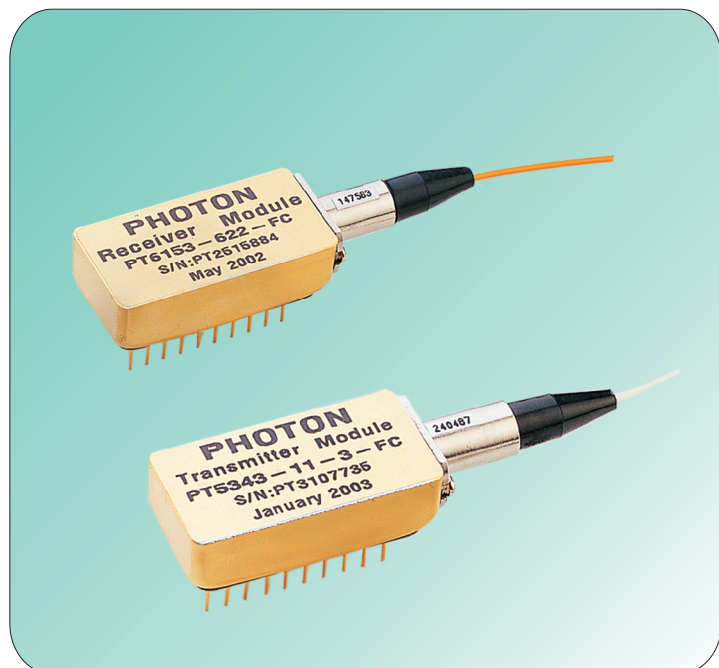


SDH/SONET Transmitter/Receiver Module



Applications

- SDH/SONET
- ATM
- High speed data communication

Features

Transmitter Module:

- Single 5V power supply
- SDH/SONET compatible
- Uncooled laser with automatic optical power control for constant output
- Operating data rates from 1Mb/s to 1300Mb/s(NRZ)
- PECL and ECL compatible, differential inputs
- Operating temperature range from -40°C to +85°C
- Meets ITU-T G.957 requirements

Receiver Module:

- InGaAs PIN photodiode receiver
- Pigtailed and 20-pin DIP metal package
- PECL interface logic level
- Intermediate and long reach SDH/SONET compliance
- Meets the intent of Bellcore reliability practices
- Operating at 1.3 μm or 1.55 μm wavelengths

Description

Transmitter Module:

The transmitter module is designed for transmitter systems and high-speed data communications. For intra-office and intermediate-reach applications, the transmitters are configured to operate at SDH/SONET rates up to OC-24.

The module contains APC function, temperature compensation circuit and ECL/PECL logic interface, laser bias monitor, output optical power monitor and transmitter disable function.

Receiver Module:

The receiver module is designed for transmission systems and medium to high-speed data communication applications with data rate up to 1300Mbits/s. Compact packaging with wide dynamic range makes this receivers ideal for both telecommunication and data communication applications. Manufactured in a 20-pin DIP, the receiver module uses a planar, rear illuminated InGaAs PIN photodetector that allows it to be used with wavelength from 1.1 μm to 1.6 μm.

Characteristics

Transmitter Characteristics

Parameter		Symbol	Min	Typ	Max	Units
Operates Data Rates	PT5□□3-□□-3	-	5	155	300	Mb/s
	PT5□□3-□□-4	-	5	622	700	
Average Power Output		Po	-10	-	+3	dBm
Extinction Ratio		EX	10			dB
Center Wavelength*	PT53□□-□□-□	λ	-	1310	-	nm
	PT55□□-□□-□		-	1550	-	

*Center wavelength and spectral width meet ITU-T G.957 requirements

SDH/SONET Transmitter/Receiver Module

Receiver Characteristics

Parameter	OC-1			STM-1/OC-3			STM-4/OC-12			OC-24			Unit
	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	
Data Rates	5	52	70	5	155	200	5	622	700	5	1250	1300	Mb/s
Sensitivity	-	-42	-40	-	-38	-35	-	-32	-30	-	-25	-23	dBm
Saturation	-3	0	-	-3	0	-	-3	0	-	-3	0	-	dBm
Signal Detect Assert Level	-50	-	-	-50	-	-	-40	-	-	-35	-	-	dBm
Signal Detect Deassert Level	-	-	-40	-	-	-35	-	-	-30	-	-	-23	dBm
SD Hysteresis	-	3	-	-	3	-	-	3	-	-	3	-	dB

