Single-mode 622Mbps Transmitter / Receiver

Features

Transmitter：

- 2 x 10 pins, 2 x 8 pins metal case / plastic case
- 1310nm, 1550nm LD transmitter with automatic power control
- AC or DC coupled LVPECL or PECL compatible data input and output
- Single 3.3V or 5V power supply

Receiver：

- 2 x 10 pins, 2 x 8 pins metal case / plastic case
- InGaAs PIN detector
- PECL or TTL signal detect output
- Single 3.3V or 5V power supply

Specifications

Parameter		Symbol	Min.	Typ.	Max.	Unit
Transmitter						
Data Rate (NRZ)		B	-	622	-	Mb/s
Optical Output Power (avg.) (1) (2) (3)						
-1		P_o	-12	-	-6	dBm
-2		P_o	-6	-	0	dBm
Extinction Ratio		ER	8.3	-	-	dB
Optical Wavelength						
1310nm FP LD		λ_C	1260	1310	1360	nm
1310nm DFB LD		λ_C	1290	1310	1330	nm
1550nm FP LD		λ_C	1490	1550	1610	nm
1550nm DFB LD		λ_C	1530	1550	1570	nm
Spectral Width (RMS, -20dB)						
1310nm FP LD		$\Delta\lambda$	-	1.0	2.0	nm
1550nm FP LD		$\Delta\lambda$	-	1.0	2.5	nm
Side Mode Suppression Ratio						
1310nm DFB LD		SMSR	30	40	-	dB
1550nm DFB LD		SMSR	30	40	-	dB
Output Rise Time (10-90%)		t_r	-	0.5	0.8	ns
Output Fall Time (10-90%)		t_f	-	0.5	0.8	ns
Data Input (6)	DC Coupled	V_{IL} V_{IH}	V_{CC} -1.810 V_{CC} -1.165	- -	V_{CC} -1.475 V_{CC} -0.880	V V
	AC Coupled (Differential)	V_I	0.25	-	1.6	V
Supply Voltage		V_{CC}	3.10 4.75	3.3 5.0	3.50 5.25	V
Supply Current		I_{CC}	-	-	110	mA

Single-mode 622Mbps Transmitter / Receiver

Parameter		Symbol	Min.	Typ.	Max.	Unit
Receiver						
Data Rate (NRZ)		B	-	622	-	Mb/s
Optical Input (avg.) Sensitivity (1) (5)		P_{IN}	-	-	-28	dBm
Saturation		P_{SAT}	-3	0	-	dBm
Optical Wavelength		λ	1100	-	1600	nm
Output Rise Time (10-90%)		t_r	-	0.5	0.8	ns
Output Fall Time (10-90%)		t_f	-	0.5	0.8	ns
Data Output (6)	DC Coupled	V_{OL} V_{OH}	V_{CC} -1.840 V_{CC} -1.045	- -	V_{CC} -1.62 V_{CC} -0.88	V V
	AC Coupled (Differential)	V_I	0.6	-	1.8	V
Signal Detect Asserted (avg.)		P_A	-	-	-28	dBm
Signal Detect Deasserted (avg.)		P_D	-35	-	-	dBm
Hysteresis		P_{HYS}	-	2	-	dB
Supply Voltage		V_{CC}	3.10 4.75	3.3 5.0	3.50 5.25	V
Supply Current		I_{CC}	-	-	100	mA

Notes：

(1) With 0.275 NA, 9/125μm fiber.
(2) Driven with a differential signal.
(3) Class 1 eye safe per FDA and IEC.
(4) Eye mask diagram is compliant to ITU-T G.957 Eye Diagram.
(5) 2^{23} -1 PRBS, BER= 10^{-10}.
(6) Compatible with LVPECL and PECL logic levels.
(7) The transmitter output should not be viewed directly.

Absolute Maximum Ratings

Parameter		Min.	Max.	Unit
Operating Temperature	-1	0	70	°C
	-2	-40	85	°C
Storage Temperature		-40	100	°C
Lead Soldering Limits		-	240/10	°C /sec
Supply Voltage		-0.2	4	V

Single-mode 622Mbps Transmitter / Receiver

Ordering Information

□ 0 □□ S M 2 - □□□□□□□□□□

Operating Temperature Range：
1：0 ~ 70°C
2：-40 ~ 85°C

Data Coupling & SD Output Level：

Symbol	Tx Coupling	Rx Coupling	SD
C	AC	DC	PECL
D	AC	DC	TTL
E	AC	AC	PECL
F	AC	AC	TTL
G	DC	DC	PECL
H	DC	DC	TTL
I	DC	AC	PECL
J	DC	AC	TTL

