

# Single-mode 266Mbps Transmitter / Receiver

## Features

### Transmitter :

- 2 x 8 pins plastic case
- 1310nm, or 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 8 pins 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	
<b>Transmitter</b>						
Data Rate (NRZ)	B	10	266	300	Mb/s	
Optical Output Power (avg.) <sup>(1) (2) (3)</sup>						
-1	$P_o$	-12	-	-6	dBm	
-2	$P_o$	-6	-	0	dBm	
Extinction Ratio	ER	8.3	-	-	dB	
Optical Wavelength						
1310nm FP LD	$\lambda_c$	1260	1310	1360	nm	
1310nm DFB LD	$\lambda_c$	1290	1310	1330	nm	
1550nm FP LD	$\lambda_c$	1490	1550	1610	nm	
1550nm DFB LD	$\lambda_c$	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%)	$t_r$	-	0.4	1.0	ns	
Output Fall Time (10-90%)	$t_f$	-	1.0	1.5	ns	
Data Input <sup>(6)</sup>	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	

Parameter		Symbol	Min.	Typ.	Max.	Unit
<b>Receiver</b>						
Data Rate (NRZ)		B	-	266	300	Mb/s
Optical Input (avg.) Sensitivity <sup>(1)</sup> <sup>(5)</sup>		P <sub>IN</sub>	-	-36	-34	dBm
Saturation		P <sub>SAT</sub>	-3	0	-	dBm
Optical Wavelength		λ	1100	-	1600	nm
Output Rise Time (10-90%)		t <sub>r</sub>	-	1.5	2.0	ns
Output Fall Time (10-90%)		t <sub>f</sub>	-	1.5	2.0	ns
Data Output <sup>(6)</sup>	DC Coupled	V <sub>OL</sub> V <sub>OH</sub>	V <sub>CC</sub> -1.840 V <sub>CC</sub> -1.045	- -	V <sub>CC</sub> -1.62 V <sub>CC</sub> -0.88	V V
	AC Coupled (Differential)	V <sub>I</sub>	0.6	-	1.8	V
Signal Detect Asserted (avg.)		P <sub>A</sub>	-	-	-35	dBm
Signal Detect Deasserted (avg.)		P <sub>D</sub>	-45	-	-	dBm
Hysteresis		P <sub>HYS</sub>	-	2	-	dB
Supply Voltage		V <sub>CC</sub>	3.10 4.75	3.3 5.0	3.50 5.25	V
Supply Current		I <sub>CC</sub>	-	-	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<sup>23</sup> -1 PRBS, BER= 10<sup>-10</sup>.
- (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

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## Ordering Information

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**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

