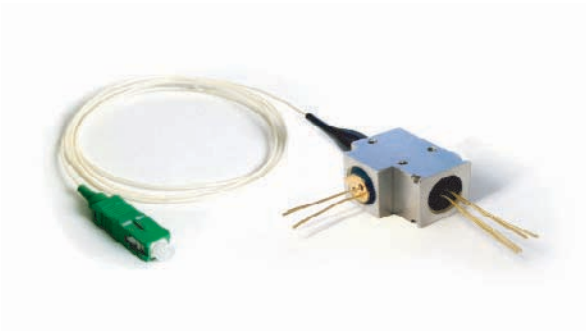


ODP-34-PE



Features

- Low cost 1310 FP TX design, 1490 nm receive
- High Isolation
- -40 to 85°C operation
- Multiple TIA versions for 155, 622, and 1250 Mbps applications
- Compliant to ITU-T G.GPON class c at 155Mbps and 622Mbps Tx
- Compliant to ITU-T G.GPON class B at 1250 Mbps

Absolute Maximum Ratings

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

Module Requirements

Parameter	Min	Typical	Max	Units
1550 Enhancement Band to 1490 RX isolation ^a	29	-	-	dB
1310 TX to 1490 RX crosstalk	-	-	-47	dB
Back Reflection @ 1310 nm	-	-	-6	dB
Back Reflection @ 1550 nm	-	-	-20	dB
Back Reflection @ 1490 nm	-	-	-20	dB

^a With Enhancement Band block from 1535nm to 1565nm

Transmitter Requirements

Parameter	Symbol	Min	Typical	Max	Units
Wavelength	λ	1260	-	1360	nm
Spectral Width (RMS)	$\Delta\lambda$	-	2	3	nm
1/2 P _{peak} set point @ 25°C (GPON)	P _{set}	-	2.5	-	dBm
1/2 P _{peak} over temp and EOL(GPON)	P _{ave}	-1	-	4	dBm
Bias Current	I _{bias}	6	-	70	mA
Bias Current@EOL	I _{bias,EOL}	-	-	100	mA
Modulation Current ^c	I _{mod}	10	-	60	mA
PD Monitor Current	I _{PD,mon}	100	-	1000	μA
Forward Voltage	V _f	-	1.2	1.8	Volts
Rise/Fall Time ^b	tr/ta	-	-	0.5	ns
PD Monitor Dark Current	I _{PD,dark}	-	-	1	μA
PD Monitor Capacitance	C _{PD}	-	10	20	pF

^b 10% to 90%

^c Greater modulation current can be used for higher output powers

ODP-34-PE

Digital Receiver Characteristics (155 Mbps)

Parameter	Symbol	Min	Typical	Max	Units
Detection Wavelength	λ	1260	-	1360	nm
Gain differential	G	20	-	-	mV/ μ W
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; $R_L = 50$ Ohmb) AC coupled; measured differentially; $C_i = 0.7$ pF; $R_L = 50$ Ohm; $T_j = 100^\circ\text{C}$ c) AC coupled; $R_L = 50$ Ohm; input current = $100 \mu\text{A}_{(p-p)}$

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/ μ W
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; $R_L = 50$ Ohmb) $C_i = 0.7$ pFc) AC coupled; $R_L = 50$ Ohm; input current = $100 \mu\text{A}_{(p-p)}$

d) DC tested

Digital Receiver Characteristics (1250 Mbps)