Receptacle / Pigtail Type：
R1：Receptacle Type
PG：Pigtail Type
(fiber length 100cm)

Package Type：
G：2X8 Pins Metal Case
P：2X8 Pins Plastic Case
K：2X10 Pins Metal Case

Supply Voltage：
5：5V
3：3.3V

Connector Type：
SC：SC Connector (only for pigtail type)
FC：FC Connector
ST：ST Connector

Laser Type：
L：FP LD
F：DFB LD

Tx Output Power Grade：
(refer to Specifications)
1：-1
2：-2

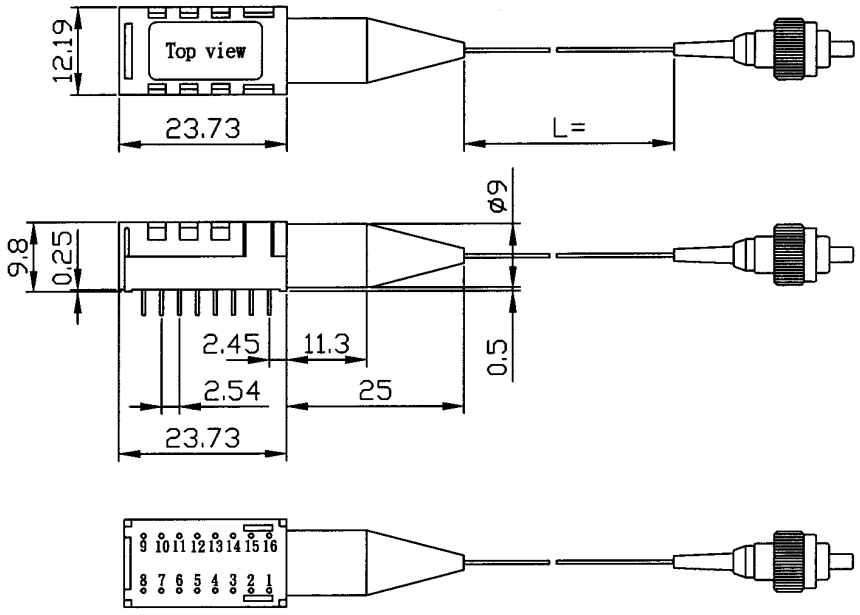
Wavelength：
13：1310nm
15：1550nm

TX / RX：
T：Transmitter
R：Receiver

Single-mode 622Mbps Transmitter / Receiver

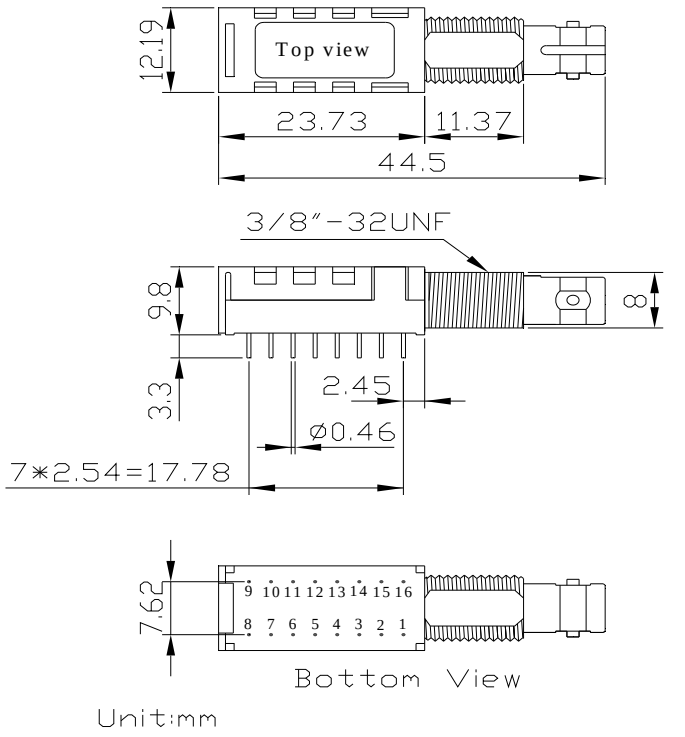
Outline Drawing (2X8 Pins Package)

