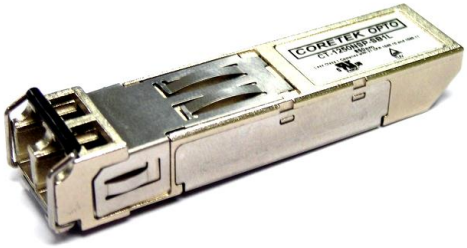
DC to 0.5Mb/s - Multimode Transceiver

SFP, Duplex LC Connector, 850 nm VCSEL for Multimode Fiber, RoHS Compliant



Features

- 850 nm VCSEL
- Data Rate: DC~0.5 Mb/s
- Single +5 V Power Supply
- RoHS Compliant and Lead-free
- TTL Electrical Data Interface
- Compliant with Multi-Source Agreement (MSA) Small Form Factor Pluggable (SFP)
- Duplex LC Connector
- Eye Safety

  Designed to meet Laser Class 1 comply with EN60825-1

Applications

- PDH Data Transmission
- Fiber Modem
- Fiber Monitor System
- Multimode fiber links
- Optical-Electrical Interface Conversion

Description

The CT-000ANSP-S12L from Coretek Opto Corp. is cost-effective module for serial optical data communication applications specified for data-rates of 0.5 Mb/s. It operates with a +5 V power supply. The module is intended for multimode fiber, operates at a nominal wavelength of 850nm and complies with Multi-Source Agreement (MSA) Small Form Factor Pluggable (SFP). Each module consists of a transmitter optical subassembly, a receiver optical subassembly and an electrical subassembly. All of them are housed in a metal package and the combination produces a reliable component.

The module is a dual fiber connector transceiver designed for use in PDH (Plesiochronous Digital Hierarchy) data transmission for 0.5 Mb/s short reach application. The characterization is performed in accordance with Telcordia Specification GR-468-CORE.

EMC

Most equipment utilizing high-speed transceivers will be required to meet the following requirements:

1) FCC in the United States
2) CENELEC EN55022 (CISPR 22) in Europe

To assist the customer in managing the overall equipment EMC performance, the transceivers have been designed to satisfy FCC class B limits and provide good immunity to radio-frequency electromagnetic fields.

Eye Safety

This laser based single mode transceiver is a CLASS 1 LASER PRODUCT, Hazard level 1. It complies with IEC 60825-1 Ed.2: 2007-03 and FDA performance standards for laser products (21 CFR 1040.10 and 1040.11) except for deviations pursuant to Laser Notice 50, dated June 24, 2007.

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03/01/2018
Version：A

Product Information

Model Number	Operating Voltage & Data Interface	Connector	Distance	LD Type & Wavelength	Output Power	Sensitivity
CT-000ANSP-S12L	*5 V TTL*	*LC*	*2 km*	*850 nm VCSEL*	*-10 ~ -4 dBm*	*≦ -18 dBm*

ABSOLUTE MAX RATINGS

PARAMETER	SYMBOL	MIN	MAX	UNIT	NOTE
Storage Temperature	T_S	-40	85	℃	
Supply Voltage	V_{CC}	0	6	V	
Lead Soldering Temperature/Time	T_{SOLD}		260	℃	10 sec on lead
Data Input Voltage	---	0	Vcc	V	

OPERATING CONDITIONS

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	NOTE
Ambient Operating Temperature	T_A	0		70	℃	
Supply Voltage	V_{CC}	4.75		5.25	V	

ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	MIN	MAX	UNIT	NOTE
Transmitter					
Transmitter Supply Current	I_{CCT}		100	mA	
Transmitter Data Input Voltage – Low	V_{IL}		0.4	V	
Transmitter Data Input Voltage – High	V_{IH}	2.4		V	
Receiver					
Receiver Supply Current	I_{CCR}		100	mA	
Receiver Data Output Voltage – Low	V_{OL}		0.4	V	
Receiver Data Output Voltage – High	V_{OH}	2.4		V	

TRANSMITTER ELECTRO-OPTICAL CHARACTERISTICS

PARAMETER	SYMBOL	MIN	TYP.	MAX	UNIT	NOTE
Optical Output Power	Po	-10		-4	dBm	1
Extinction Ratio	ER	10			dB	
Center Wavelength	λ_c	830	850	860	nm	
Spectral Width (RMS)	$\Delta\lambda$			1	nm	

RECEIVER ELECTRO-OPTICAL CHARACTERISTICS

PARAMETER	SYMBOL	MIN	TYP.	MAX	UNIT	NOTE
Maximum Input Optical Power	P_{max}	-3			dBm	
Receiver Sensitivity	P_{min}			-18	dBm	2
Operating Wavelength	λ	770		860	nm	

Notes:

1. Measured average power coupled into 62.5/125 μm, 0.275NA or 50/125 μm, 0.2NA graded index multimode fiber.
2. Measured with square wave pattern.

