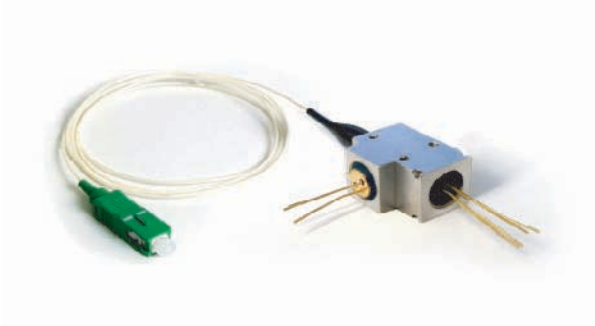
ODP-43-PE



Features

- Low cost 1490 DFB TX, 1310 nm RX design
- High Isolation
- 0 to 70˚C operation
- TX data rates up to 1250 Mbps
- Multiple Burst Receive TIA versions available
- Compliant to ITU-T G.983.3 FSAN @ 155 and 622 Mbps

Absolute Maximum Ratings

Parameter	Min	Typical	Max	Units
Operating Temperature(case)	0	-	70	°C
Storage Temperature	-40	-	85	°C

Module Requirements

Parameter	Min	Typical	Max	Units
1490 TX to 1310 RX crosstalk	-	-60	-47	dB
Back Reflection @ 1310 nm	-	-20	-20	dB
Back Reflection @ 1490 nm	-	-6	-6	dB

Transmitter Requirements

Parameter	Symbol	Min	Typical	Max	Units
Wavelength	λ	1480	1490	1500	nm
Spectral Width (-20 dB)	$\Delta\lambda$	-	-	1	nm
Side Mode Supression ratio	SMSR	30	-		dB
1/2 P_{peak} set point @ 25°C (FSAN)	P_{set}	-	1.5	-	dBm
1/2 P_{peak} over temp and EOL (FSAN)	P_{ave}	-0.5	-	4	dBm
Bias Current	I_{bias}	6	-	70	mA
Bias Current@EOL	$I_{bias,EOL}$	-	-	100	mA
Modulation Current	I_{mod}	10	-	80	mA
PD Monitor Current	$I_{PD,mon}$	50	-	1000	µA
Forward Voltage	V_f	-	1.2	1.8	Volts
Rise/Fall Time [a]	tr/tf	-	-	0.5	ns
PD Dark Current	$I_{PD, dark}$	-	-	1	µA
PD Capacitance	C_{PD}	-	10	15	pF

[a] 10% to 90%

Digital Receiver Characteristics (155 Mbps)

Parameter	Symbol	Min	Typical	Max	Units
Detection Wavelength	λ	1260	-	1360	nm
Gain differential	G	20	-	-	mV/µW
Supply Voltage	V_{cc}	3	5.0	5.5	V
Supply Current (V_{cc}= 5V)[a]	I_{cc}	20	38	60	mA
Supply Current (V_{cc}= 3.3V)[a]	I_{cc}	20	35	50	mA
High Frequency -3 dB point[b]	$f_{-3dB(h)}$	100	130	-	MHz
Single-ended output voltage(p-p)[c]	$V_{o(se)(p-p)}$	40	110	200	mV
Single-ended output resistance[d]	$R_{o(se)}$	36	44	57	Ohm

a) AC Coupled; R_L= 50 Ohm
b) AC coupled; measured differentially; C_i =0.7 pF; R_L =50 Ohm; T_j= 100°C
c) AC coupled; R_L = 50 Ohm; input current =100 $\mu A_{(p-p)}$
d) DC tested

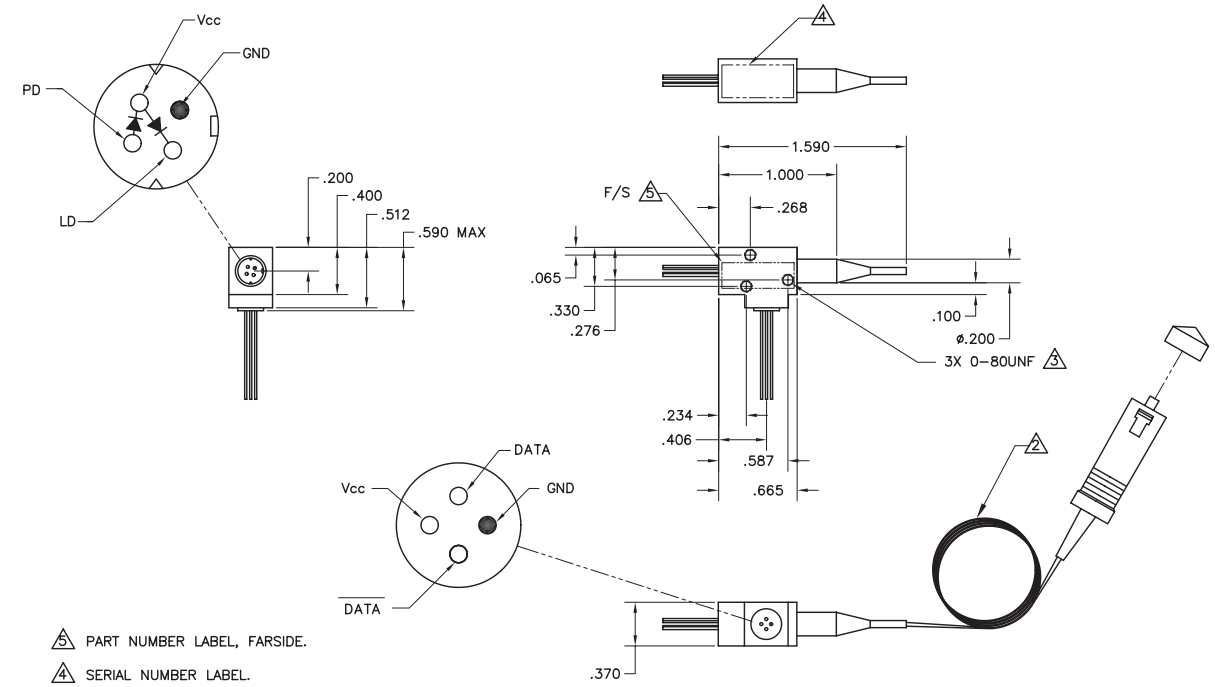
Digital Receiver Characteristics (622 Mbps)