Electrical Characteristics

Parameter	Symbol	Min	Typ	Max	Units
Power Supply Voltage[1]	V	4.75	5.0	5.50	V
Power Supply Current Drain	I _{TOTAL}	-	70	130	mA
Input Data Voltage :					
Low	V _{IL}	-1.810	-	-1.475	V
High	V _{IH}	-1.165	-	-0.880	V
Transmitter Disable Voltage [2]	VD	2.0	-	V _{cc}	V
Transmitter Enable Voltage	VEN	VEE-0.8	-	VEE+0.8	V
Laser Bias Voltage[3]	VB	-	0.03	0.70	V
Laser Monitor Voltage (50% duty cycle)[4]	VF	-	0.03	0.20	V

[1]With VEE connected to 5V,Vcc must be at 0V;With Vcc connected to +5V,VEE must be at 0V.

[2]The transmitter is normally enabled and only requires an external voltage to disable.

[3]The laser bias current is obtained by dividing the bias voltage by the 10Ω current sensing resistors.

[4]The laser backface monitor voltage is a scaled output that tracks the transmitter optical output power.

Transmitter Module

Parameter	Symbol	Min	Max	Units
Supply Voltage*	-	-	5.5	V
Operating Temperature Range	-Top	-40	+85	°C
Storage Temperature Range	Tstg	-40	+85	°C
Lead Soldering Temperature/Time	Tsld	-	240/10	°C/s
Relative Humidity (Non-Condensing)	RH	-	85%	-
Minimum Fiber Bend Radius	-	1.00(25.4)	-	In.(mm)

[1]With VEE connected to 5V,Vcc must be at 0V;with Vcc connected to =5V,VEE must be at 0V.

Receiver Module

Parameter	Symbol	Min	Max	Units
Storage Temperature	Tstg	-40	+85	°C
Operating Temperature	Top	-40	+85	°C
Input Voltage	-	GND	Vcc	V
Power Supply Voltage	Vcc-Vee	0	+6	V
	Vcc	+4.75	+5.25	V
Lead Soldering Temperature/Time	Tsld	-	240/10	°C/s

SDH/SONET Transmitter/Receiver Module

Pin Descriptions

Transmitter Module

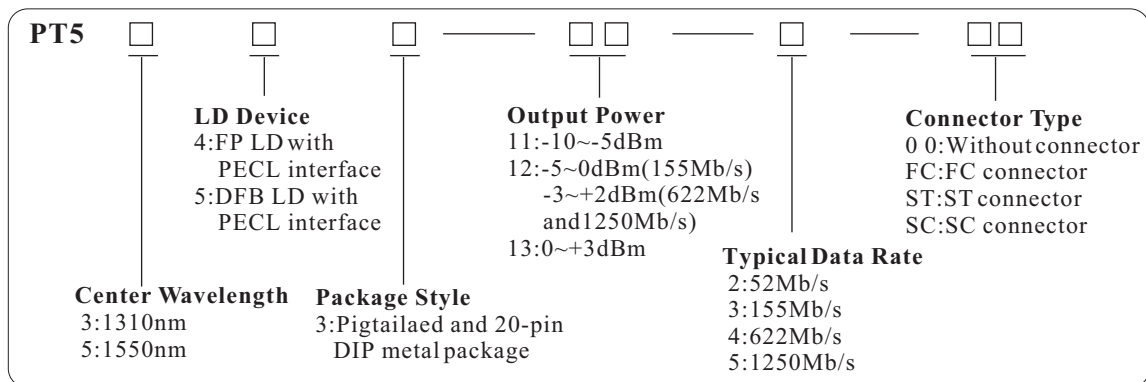
Pin	Function
1	Case
2	Bias Monitor(+):BM+
3	NC
4	Bias Monitor(-):BM-
5	VEE
6	Vcc
7	Transmit Disable:DIS
8	Vcc
9	Vcc
10	NC
11	Case
12	Vcc
13	Case
14	VEE
15	/DATA
16	DATA
17	Back Face Monitor(-):FM-
18	Vcc
19	Back Face Monitor(+):FM+
20	Case