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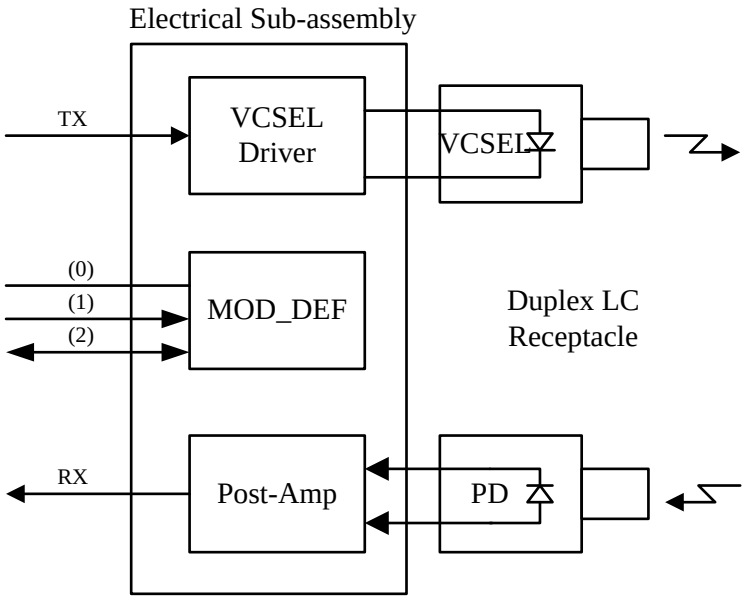
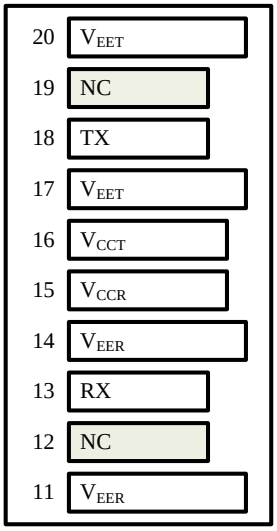
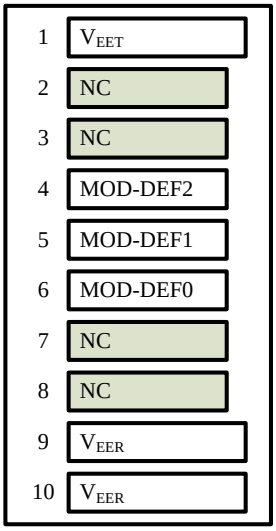
BLOCK DIAGRAM OF TRANSCEIVER



PIN OUT DIAGRAM OF TRANSCEIVER



Top of Board



Bottom of Board (As Viewed through Top of Board

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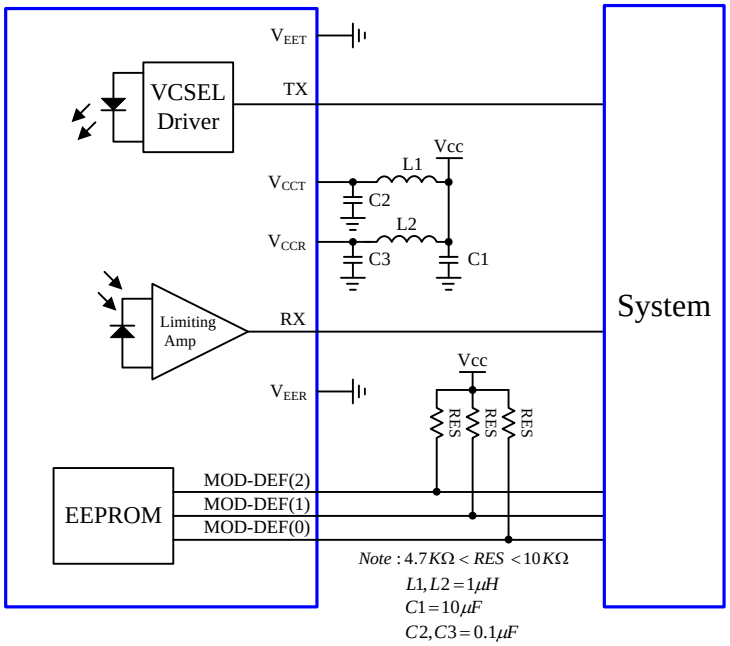
PIN OUT TABLE

