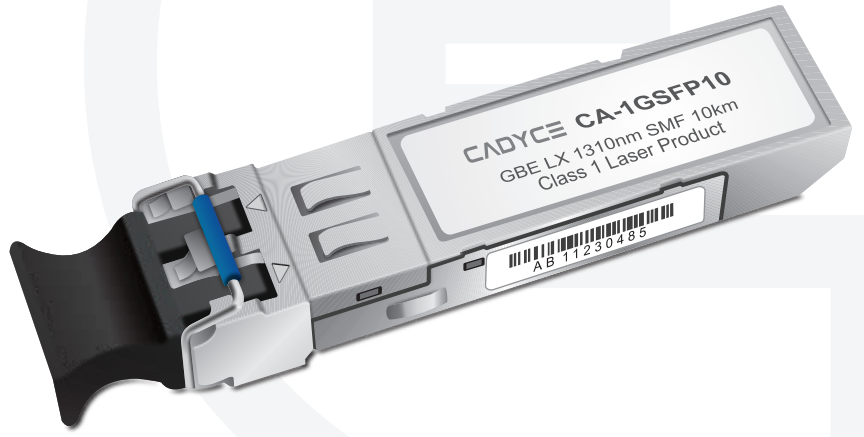


# CA-1GSFP10

## Single Mode Mini-GBIC LC Module



Cadyce Mini-GBIC Fiber modules are compact and Hot-pluggable which can be used for both telecommunication and data communication applications.

### Features:

- 1310nm FP LD • Data Rate: 1.25Gbps, NRZ • Single +3.3V Power Supply • RoHS Compliant and Lead-free
- AC/AC Differential Electrical Interface • Compliant with Multi-Source Agreement (MSA) Small Form Factor Pluggable (SFP) • Compliant with SFF-8472 Digital Diagnostic Monitoring Interface ( optional )
- Duplex LC Connector • Compliance with ANSI specifications for Fibre Channer applications at 1.06 Gbps
- Eye Safety -Designed to meet Laser Class 1 comply with EN60825-1 • For distances up to 10Km

### Application:

- Gigabit Ethernet Links • Fiber Channel Links at 1.06 Gbps • High Speed Backplane Interconnects • Switched Backbones

### Description:

The CA-1GSFP10 from CADYCE is the high performance and cost-effective module for serial optical data communication applications specified for single mode of 1.25 Gb/s. It operates with +3.3V 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 is integrated digital diagnostics functions via an I2C serial interface ( optional ).

The module is a duplex LC connector transceiver designed for use in Gigabit Ethernet applications and to provide IEEE-802.3z compliant link for 1.25Gb/s intermediate reach applications. The characteristics are 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:

The transceivers have been designed to meet Class 1 eye safety and comply with EN 60825-1.

### Absolute Max Ratings:

PARAMETER	SYMBOL	MIN	MAX	UNIT	NOTE
Storage Temperature	$T_S$	-40	85	$^{\circ}C$	
Supply Voltage	$V_{CC}$	0	6	V	
Data Input Voltage	---	0	$V_{CC}$	V	
Supply Current	$I_S$		300	mA	

### Operating Conditions:

PARAMETER	SYMBOL	MIN	TYP.	MAX	UNIT	NOTE
Supply Voltage	$V_{CC}$	3.1		3.5	V	
Data Input Voltage Swing	$V_{ID}$	300		1860	mV	

## Electrical Characteristics:

PARAMETER	SYMBOL	MIN	MAX	UNIT	NOTE
<b>Transmitter</b>					
Transmitter Supply Current	$I_{CCT}$		200	mA	
Tx_Disable Input Voltage – Low	$V_{IL}$	0	0.8	V	
Tx_Disable Input Voltage – High	$V_{IH}$	2.0	Vcc	V	
Tx_Fault Output Voltage – Low	$V_{OL}$	0	0.8	V	
Tx_Fault Output Voltage – High	$V_{OH}$	2.0	Vcc	V	
<b>Receiver</b>					
Receiver Supply Current	$I_{CCR}$		100	mA	
Receiver Data Output Differential Voltage	$V_{OD}$	0.4	1.3	V	
Rx_LOS Output Voltage – Low	$V_{OL}$	0	0.8	V	
Rx_LOS Output Voltage – High	$V_{OH}$	2.0	Vcc	V	
MOD_DEF (1) , MOD_DEF (2) - Low	$V_{IL}$	-0.6	Vcc x 0.3	V	
MOD_DEF (1) , MOD_DEF (2) - High	$V_{IH}$	Vcc x 0.7	Vcc + 0.5	V	