2X8 Pins Plastic Case：

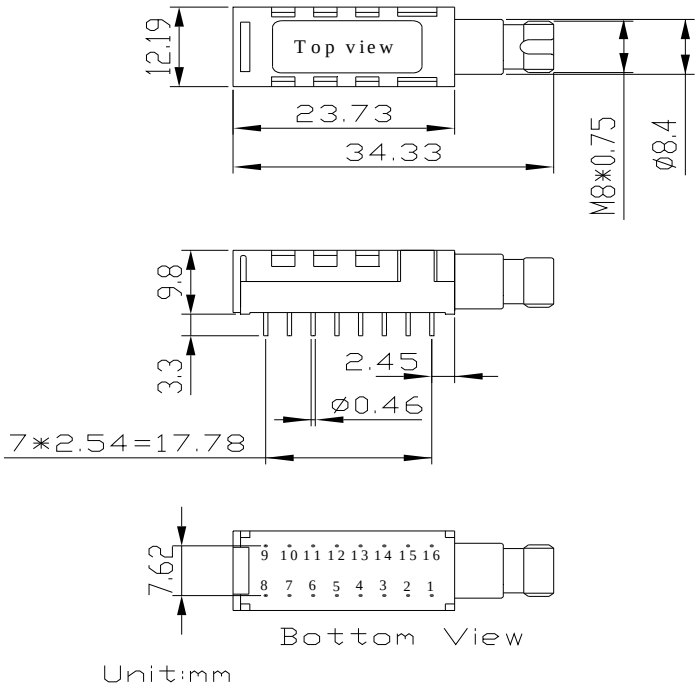


UNIT：mm

Single-mode 622Mbps Transmitter / Receiver



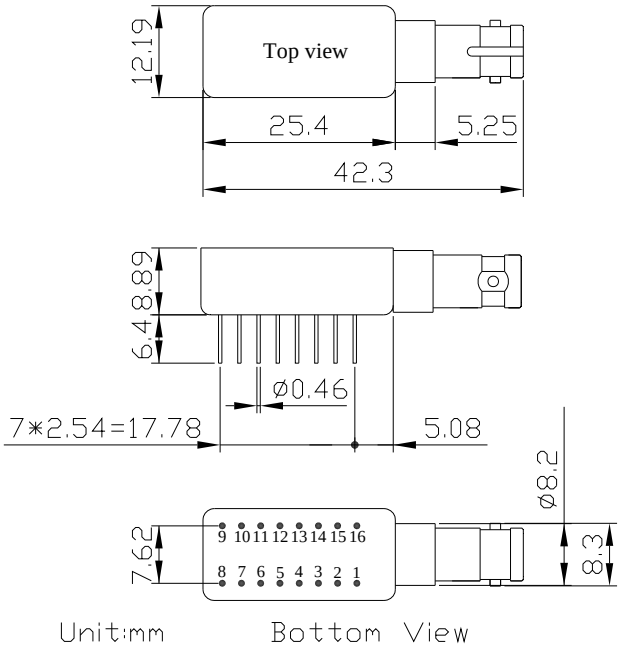
Unit:mm



Unit:mm

Single-mode 622Mbps Transmitter / Receiver

2X8 Pins Metal Case：



UNIT：mm

Pinout Description (2X8 Pins Package)

Transmitter Pin Assignment

Pin No.	Description
1	No Connection (Note)
2	No Connection
3	Vee (Ground)
4	Vee (Ground)
5	Vee (Ground)
6	Vee (Ground)
7	No Connection
8	No Connection (Note)
9	No Connection (Note)
10	Vee (Ground)
11	Vcc (Supply Voltage)
12	Vcc (Supply Voltage)
13	Vee (Ground)
14	Data In
15	Data In (Inverted)
16	No Connection (Note)

