TTC-5G04-000

Short Wavelength Fiber Optic GBIC for Fiber Channel and Gigabit Ethernet

FEATURES:

- Compatible with 850 nm optical links.
- Duplex SC connector.
- Single +3.3V to +5V power supply.
- Conforms to Industry Standard Gigabit Interface Converter (GBIC) specification Rev. 5.1
- Hot-Pluggable
- 1063 Mbps to 1250 Mbps data rates
- Metallic shielding for superior EMI performance.

POWER SUPPLY ELECTRICAL CHARACTERISTICS

PARAMETERS	SYMBOL	MIN	TYP	MAX	UNIT
Supply Voltage	V_{DD}	3.0		5.5	V
Supply Current	I_{DD}		150	300	mA

TRANSMITTER ELECTRO-OPTICAL CHARACTERISTICS

PARAMETERS	SYMBOL	MIN	TYP	MAX	UNIT
Data Output Peak to Peak Differential Voltage(1)	$V_{i\ pk\text{-}pk}$	600		2000	mV
Output Optical Power 50/125 μ m	P_{OUT}	–9.5		–4	dBm avg.
Output Optical Power 62.5/125 μ m	P_{OUT}	–9.5		–4	dBm avg.
Optical Extinction Ratio(2)		9			dB
Optical Rise Time (3)	Tr			0.26	ns
Optical Fall Time (3)	Tf			0.26	ns
Total Transmitter Jitter Added at TP2(4)				227	ps
Couple Power Ratio	CPR	9			dB
RIN			-128	-117	dB/Hz
Center Wavelength	λ	830	850	860	nm
Spectral Bandwidth, RMS	Dl			0.85	nm

RECEIVER ELECTRO-OPTICAL CHARACTERISTICS

PARAMETERS	SYMBOL	MIN	TYP	MAX	UNIT
Data Output Peak to Peak Differential Voltage(1)	$V_{o\ pk\text{-}pk}$	375		2000	mV
Sensitivity			-20	-17	dBm avg
Rise Time (3)	Tr			0.4	ns
Fall Time (3)	Tf			0.4	ns
Operating Center Wavelength	λ	770		860	nm
Signal Detect – Asserted	P_A			-18	dBm avg
Signal Detect - Deasserted	P_D	-30			dBm avg

CONTROL INTERFACE ELECTRICAL CHARACTERISTICS:

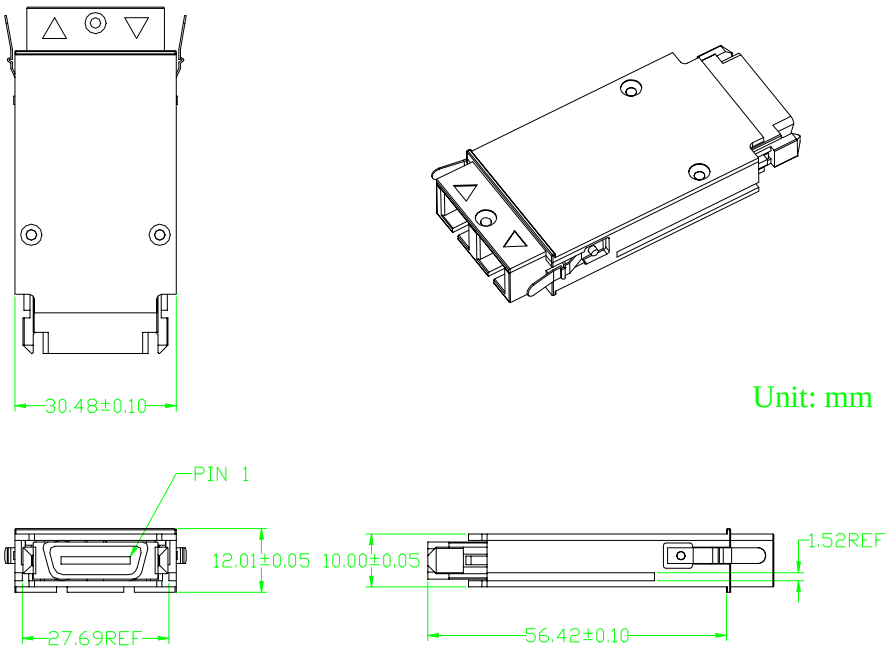
PARAMETERS	SYMBOL	MIN	TYP	MAX	UNIT
GBIC Output – High (5)	VOH	host_Vcc - 0.5		host_Vcc +0.5	V
GBIC Output – Low(5)	VOL	0		0.5	V
GBIC Input – High(6)	VIH	2		V_{DDT}+0.3	V
GBIC Input – Low(6)	VIL	0		0.8	V