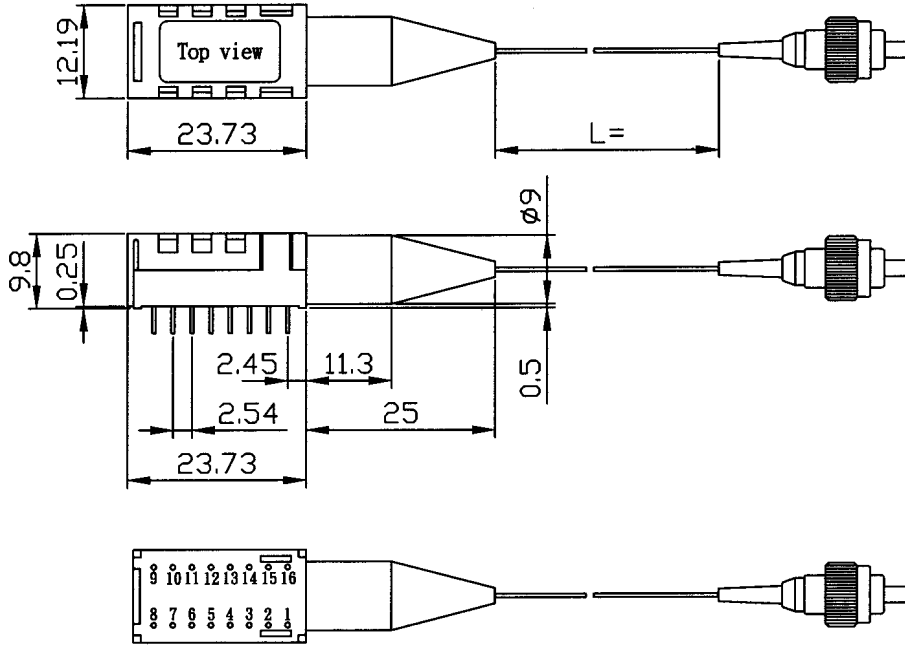
**TX / RX :**

T : Transmitter

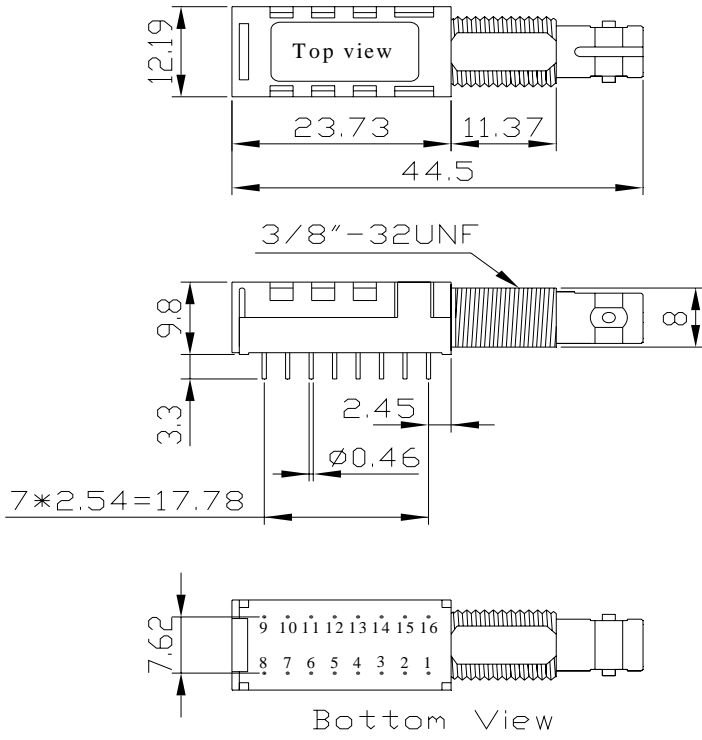
R : Receiver

## Outline Drawing (2x8 pins Plastic Package)

### A-type Pin-Out Pigtailed



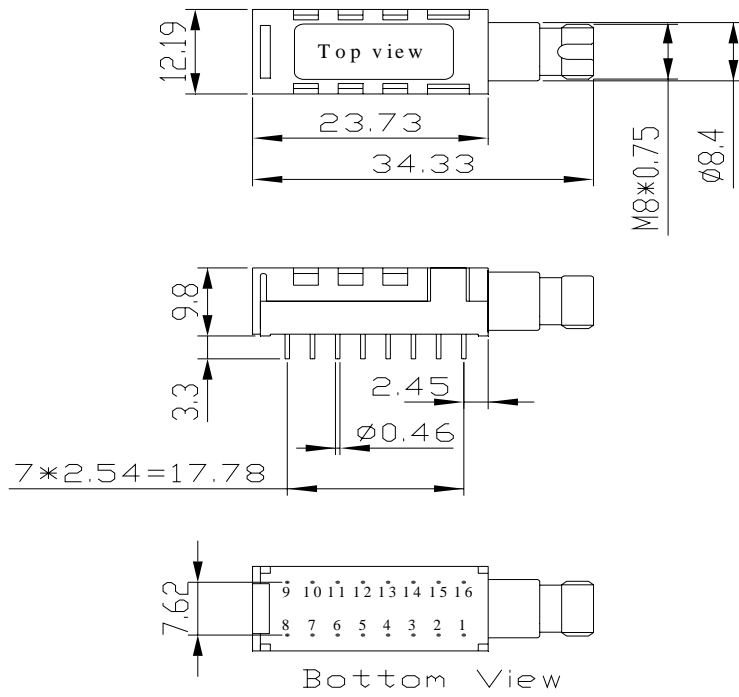
### ST Receptacle



Unit:mm

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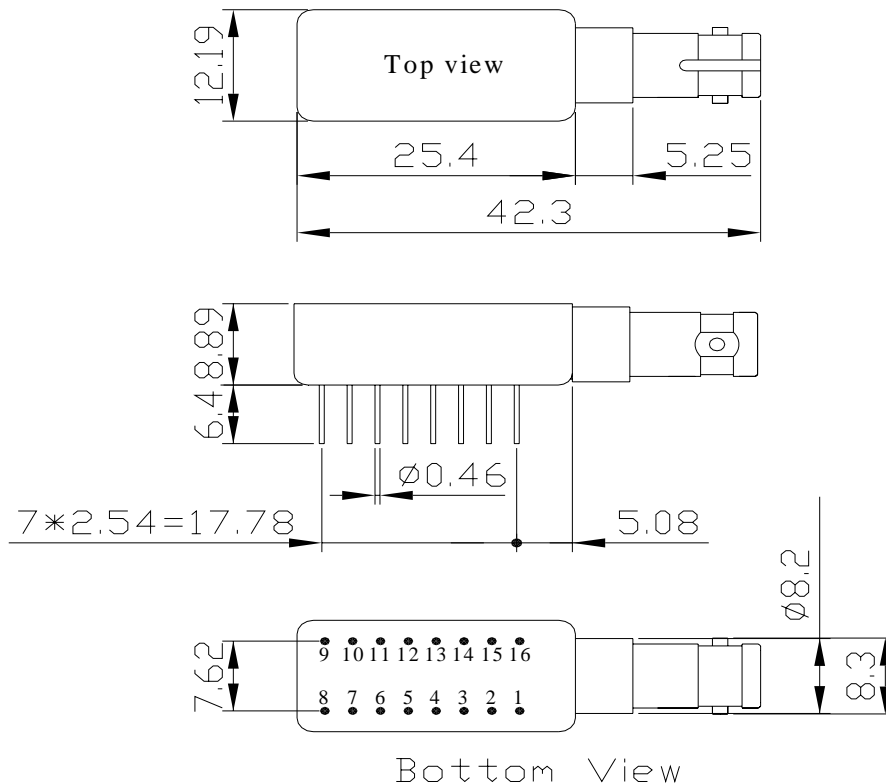
## FC Receptacle



Unit:mm

## Outline Drawing (2X8 Pins Metal Package) :

### A-type Pin-Out



## A-Type Pin-out Description ( 2X8 Pins Package)

Transmitter Pin Assignment