Receiver Module

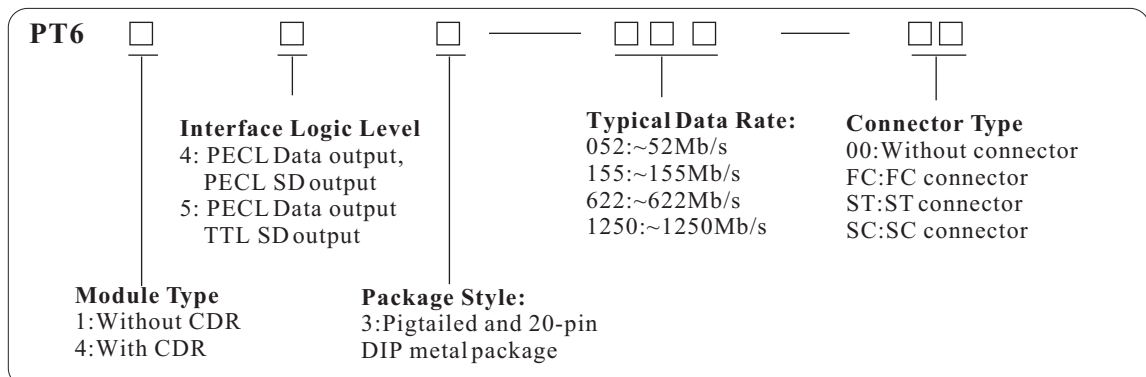
Pin	Function
1	Case
2	NC
3	NC
4	NC
5	NC
6	VEE
7	DATA
8	VEE
9	/DATA
10	NC
11	Vcc
12	Signal Detect
13	Case
14	/Signal Detect
15	VEE
16	NC
17	NC
18	NC
19	NC
20	Case

Ordering Information

Transmitter Module

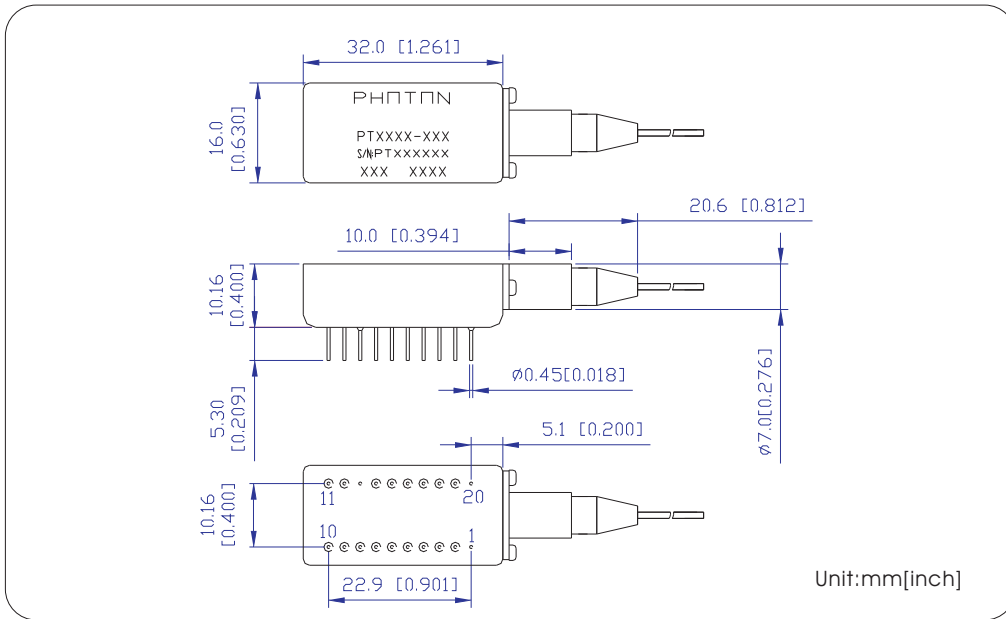


Receiver Module



SDH/SONET Transmitter/Receiver Module

Mechanical Outline



Typical Application Circuit

