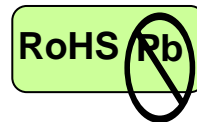


DC to 0.5Mb/s - Single Mode Transceiver



SFP, Duplex LC Connector, 1310 nm FP LD for Single Mode Fiber, RoHS Compliant



Features

- 1310 nm FP LD
- 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
- Single Mode fiber links
- Optical-Electrical Interface Conversion

Description

The CT-000ATSP-M15L 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 single mode fiber, operates at a nominal wavelength of 1310nm 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 long 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.

DC to 0.5Mb/s - Single Mode Transceiver



Product Information

Model Number	Operating Voltage & Data Interface	Connector	Distance	LD Type & Wavelength	Output Power	Sensitivity
CT-000ATSP-M15L	5 V TTL	LC	20 km	1310 nm FP	-12 ~ -8 dBm	\leq -22 dBm

ABSOLUTE MAX RATINGS

PARAMETER	SYMBOL	MIN	MAX	UNIT	NOTE
Storage Temperature	T_S	-40	85	$^{\circ}\text{C}$	
Supply Voltage	V_{CC}	0	6	V	
Lead Soldering Temperature/Time	T_{SOLD}		260	$^{\circ}\text{C}$	10 sec on lead
Data Input Voltage	---	0	V_{cc}	V	

OPERATING CONDITIONS

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	NOTE
Ambient Operating Temperature	T_A	0		70	$^{\circ}\text{C}$	
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	P_o	-12		-8	dBm	1
Extinction Ratio	ER	10			dB	
Center Wavelength	λ_c	1270	1310	1355	nm	
Spectral Width (RMS)	$\Delta \lambda$			7	nm	

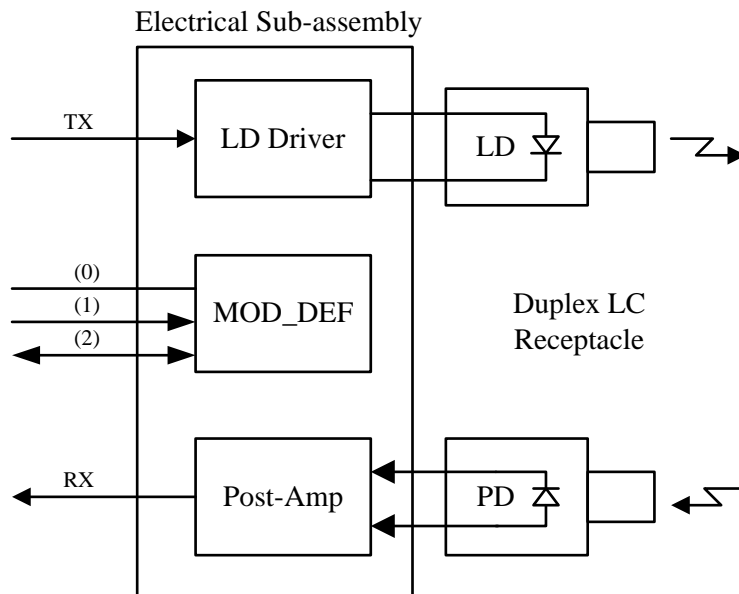
RECEIVER ELECTRO-OPTICAL CHARACTERISTICS

PARAMETER	SYMBOL	MIN	TYP.	MAX	UNIT	NOTE
Maximum Input Optical Power	P_{max}	-3			dBm	
Receiver Sensitivity	P_{min}			-22	dBm	2
Operating Wavelength	λ	1100		1600	nm	

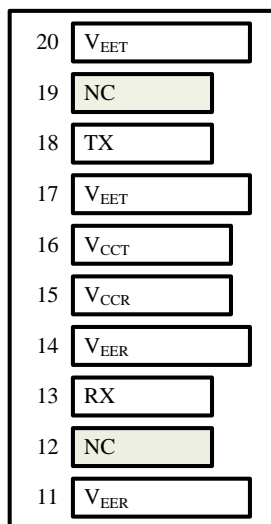
Notes:

1. Measured average power coupled into 9/125 μm single mode fiber.
2. Measured with square wave pattern.

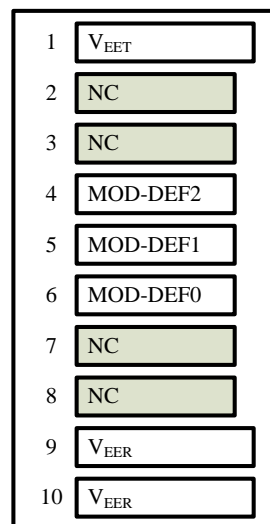
BLOCK DIAGRAM OF TRANSCEIVER



PIN OUT DIAGRAM OF TRANSCEIVER



Top of Board



Bottom of Board (As Viewed through Top of Board)