## Transmitter Electro-optical Characteristics:

PARAMETER	SYMBOL	MIN	TYP.	MAX	UNIT	NOTE
Optical Output Power	$P_o$	-9.5		-3	dBm	1
Extinction Ratio	ER	9			dB	
Center Wavelength	$\lambda_c$	1275		1355	nm	2
Spectral Width (RMS)	$\Delta\lambda$			3	nm	2
RIN	RIN			-117	dB/Hz	
Optical Rise time (20%-80% )	$t_r$			260	ps	3
Optical Fall time (20%-80% )	$t_f$			260	ps	3
Output Eye						Compliant with IEEE802.3z/D5.0

## Receiver Electro-optical Characteristics:

PARAMETER	SYMBOL	MIN	TYP.	MAX	UNIT	NOTE
Maximum Input Optical Power	$P_{max}$	-3			dBm	4
Minimum Input Optical Power	$P_{min}$			-23	dBm	4
Operating Wavelength	$\lambda$	1100		1600	nm	
Optical Return Loss	ORL	12			dB	
Receiver Electrical 3dB Upper Cutoff Frequency	---			1500	MHz	
LOS of Signal – Asserted	$P_A$	-35			dBm	
LOS of Signal – Deasserted	$P_D$			-22	dBm	
Loss of Signal –Hysteresis	$P_D - P_A$	0.5			dB	

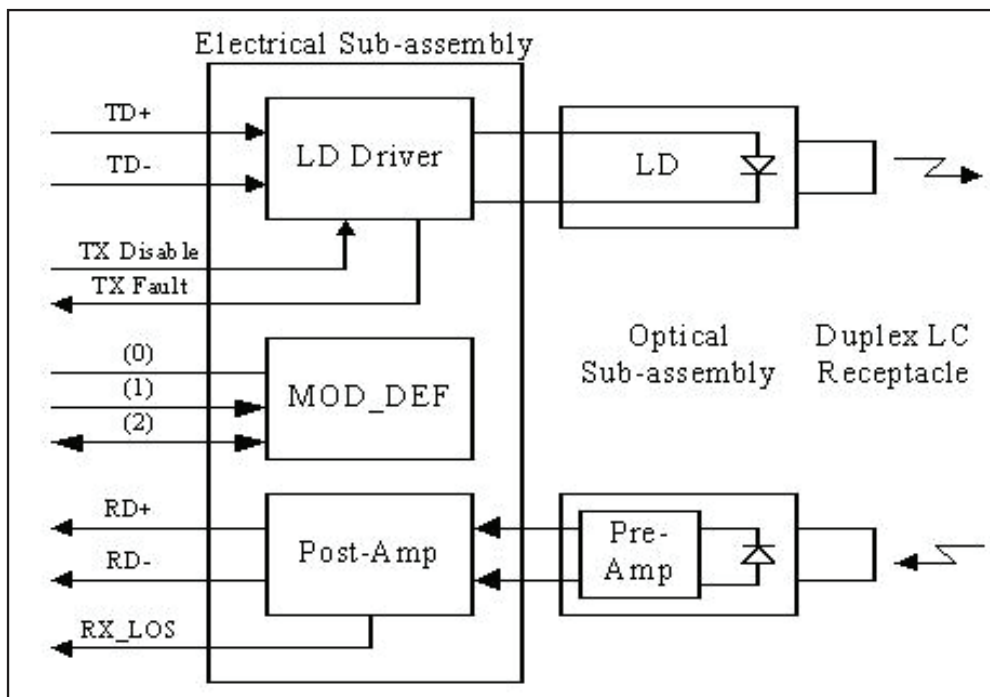
Note:

1. Measured average power coupled into 9/125 $\mu$ m single mode fiber.
2. In conformance with IEEE802.3z Figure 59-3 and FC-PI Figure 18.
3. These are 20-80% values.
4. Measured with 27-1 PRBS at BER<10<sup>-12</sup>

