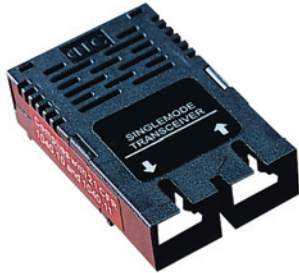


C-1xx-1250(C)-TDFB-SSC2



Features

- SC Duplex Single Mode Transceiver
- Industry Standard 1x9 Footprint
- Complies with IEEE 802.3z Gigabit Ethernet
- Single +5V Power Supply
- Operating temperature Range 0 to 70°C
- PECL Differential Inputs and Outputs
- PECL Signal Detection Output (C-1xx-1250-TDFB-SSC2)
- TTL Signal Detection Output (C-1xx-1250C-TDFB-SSC2)
- Wave solderable and Aqueous Washable
- Uncooled laser diode with MQW stucture
- Complies with Telcordia (Bellcore) GR-468-CORE
- 1.25 Gbps application
- CWDM application

Absolute Maximum Rating

Parameter	Symbol	Min.	Max.	Unit	Note
Power Supply Voltage	V_{CC}	0	6	V	
Output Current	I_{out}	0	30	mA	
Soldering Temperature	-	-	260	°C	10 seconds on leads only
Operating temperature	T_{opr}	0	70	°C	
Storage Temperature	T_{stg}	-40	85	°C	

Recommended Operating Condition

Parameter	Symbol	Min.	Typ.	Max.	Unit
Power Supply Voltage	V_{CC}	4.75	5	5.25	V
Operating Temperature	T_{opr}	0	-	70	°C
Data Rate	-	-	1250	-	Mbps

Transmitter Specifications, (0°C < T_{opr} < 70°C, 4.75V < V_{CC} < 5.25V)

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Optical						
Optical Transmit Power	P_o	-5	-	0	dBm	Output Power is coupled into a 9/125 μ m single mode fiber
Output center Wavelength	λ	$\lambda - 5.5$	λ	$\lambda + 7.5$	nm	$\lambda = 1xxx$ nm
Output Spectrum Width	$\Delta\lambda$	-	-	1	nm	-20 dB width
Side Mode Suppression Ratio	Sr	30	35	-	dB	CW, $P_o = 5$ mW
Extinction Ratio	ER	9	-	-	dB	
Output Eye		Compliant with IEEE 802.3z				
Optical Rise Time	t_r	-	-	0.26	ns	20% to 80% Values
Optical Fall Time	t_f	-	-	0.26	ns	20% to 80% Values
Relative Intensity Noise	RIN	-	-	-120	dB/Hz	
Total Jitter	TJ	-	-	0.27	ns	Measured with 27-1 PRBS with 72 ones and 72 zeros

C-1xx-1250(C)-TDFB-SSC2

Transmitter Specifications, (0°C<T_{opr}<70°C, 4.75V < V_{CC} < 5.25V)

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Electrical						
Power Supply Current	I _{CC}	-	-	260	mA	Maximum current is specified at V _{CC} = Maximum @ maximum temperature
Data Input Current-Low	I _{IL}	-350	-	-	μA	
Data Input Current-High	I _{IH}	-	-	350	μA	
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	

Receiver Specifications, (0°C<T_{opr}<70°C, 4.75V < V_{CC} < 5.25V)

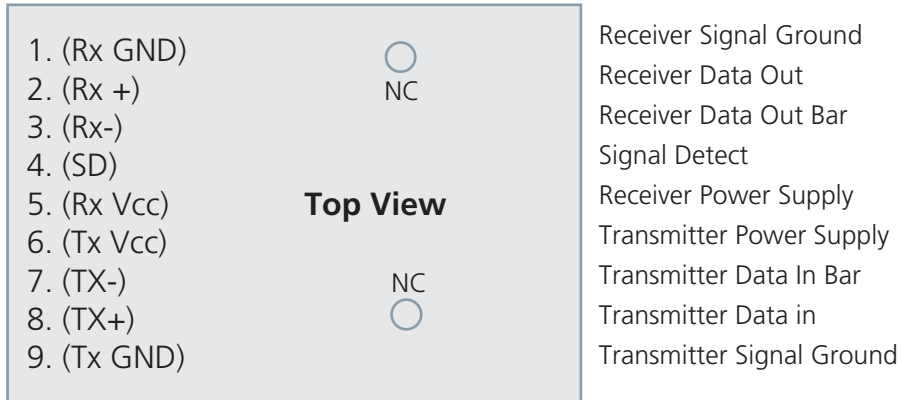
Parameter	Symbol	Min	Typical	Max	Unit	Notes
Optical						
Sensitivity	-	-	-	-22	dBm	Measured with 27-1 PRBS, BER= 10 ⁻¹²
Maximum Input Power	P _{in}	-	-	-3	dBm	
Signal Detect-Asserted	P _a	-	-	-22	dBm	Measured on transition: low to high
Signal Detect-Deasserted	P _d	-38	-	-	dBm	Measured on transition: high to low
Signal Detect-Hysteresis	Pa-pd	1	-	-	dB	
Wavelength of Operation		1100	-	1600	nm	