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

Receiver Pin Assignment

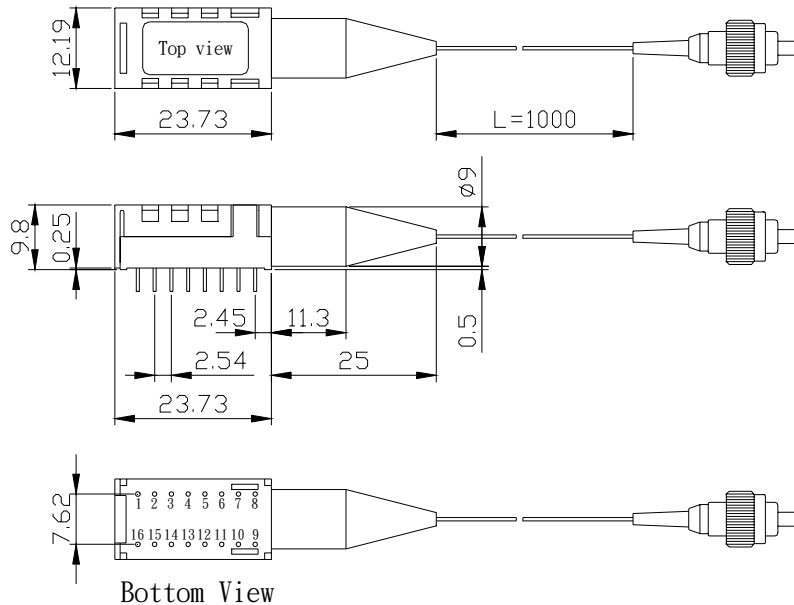
Pin No.	Description
1	No Connection <sup>(Note)</sup>
2	Data Out (Inverted)
3	Data Out
4	Vcc (Supply Voltage)
5	Vcc (Supply Voltage)
6	Vcc (Supply Voltage)
7	Vee (Ground)
8	No Connection <sup>(Note)</sup>
9	No Connection <sup>(Note)</sup>
10	No Connection
11	Vee (Ground)
12	Vee (Ground)
13	Vee (Ground)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