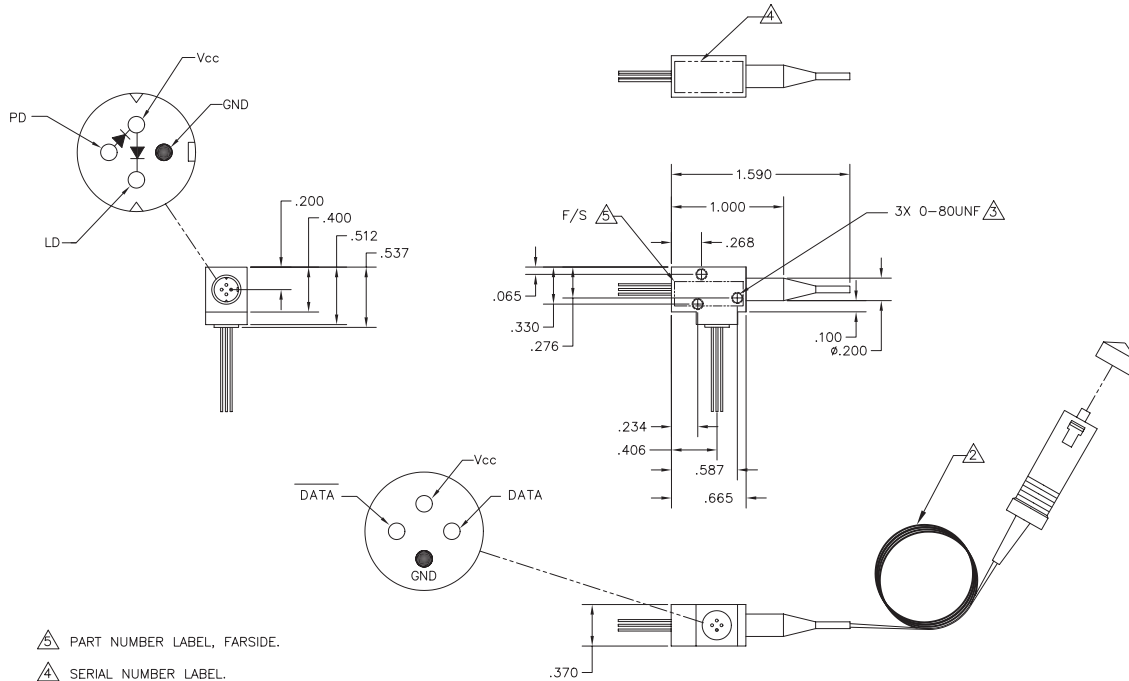
Parameter	Symbol	Min	Typical	Max	Units
Detection Wavelength	λ	1260	-	1360	nm
Gain differential	G	4	-	-	mV/ μ W
Supply Voltage	V_{CC}	3	5.0	5.5	V
Supply Current ^a	I_{CC}	-	34	47	mA
High Frequency -3 dB point ($V_{CC}=5V$) ^b	$f_{-3dB(h)}$	1000	1200	-	MHz
High Frequency -3 dB point ($V_{CC}=3.3V$) ^b	$f_{-3dB(h)}$	850	1100	-	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; $R_L = 50$ Ohmb) $C_i = 0.7$ pFc) AC coupled; $R_L = 50$ Ohm; input current = $100 \mu\text{A}_{(p-p)}$

d) Single-ended; DC tested

ODP-34-PE

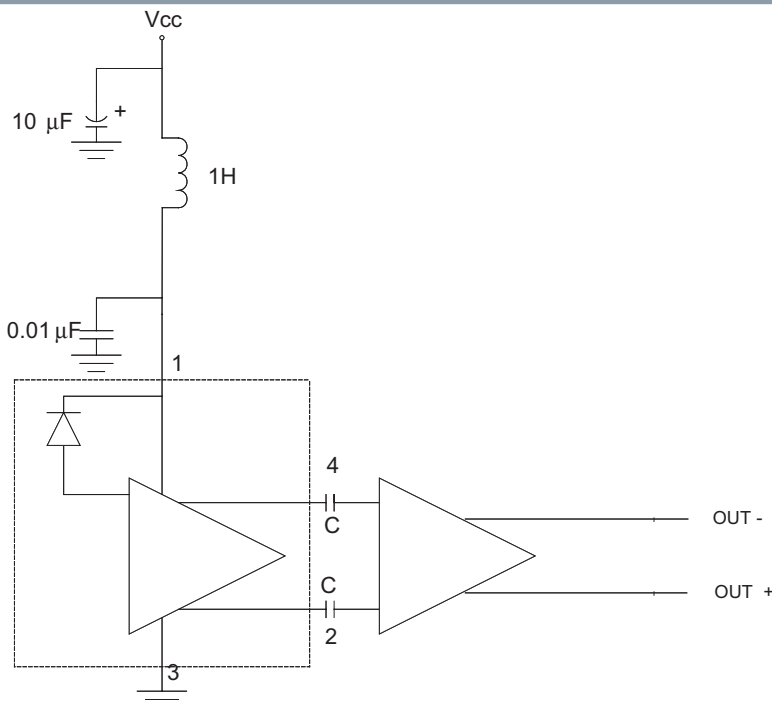
Outline Drawing



- ▲ PART NUMBER LABEL, FAR SIDE.
 - ▲ SERIAL NUMBER LABEL.
 - ▲ MAX TORQUE 2 IN/LBS.
 - ▲ 1.0 METER 900 μ M BUFFERED FIBER TERMINATED WITH SCA CONNECTOR OR UNLESS OTHERWISE SPECIFIED.
1. CUSTOMER MAKES ALL EXTERNAL CONNECTIONS TO FIBER COMPONENTS AND WIRING.

