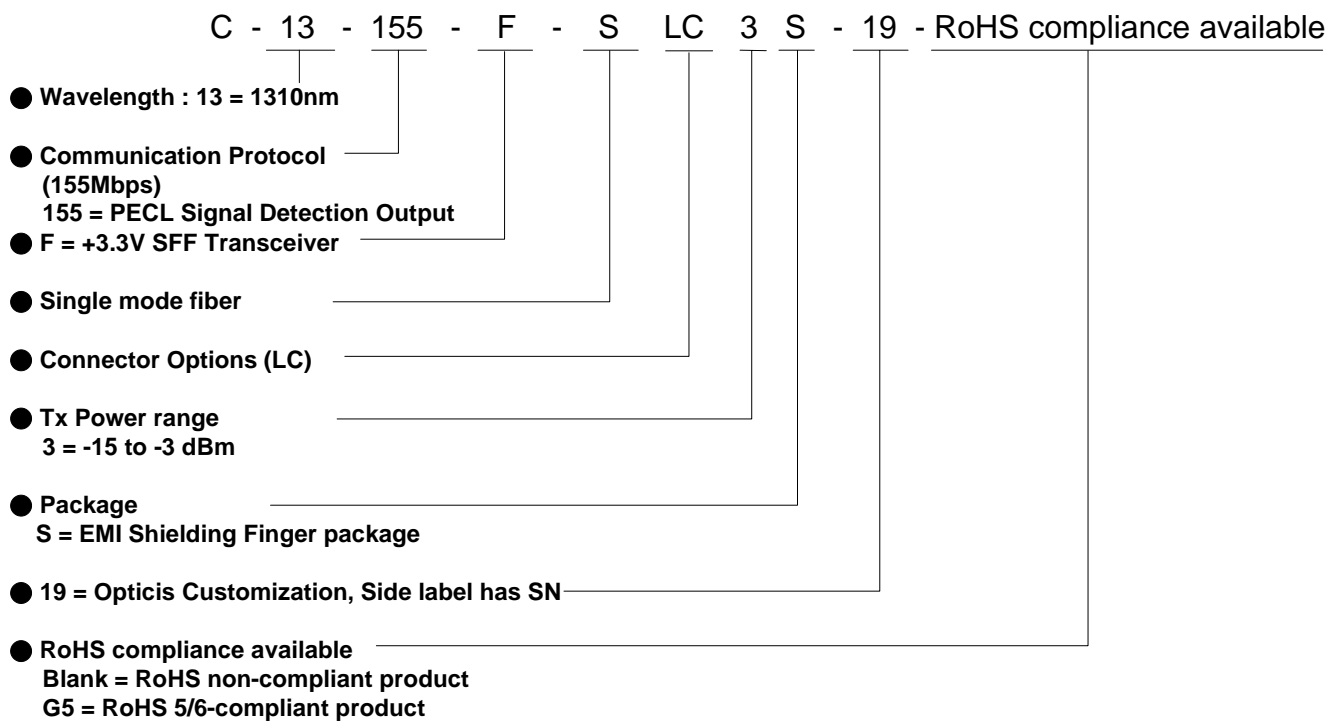
DIMENSION IN MILLIMETER (INCHES)

Order Information

Table 8 – Order Information

Part No.
C-13-155-F-SLC3S-19
C-13-155-F-SLC3S-19-G5

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.

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