

Single-mode 1.25Gbps Transmitter / Receiver

Features

Transmitter :

- 2 x 10 pins, 2 x 8 pins metal 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
- 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	-	1250	-	Mb/s	
Optical Output Power (avg.) ^{(1) (2) (3)}						
-1	P_o	-12	-	-6	dBm	
-2	P_o	-6	-	0	dBm	
Extinction Ratio	ER	9	-	-	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 (20-80%)	t_r	-	-	0.26	ns	
Output Fall Time (20-80%)	t_f	-	-	0.26	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 1.25Gbps Transmitter / Receiver

Parameter		Symbol	Min.	Typ.	Max.	Unit
Receiver						
Data Rate (NRZ)		B	-	1250	-	Mb/s
Optical Input (avg.) Sensitivity ^{(1) (5)}		P _{IN}	-	-	-23	dBm
Saturation		P _{SAT}	-3	0	-	dBm
Optical Wavelength		λ	1100	-	1600	nm
Output Rise Time (20-80%)		t _r	-	-	0.4	ns
Output Fall Time (20-80%)		t _f	-	-	0.4	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	-	-	-23	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 IEEE802.3z Eye Diagram.
- (5) 2⁷ -1 PRBS, BER= 10⁻¹².
- (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 1.25Gbps Transmitter / Receiver

Ordering Information

□ 0 □ □ S M 3 - □ □ □ □ □ □ □ □ □ □ □ □

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
- 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

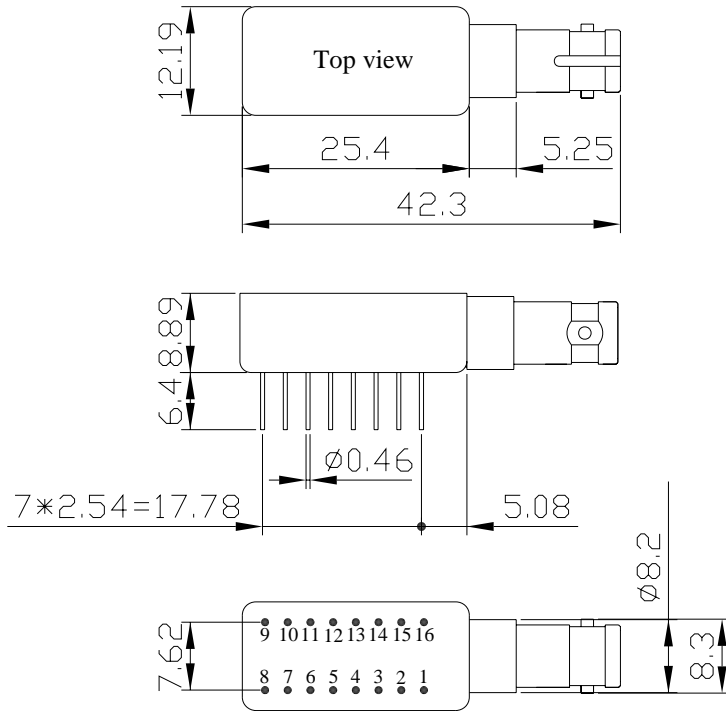
TX / RX :

- T : Transmitter
- R : Receiver

Single-mode 1.25Gbps Transmitter / Receiver

Outline Drawing (2X8 Pins Package)

2X8 Pins Metal Case :



