TTC-5H04-000

Short Wavelength 1 × 9 Fiber Optic Transceiver for Gigabit Ethernet

FEATURES:

- Compatible with 850 nm optical links.
- Industry standard 1 × 9 package footprint.
- Duplex SC connector.
- Single +3.3V to +5V power supply.
- 1063 Mbps to 1250 Mbps data rates.
- Metallic shielding for superior EMI performance.

TRANSMITTER ELECTRO-OPTICAL CHARACTERISTICS

PARAMETERS	SYMBOL	MIN	TYP	MAX	UNIT
Supply Voltage	V_{CCT}	3.0		5.5	V
Supply Current	I_{CCT}		50	95	mA
Data Input Voltage-Low(1)	V_{IL}-V_{CC}	-1.810		-1.475	V
Data Input Voltage-High(1)	V_{IH}-V_{CC}	-1.165		-0.880	V
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
Supply Voltage	V_{CCR}	3.0		5.5	V
Supply Current	I_{CCR}		75	115	mA
Data Output Voltage-Low(1)	V_{IL}-V_{CC}	-1.810		-1.475	V
Data Output Voltage-High(1)	V_{IH}-V_{CC}	-1.165		-0.880	V
Sensitivity			-20	-17	dBm avg
Receiver Electric 3dB cutoff frequency				1500	MHz
Rise Time (3)	Tr			0.4	ns
Fall Time (3)	Tf			0.4	ns
Stressed Sensitivity 50/125 μ m (5)				-13.5	dBm avg
Stressed Sensitivity 62.5/125 μ m(5)				-12.5	dBm avg
Stressed Electronic Eye opening at TP4(4) (6)		201			ps
Operating Center Wavelength	λ	770		860	nm
Return Loss		12			dB
Signal Detect – Asserted	P_A			-18	dBm avg
Signal Detect - Deasserted	P_D	-30			dBm avg

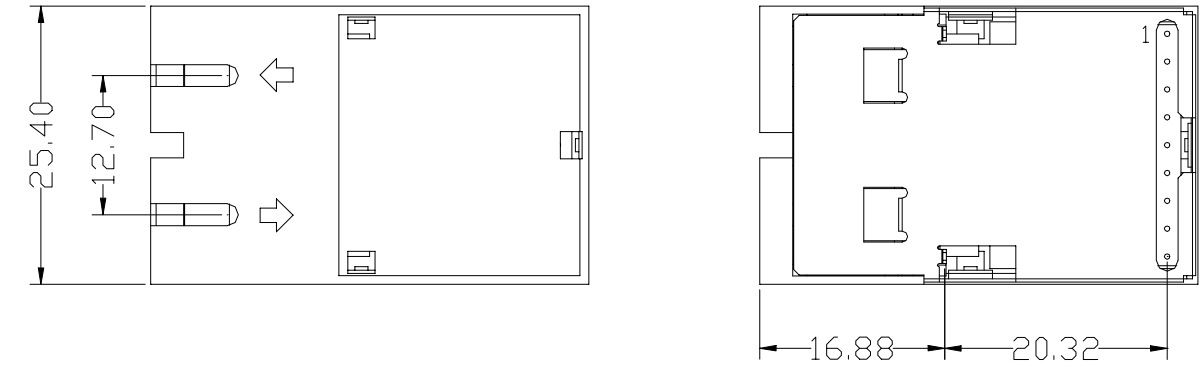
(1) Voltage levels listed are compatible with 100K Series PECL logic levels. The parts are compatible with 10K and 10KH Series logic when driven with differential signals.
(2) Optical Extinction Ratio is defined as the ratio of the average output optical power of the transmitter in the high ("1") state to the low ("0") state. This Optical Extinction Ratio is expressed in decibels (dB) by the relationship $10\log(P_{high\ avg}/P_{low\ avg})$.
(3) These are unfiltered 20-80% values.
(4) TP refers to the compliance point specified in 802.3z, section 38.2.1.
(5) The stressed receiver sensitivity is measured using the conformance test signal defined in 802.3z, section 38.6.11.
(6) The stressed eye opening jitter is measured under an average optical power 0.5dB greater than the specified stressed receiver sensitivity.

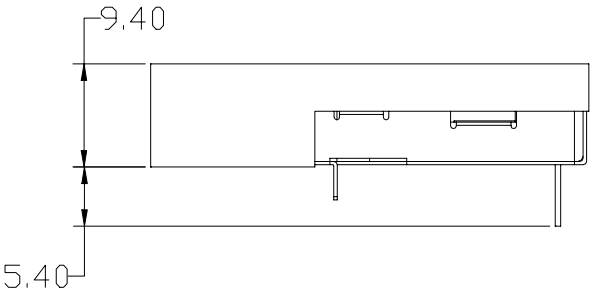
ABSOLUTE MAXIMUM RATINGS:

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	7	V

OUTLINE and PINOUT

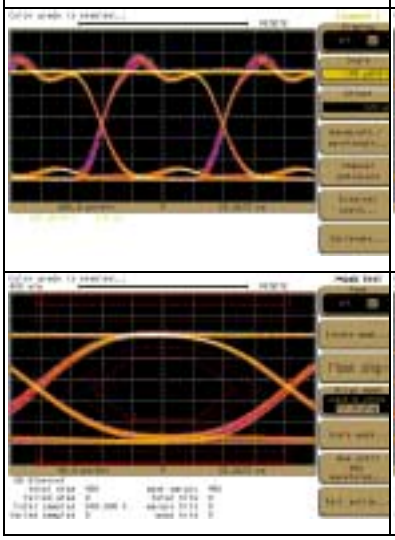
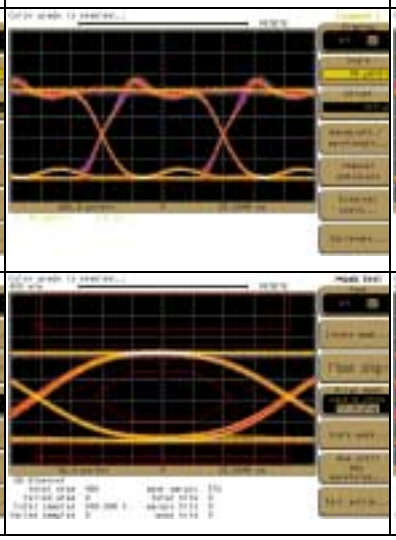
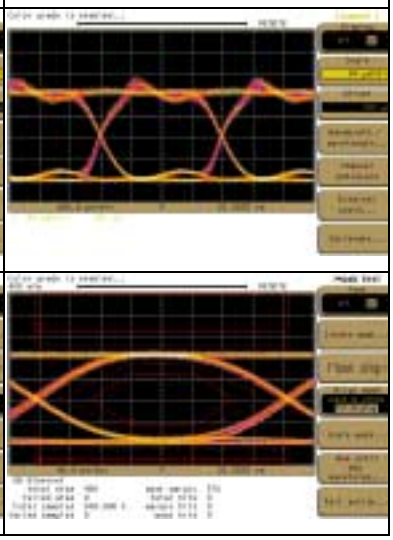
Unit:mm





Pinout
1. Rx V_{EE}
2. Rx Out+
3. Rx Out-
4. Signal Detect
5. Rx Vcc
6. Tx Vcc
7. Tx In-
8. Tx In+
9. Tx V_{EE}

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.