

# TTC-2T13

## 1 × 9 Fiber Optic Transceiver for 155 Mbps ATM, SONET OC-3/SDH STM-1

### FEATURES:

- Compatible with 850 nm optical links.
- Driving up to 2 km for multimode optical fiber.
- Industry standard 1 × 9 package footprint.
- Duplex ST connector.
- Single +5V power supply.
- Very low power consumption.
- High performance-to-cost ratio.



### TRANSMITTER ELECTRO-OPTICAL CHARACTERISTICS

PARAMETERS	SYMBOL	MIN	TYP	MAX	UNIT
Supply Current	$I_{CC}$		35	45	mA
Power Dissipation	$P_{DISS}$		0.175		W
Supply Voltage	$V_{CC}$	4.75		5.25	V
Wavelength	$\lambda$	830	850	860	nm
Output Optical Power <sup>(1)</sup>	$P_O$	-17 -12		-12 -7	dBm
Data Input Voltage - Low <sup>(2)</sup>	$V_{IL}$	-1.810		-1.475	$V_{CC}$
Data Input Voltage - High <sup>(2)</sup>	$V_{IH}$	-1.165		-0.880	$V_{CC}$
Output Extinction Ratio <sup>(3)</sup>		10			dB
Optical Rise Time	$t_r$		0.6	3.5	ns
Optical Fall Time	$t_f$		0.8	3.5	ns
Duty Cycle Distortion	DCD			0.6	ns p-p
Systematic Jitter	SJ			1.70	ns p-p
Random Jitter	RJ			0.52	ns p-p

(1) The launch power of (-17, -12) dBm is designed for standard 300 m distance requirement, (-12, -7) dBm is specially designed for the 2 km distance requirement, and both of the maximum optical power meets the class I laser safety standard.

(2) 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.

(3) This Optical Extinction Ratio is expressed in decibels (dB) by the relationship  $10 \cdot \log(P_{high\ avg}/P_{low\ avg})$ .

### RECEIVER ELECTRO-OPTICAL CHARACTERISTICS

PARAMETERS	SYMBOL	MIN	TYP	MAX	UNIT
Supply Current	$I_{CC}$		55		mA
Power Dissipation	$P_{DISS}$		0.275		W
Supply Voltage	$V_{CC}$	4.75		5.25	V
Data Output Voltage - Low <sup>(1)</sup>	$V_{OL}$	-1.810		-1.475	$V_{CC}$
Data Output Voltage - High <sup>(1)</sup>	$V_{OH}$	-1.165		-0.880	$V_{CC}$
Signal Detect Output Voltage - Low	$V_{IL}$	-1.810		-1.475	$V_{CC}$
Signal Detect Output Voltage - High	$V_{IH}$	-1.165		-0.880	$V_{CC}$
Rise Time	$t_r$		1.3	2.2	ns
Fall Time	$t_f$		1.3	2.2	ns
Duty Cycle Distortion	DCD			0.4	ns p-p
Systematic Jitter	SJ			0.90	ns p-p

Random Jitter	RJ		1.16	ns p-p	
Sensitivity			-27 -24	dBm	
Input power	$P_{in}$		0	dBm	
Operating Wavelength	$\lambda$	800	900	nm	
Power level (avg.) Detect Assert	$P_A$		-33	dBm	
Power level (avg.) Detect Deassert	$P_D$	-45		dBm	
Level detect hysteresis	$P_A-P_D$	1.75	2.25	2.75	dB
Signal Detect Assert Time			100	$\mu s$	
Signal Detect Deassert Time			350	$\mu s$	

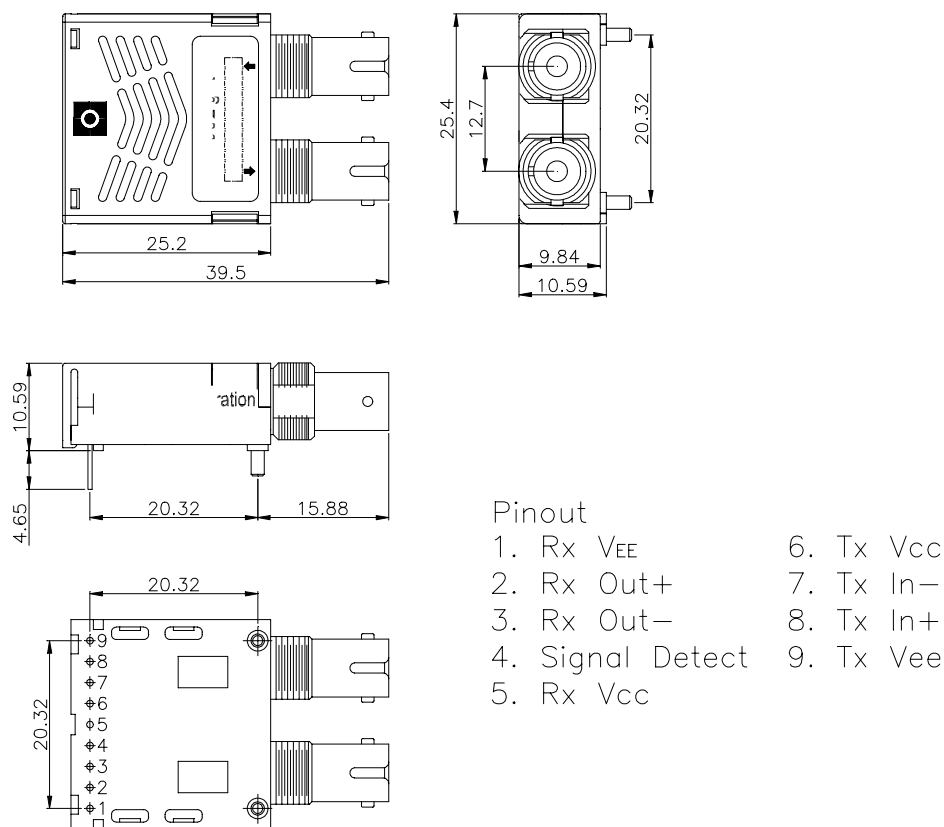
(1) Voltage levels listed are compatible with 100K Series PECL logic levels. The parts are compatible with 10K and 10KH Series logic when driven with differential signals.

### ABSOLUTE MAXIMUM RATINGS:

PARAMETERS	SYMBOL	MIN	MAX	UNIT
Storage Temperature	$T_S$	-40	100	$^{\circ}C$
Lead Soldering Limits			260/10	$^{\circ}C/sec$
Operating Temperature	$T_A$	0	70	$^{\circ}C$
Supply Voltage	$V_{CC}$	-0.5	7	V

### OUTLINE and PINOUT

Unit:mm



\* ST is registered trademark of AT&T.