Parameter	Symbol	Min	Typical	Max	Units
Detection Wavelength	λ	1260	-	1360	nm
Gain differential	G	10	-	-	mV/µW
Supply Voltage	V_{cc}	3	5.0	5.5	V
Supply Current (V_{cc}= 5V)[a]	I_{cc}	23	28	45	mA
Supply Current (V_{cc}= 3.3V)[a]	I_{cc}	20	28	42	mA
High Frequency -3 dB point (V_{cc}= 5V)[b]	$f_{-3dB(h)}$	450	580	750	MHz
High Frequency -3 dB point (V_{cc}= 3.3V)[b]	$f_{-3dB(h)}$	440	520	600	MHz
Single -ended output voltage(p-p)[c]	$V_{o(se)(p-p)}$	75	200	330	mV
Single-ended output resistance[d]	$R_{o(se)}$	40	50	62	Ohm

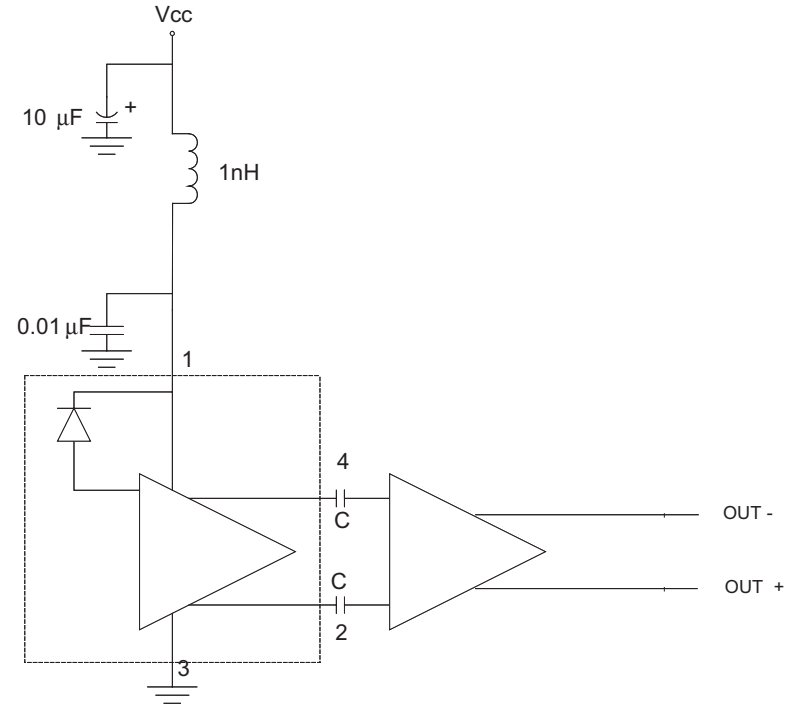
a) AC coupled; R_L =50 Ohm
b) C_i= 0.7 pF
c) AC coupled; R_L = 50 Ohm; input current =100 $\mu A_{(p-p)}$
d) DC tested

ODP-43-PE

Mechanical Drawing



Receiver Block Diagram



At 155 Mbps, C= 0.1µF
At 622 Mbps, C= 0.1 µF
At 1250 Mbps, C= 0.022 µF

Luminent Optical block

Customer Interface

ODP-43-PE

Ordering Information

Available Options:
ODP-43-PE--155x-C
ODP-43-PE--622x-C
ODP-43-PE--1250x-C

Part numbering Definition:

ODP - 43 - Half Peak Output Power -- Digital TIA - Connector Type - Temperature Range - Customer Specific

- **PX**
  PAA = -13 to -16dBm
  PA = -9 to -13 dBm
  PB = -6 to -9 dBm
  PC = -3 to -6 dBm
  PD = -1 to -3 dBm
  PE = -1 to +1 dBm
  PF = +1 and up

- **(Separator)**
- **Blank = No TIA**
  155
  622
  1250
  xxxB (B=Burst)

- **SCX**
  LCX
  FCX
  STX
  X = A (angled)
  X = U (ultra)

- **Blank = Industrial**
  C = Commercial (0 to 70°C)
  R = Reduced Industrial (-20 to 85°C)

- **Labelling, Serial Number, TIA, or shipping instructions etc.**

Warnings

Handling Precautions: This device is susceptible to damage as a result of electrostatic discharge (ESD). A static free environment is highly recommended. Follow guidelines according to proper ESD procedures.
Laser Safety: Radiation emitted by laser devices can be dangerous to human eyes. Avoid eye exposure to direct or indirect radiation.

Legal Notice