Pin	Symbol	Functional Description
1	V_{EET}	Transmitter Ground
2	NC	Not Connect
3	NC	Not Connect
4	MOD-DEF(2)	Module Definition 2 – Two wire serial ID interface
5	MOD-DEF(1)	Module Definition 1 – Two wire serial ID interface
6	MOD-DEF(0)	Module Definition 0 – Grounded in module
7	NC	Not Connect
8	NC	Not Connect
9	V_{EER}	Receiver Ground
10	V_{EER}	Receiver Ground
11	V_{EER}	Receiver Ground
12	NC	Not Connect
13	RX	Received Data Out
14	V_{EER}	Receiver Ground
15	V_{CCR}	Receiver Power
16	V_{CCT}	Transmitter Power
17	V_{EET}	Transmitter Ground
18	TX	Transmitter Data In
19	NC	Not Connect
20	V_{EET}	Transmitter Ground

RECOMMENDED CIRCUIT SCHEMATIC



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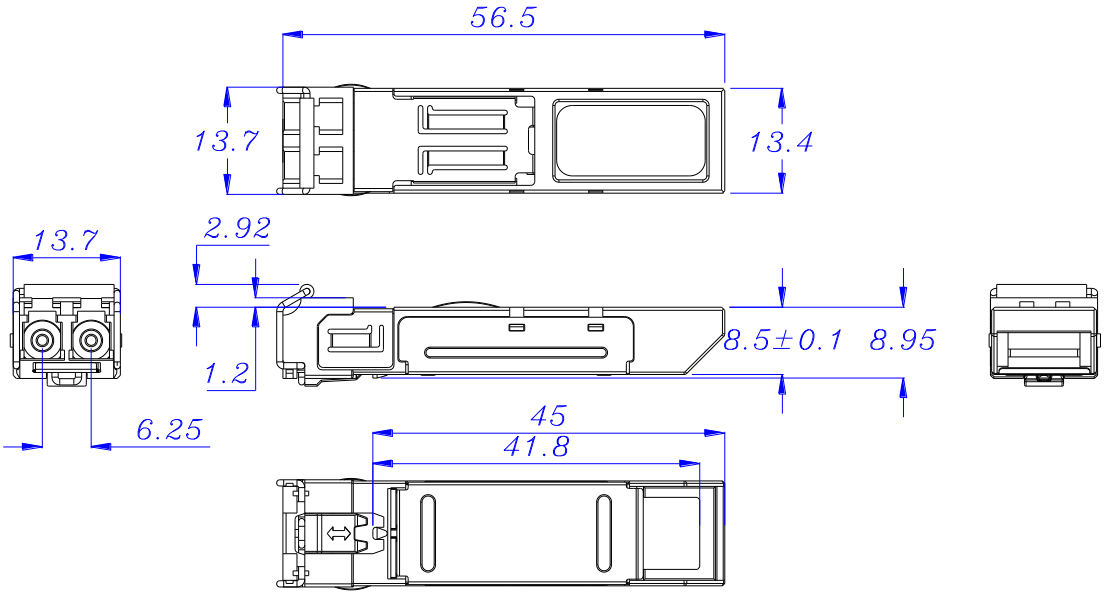
MECHANICAL DIMENSIONS

Units in mm



All dimensions are ±0.2mm unless otherwise specified.

REVISION HISTORY

Formulate (Revise) Record		
D/M/Y	**Version**	**Description**
03/01/2018	A	Initial version

Claim:

CORETEK Opto Corp. reserves the right to make changes in the specification described hereinafter without prior notice.

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