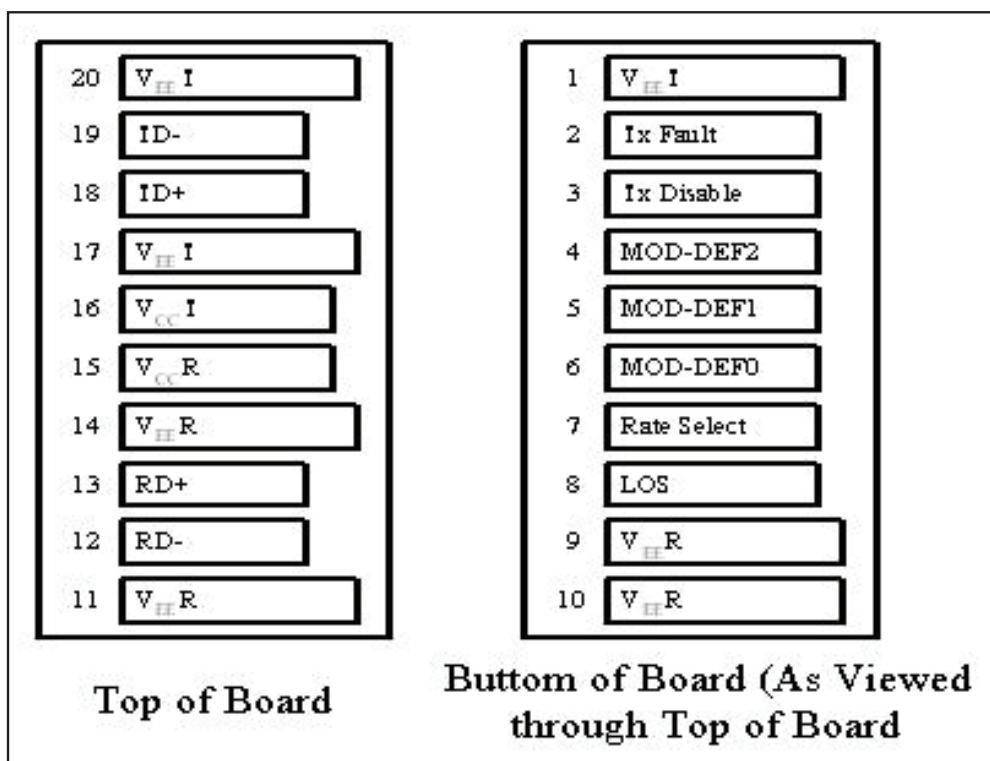
## Timing Characteristics:

PARAMETER	SYMBOL	MIN	TYP.	MAX	UNIT	NOTE
TX_DISABLE Assert Time	$t_{off}$			10	$\mu s$	
TX_DISABLE Negate Time	$t_{on}$			1	ms	
Time to initialize, include reset of TX_FAULT	$t_{init}$			300	ms	
TX_FAULT from fault to assertion	$t_{fault}$			100	$\mu s$	
TX_DISABLE time to start reset	$t_{reset}$	10			$\mu s$	
Receiver Loss of Signal Assert Time (off to on)	$t_{ARX\_LOS}$			100	$\mu s$	
Receiver Loss of Signal Assert Time (on to off)	$t_{DRX\_LOS}$			100	$\mu s$	

## Block Diagram of Transceiver:



## Pin out Diagram of Transceiver:



## Pin Out Table:

Pin	Symbol	Functional Description
1	VeeT	Transmitter Ground
2	TX Fault	Transmitter Fault Indication
3	TX Disable	Transmitter Disable – Module disables on high or open
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	Rate Select	Not Connected
8	LOS	Loss of Signal
9	VeeR	Receiver Ground
10	VeeR	Receiver Ground
11	VeeR	Receiver Ground
12	RD-	Inverse Received Data Out
13	RD+	Received Data Out
14	VeeR	Receiver Ground
15	VccR	Receiver Power

Package Contents:  
CA-1GSFP10

Other Products:  
CA-1GSFPMM | CA-10GSFP10

EAN Code:  
CA-1GSFP10 - 0700587952678

Certifications:



Box: L165.1mm X W 114.3mm X H 82.55mm  
L 6.5 x W 4.5 x H 3.25in

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