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

## Outline Drawing (2x8 pins Plastic Package)

### B-type Pin-Out

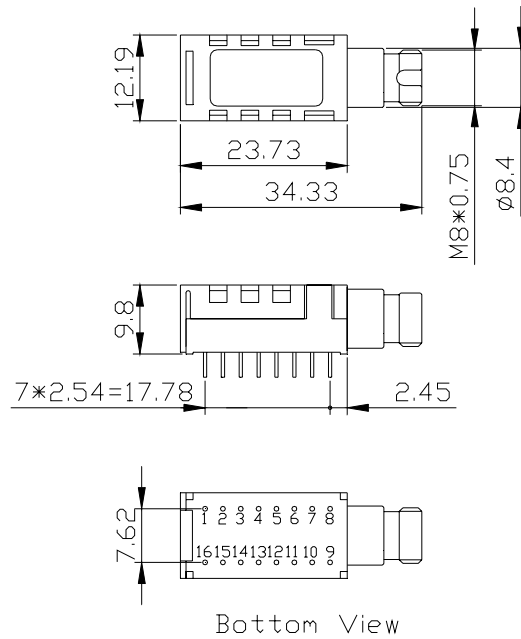
### Pigtailed



UNIT : mm

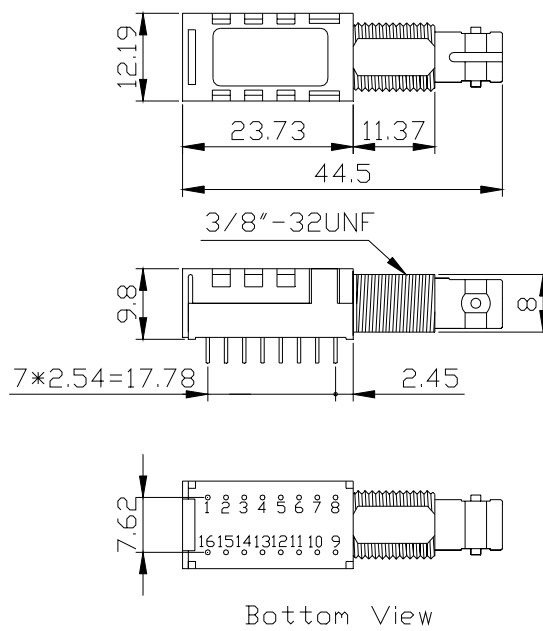
# Single-mode 266Mbps Transmitter / Receiver

## FC Receptacle



unit: mm

## ST Receptacle



unit: mm

## B-Type Pin-out Description ( 2X8 Pins Package)

### Transmitter Pin Assignment

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

### Receiver Pin Assignment

Pin No.	Description
1	No Connection <sup>(Note)</sup>
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 <sup>(Note)</sup>
9	No Connection <sup>(Note)</sup>
10	No Connection
11	Vee (Ground)
12	Vee (Ground)
13	Vee (Ground)
14	SD
15	SD(inverted)
16	No Connection <sup>(Note)</sup>

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

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