Unit:mm Bottom View

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

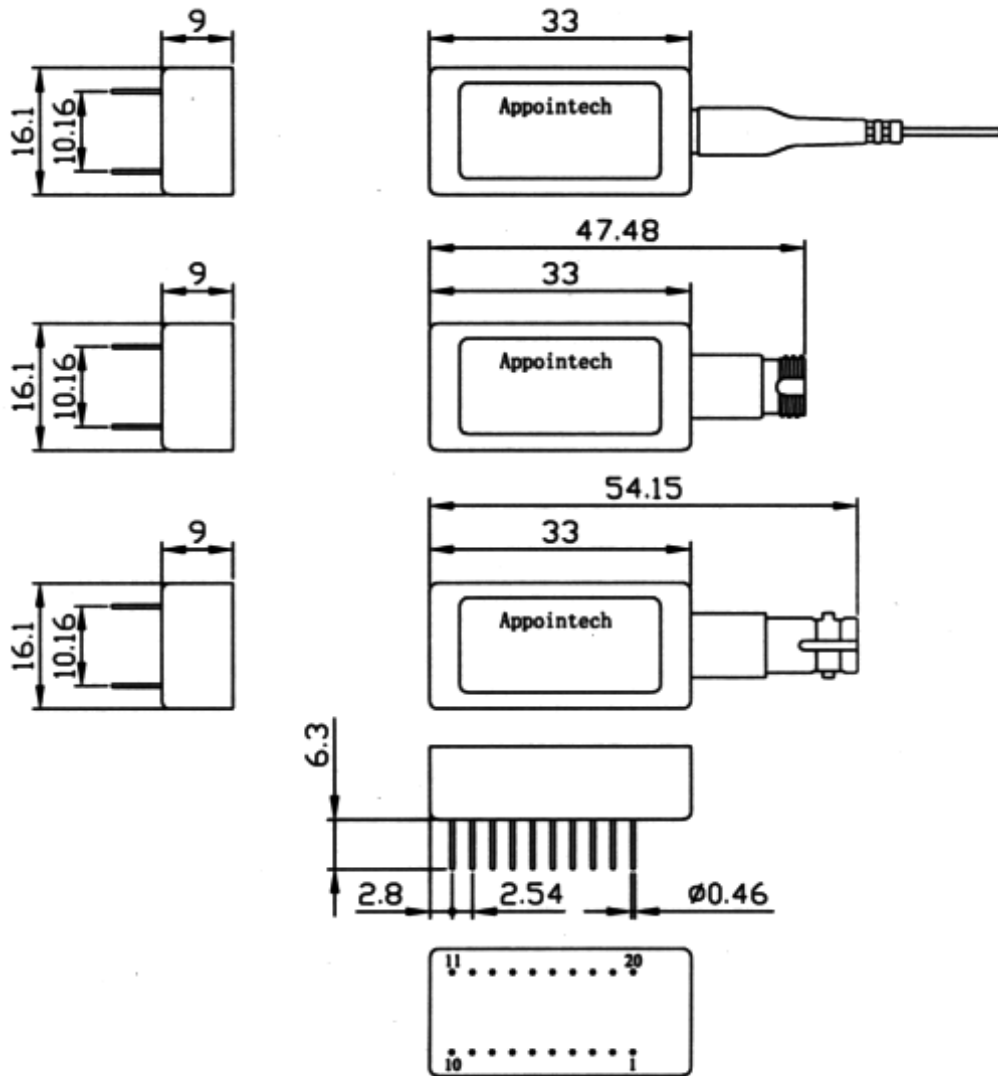
Pin No.	Description
1	No Connection ^(Note)
2	Data Out (Inverted)
3	Data Out
4	Vcc (Supply Voltage)
5	Vcc (Supply Voltage)
6	Vcc (Supply Voltage)
7	Vee (Ground)
8	No Connection ^(Note)
9	No Connection ^(Note)
10	No Connection
11	Vee (Ground)
12	Vee (Ground)
13	Vee (Ground)
14	SD
15	/SD
16	No Connection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

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

Single-mode 1.25Gbps Transmitter / Receiver

Outline Drawing (2X10 Pins Package)

2X10 Pins Metal Case :



UNIT : mm

Single-mode 1.25Gbps 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".

Appointech, Inc.

6F-2, NO.192 Tung-Kuan Rd.,
 Hsinchu, Taiwan, R.O.C.
 TEL : 886-3-573-8478
 FAX : 886-3-573-8441
 E-mail : sales@appointech.com
<http://www.appointech.com>