NOTES: UNLESS OTHERWISE SPECIFIED

Receiver Block Diagram



Luminent Optical block

Customer Interface

At 155 Mbps, C = 0.1 μ F
At 622 Mbps, C = 0.1 μ F
At 1250 Mbps, C = 0.022 μ F

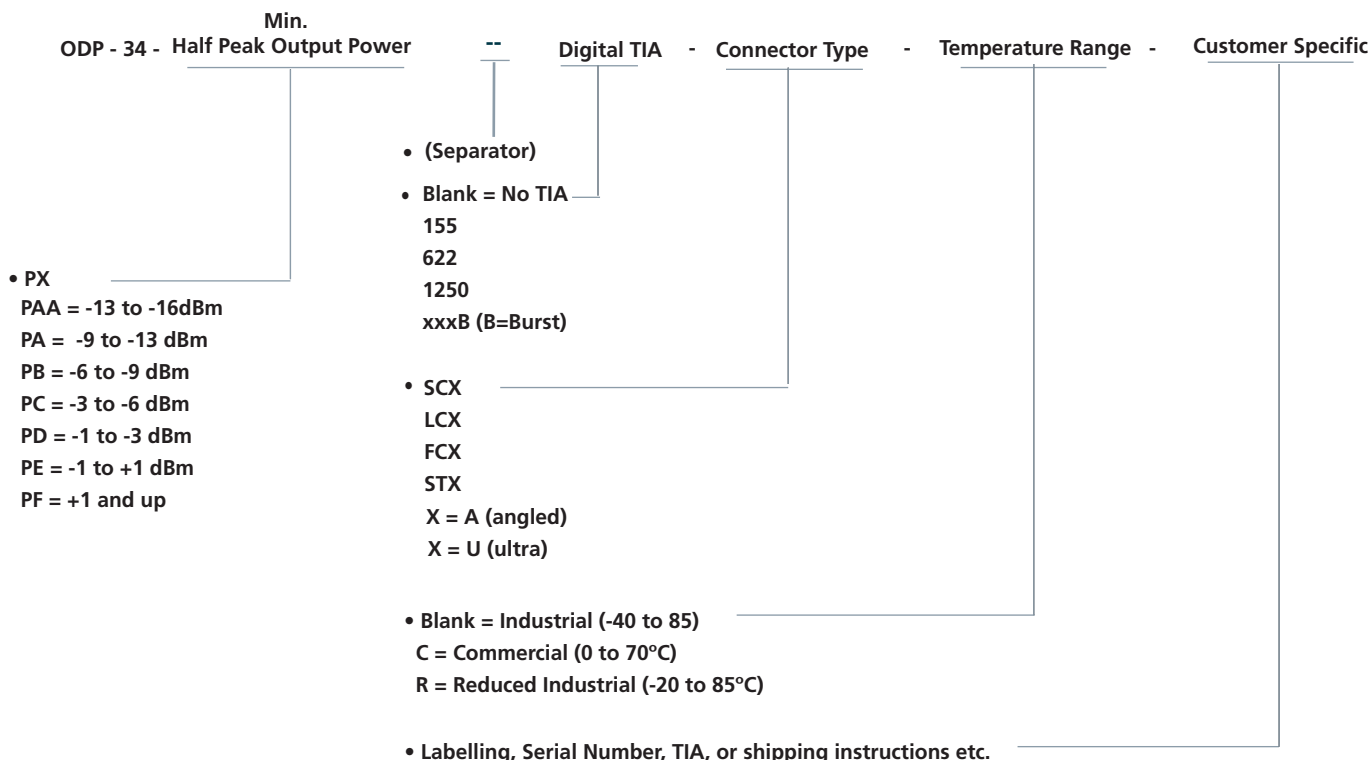
ODP-34-PE

Ordering Information

Available Options:

- ODP-34-PE--155x
- ODP-34-PE--622x
- ODP-34-PE--1250x

Part numbering Definition:



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.

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