DC to 0.5Mb/s - Single Mode Transceiver



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

DC to 0.5Mb/s - Single Mode Transceiver

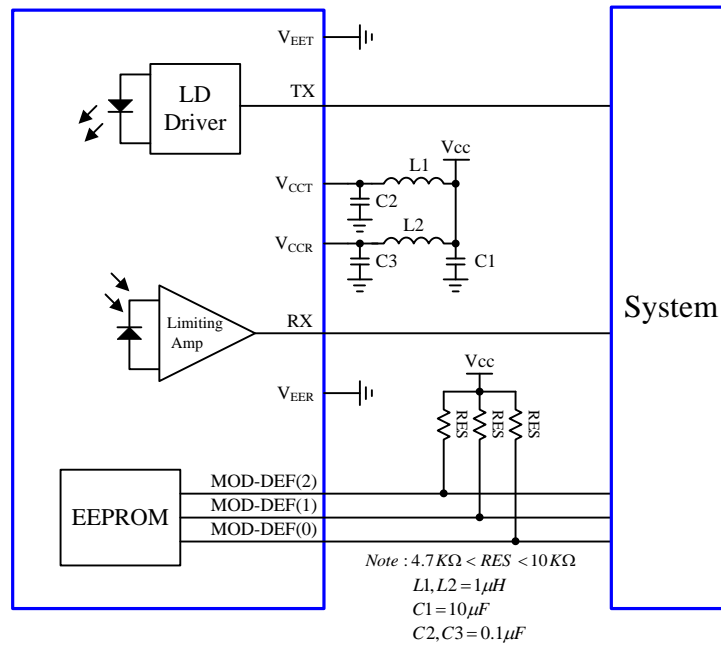


EEPROM Serial ID Memory Contents (A0h)

Addr.	Hex	ASCII	Addr.	Hex	ASCII	Addr.	Hex	ASCII	Addr.	Hex	ASCII
0	03		32	20		64	00		96	00	
1	04		33	20		65	00		97	00	
2	07		34	20		66	00		98	00	
3	00		35	20		67	00		99	00	
4	00		36	00		68	47	G	100	00	
5	00		37	00		69	46	F	101	00	
6	00		38	00		70	30	0	102	00	
7	00		39	00		71	31	1	103	00	
8	00		40	43	C	72	32	2	104	00	
9	00		41	54	T	73	31	1	105	00	
10	00		42	2D	-	74	50	P	106	00	
11	03		43	30	0	75	37	7	107	00	
12	00		44	30	0	76	35	5	108	00	
13	00		45	30	0	77	53	S	109	00	
14	14		46	41	A	78	30	0	110	00	
15	C8		47	54	T	79	30	0	111	00	
16	00		48	53	S	80	30	0	112	00	
17	00		49	50	P	81	31	1	113	00	
18	00		50	2D	-	82	20		114	00	
19	00		51	4D	M	83	20		115	00	
20	43	C	52	31	1	84	Y		116	00	
21	4F	O	53	35	5	85	Y		117	00	
22	52	R	54	4C	L	86	M		118	00	
23	45	E	55	20		87	M		119	00	
24	54	T	56	30	0	88	D		120	00	
25	45	E	57	30	0	89	D		121	00	
26	4B	K	58	30	0	90	20		122	00	
27	20		59	30	0	91	20		123	00	
28	20		60	05		92	00		124	00	
29	20		61	1E		93	00		125	00	
30	20		62	00		94	00		126	00	
31	20		63	47		95	XX		127	00	

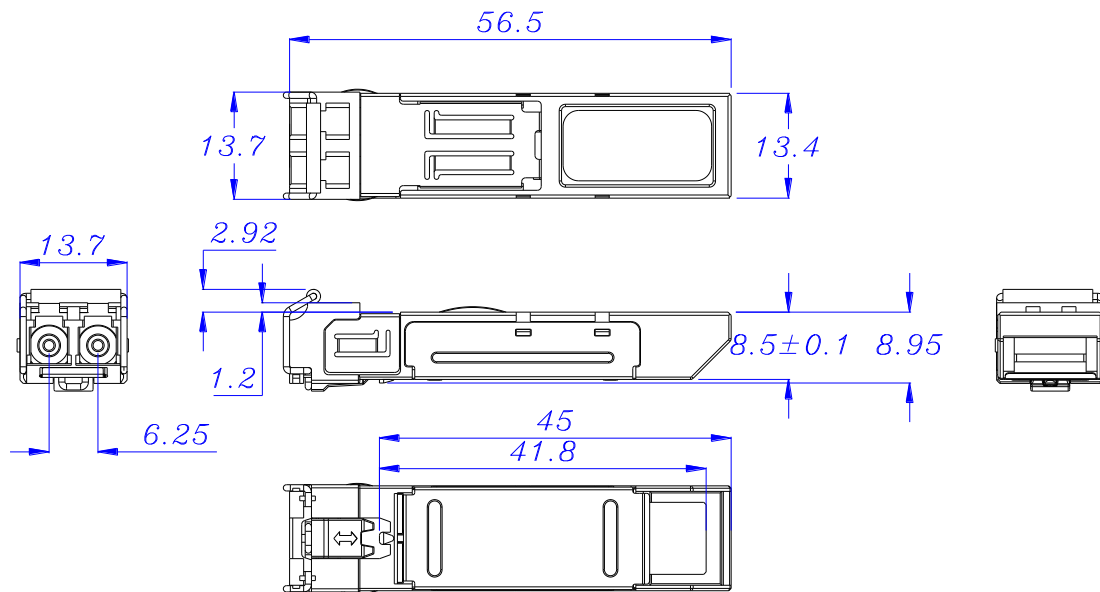
Note: Addresses showing blank Hex/ASCII values will be programmed according to the SFP MSA (standard Coretek transceiv

RECOMMENDED CIRCUIT SCHEMATIC



MECHANICAL DIMENSIONS

Units in mm



All dimensions are $\pm 0.2\text{mm}$ unless otherwise specified.

Claim:

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