(1) At 150ohm, differential, peak to peak.
(2) Optical Extinction Ratio is defined as the ratio of the average output optical power of the transmitter in the high ("1") state to the low ("0") state. This Optical Extinction Ratio is expressed in decibels (dB) by the relationship 10log(Phigh avg/Plow avg).
(3) These are unfiltered 20-80% values.
(4) The stressed receiver sensitivity is measured using the conformance test signal defined in 802.3z, section 38.6.11.
(5) A 4.7K to 10K Ohms pullup to host_Vcc is required
(6) A 10K Ohms to V_{DDT} is present on the GBIC

ABSOLUTE MAXIMUM RATINGS:

PARAMETERS	SYMBOL	MIN	MAX	UNIT
Storage Temperature	T_S	-40	100	°C
Lead Soldering Limits			260/10	°C/sec
Operating Temperature	T_A	0	70	°C
Supply Voltage	V_{CC}	-0.5	6	V

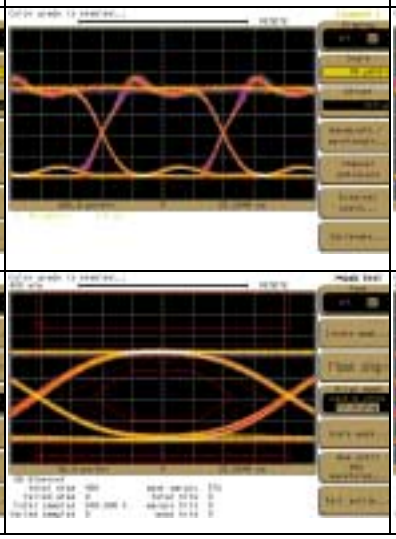
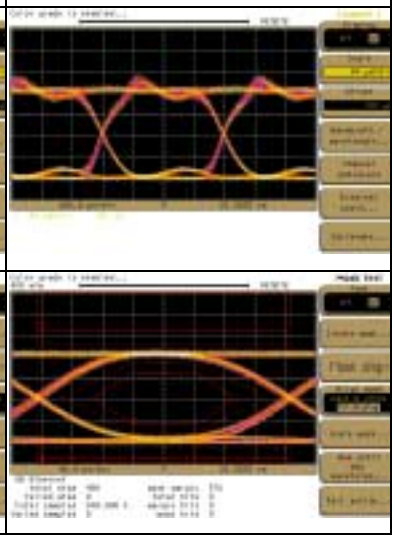
OUTLINE DIMENSIONS:



PIN Definition

Pin #	Pin Name	Sequence	Pin #	Pin Name	Sequence
1	RX_LOS	2	11	RGND	1
2	RGND	2	12	-RX_DAT	1
3	RGND	2	13	+RX_DAT	1
4	MOD_DEF(0)	2	14	RGND	1
5	MOD_DEF(1)	2	15	$V_{DD\,R}$	2
6	MOD_DEF(2)	2	16	$V_{DD\,T}$	2
7	TX_DISABLE	2	17	TGND	1
8	TGND	2	18	+TX_DAT	1
9	TGND	2	19	-TX_DAT	1
10	TX_FAULT	2	20	TGND	1

Optical Eye Diagram Over-temp Performance:

25℃	70℃	85℃
		

Remarks:

The 1st raw pictures show the unfiltered eye, and the 2nd raw pictures show the filtered ones.