Receiver Specifications, (0°C<T_{opr}<70°C, 4.75V < V_{CC} < 5.25V)

Parameter	Symbol	Min	Typical	Max	Unit	Note
Electrical						
Power 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 LVPECL outputs
Data Output Voltage-High	V _{OH} -V _{CC}	-1.1	-	-0.74	V	
Signal Detect Output Voltage-Low	V _{SDL}	-	-	0.5	V	C-1xx-1250C-TDFB-SSC2
Signal Detect Output Voltage-High	V _{SDH}	2.0	-	-	V	
Signal Detect Output Voltage-Low	V _{SDL} -V _{CC}	-2.0	-	-1.58	V	C-1xx-1250-TDFB-SSC2
Signal Detect Output Voltage-High	V _{SDH} -V _{CC}	-1.1	-	-0.74	V	

C-1xx-1250(C)-TDFB-SSC2

Connection Diagram

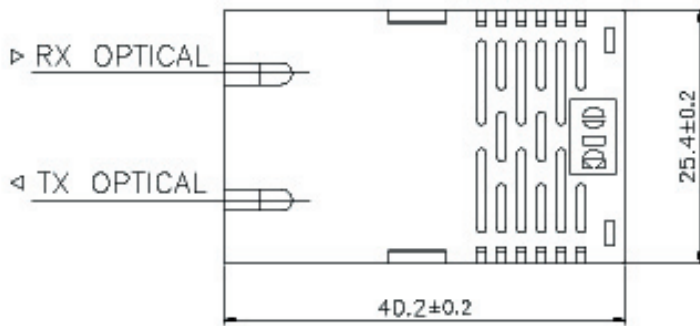


PIN	Symbol	Notes
1	RxGND	Directly connect this pin to the receiver ground plane
2	RD+	See recommended circuit schematic
3	RD-	See recommended circuit schematic
4	SD	Active high on this indicates a received optical signal
5	RxVcc	+5V dc power for the receiver section
6	TxVcc	+5V dc power for the transmitter section
7	TD-	See recommended circuit schematic
8	TD+	See recommended circuit schematic
9	TxGND	Directly connect this pin to the transmitter ground plane

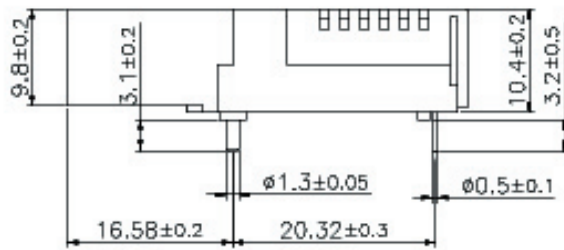
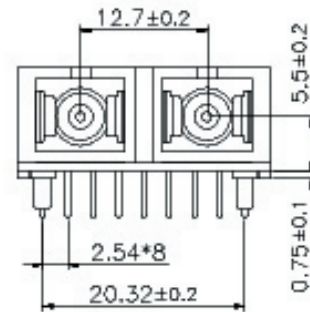
Package Diagram

SC Transceiver Assembly 10.4mm

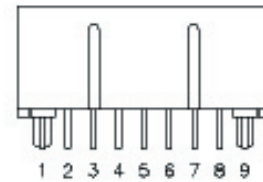
Top View



Front View



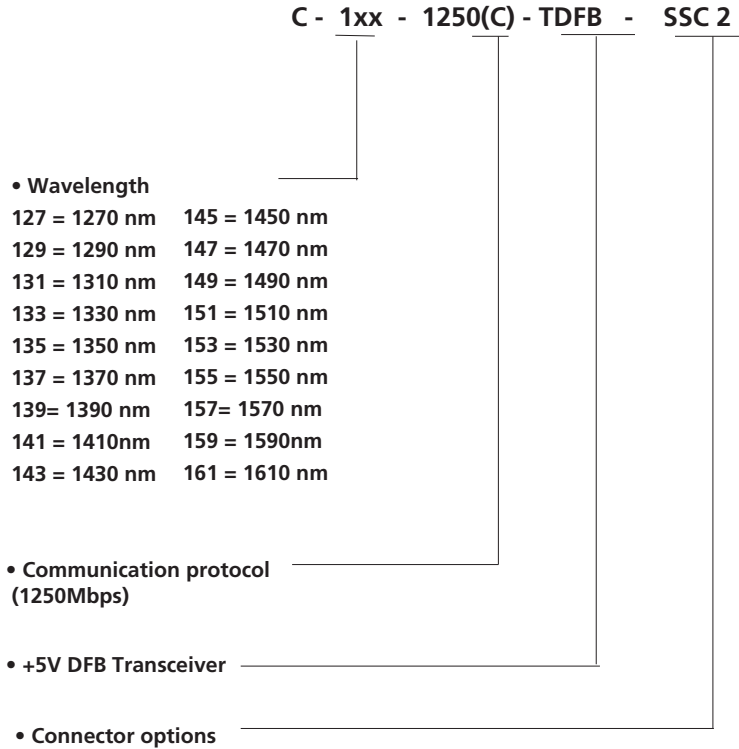
Side View



Rear View

C-1xx-1250(C)-TDFB-SSC2

Ordering Information



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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