Receiver Pin Assignment

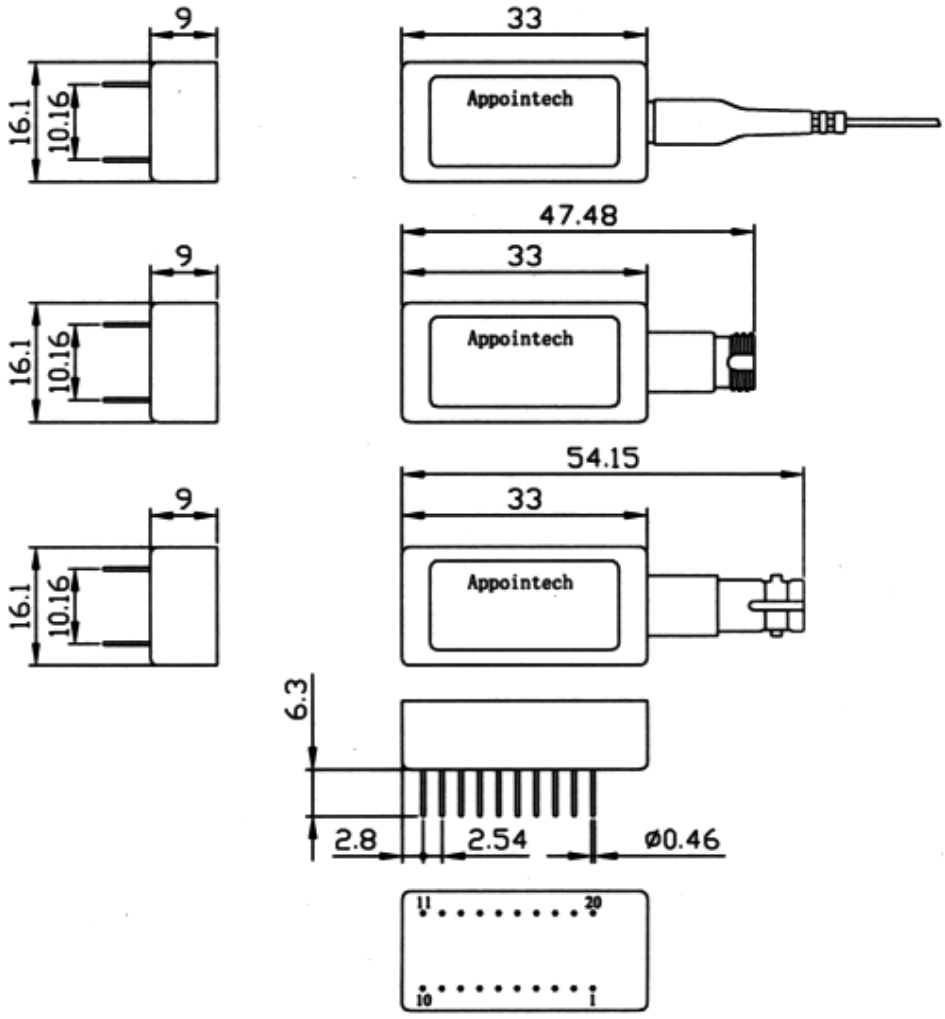
Pin No.	Description
1	No Connection (Note)
2	Data Out (Inverted)
3	Data Out
4	Vcc (Supply Voltage)
5	Vcc (Supply Voltage)
6	Vcc (Supply Voltage)
7	Vee (Ground)
8	No Connection (Note)
9	No Connection (Note)
10	No Connection
11	Vee (Ground)
12	Vee (Ground)
13	Vee (Ground)
14	SD
15	/SD
16	No Connection (Note)

Note：Metal case version Pin1, Pin8, Pin9 and Pin16 internal connect to case.

Single-mode 622Mbps Transmitter / Receiver

Outline Drawing (2X10 Pins Package)

2X10 Pins Metal Case：



UNIT：mm

Single-mode 622Mbps Transmitter / Receiver

Pinout Description (2x10 Pins Package)

Transmitter Pin Assignment

Pin No.	Description
1	No Connection
2	No Connection
3	No Connection
4	No Connection
5	Vee(Ground)
6	Vcc(Supply Voltage)
7	Transmitter Disable (Note)
8	Vcc(Supply Voltage)
9	Vcc(Supply Voltage)
10	No Connection
11	Vee(Ground)
12	Vcc(Supply Voltage)
13	Vee(Ground)
14	Vee(Ground)
15	Data In (Inverted)
16	Data In
17	No Connection
18	Vcc(Supply Voltage)
19	No Connection
20	No Connection

Receiver Pin Assignment

Pin No.	Description
1	No Connection
2	No Connection
3	No Connection
4	No Connection
5	No Connection
6	Vee(Ground)
7	Data Out
8	Vee(Ground)
9	Data Out (Inverted)
10	No Connection
11	Vcc(Supply Voltage)
12	SD
13	Vee(Ground)
14	/SD
15	Vee(Ground)
16	Vee(Ground)
17	No Connection
18	No Connection
19	No Connection
20	No Connection

Note：Input TTL Logic Low Level to Switch Laser “ON”.
Input TTL Logic High Level to Switch Laser “OFF”.