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# Pigtailed PIN-PREAMP

## Technical Data

PPA1515-155/622

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### Features

- **Integrated InGaAs PIN and GaAs Preamplifier**
- **Fiber Pigtailed**
- **Compact Package**
- **High Reliability Planar InGaAs PIN Photodiode**
- **High Responsivity**

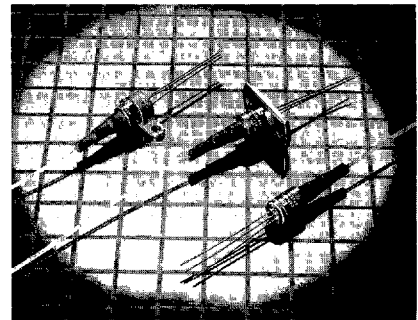
### Applications

- **SONET/SDH**
- **Instrumentation**
- **O-E Convertors**
- **Single and Multimode Fiber Communications Systems**
- **Data Communication Receivers**
- **FDDI**

### Description

The PPA1515 is a compact fiber pigtailed InGaAs photodiode with preamplifier designed for wide operating temperature range, low cost applications such as SONET/SDH and Fiber in the Loop. The planar InGaAs photodiodes are manufactured using MOVPE growth technology which gives low leakage and high responsivity performance with excellent reliability. The wide dynamic range GaAs IC preamplifier ensures compliance with SONET/SDH standards.

The construction of the devices includes a hermetically sealed photodiode and amplifier actively aligned to a fiber pigtail and is designed to be compatible with the environmental requirements of the Bellcore TA-TSY-000983 document.



## Specifications

### Absolute Limiting Ratings

Absolute (limiting) ratings mean that no catastrophic damage will occur if the product is subjected to these ratings for short periods, provided each limiting parameter is in isolation and all other parameters have values within the performance specification. It should not be assumed that limiting values of more than one parameter can be applied to the product at the same time.

Parameter	Symbol	Minimum	Maximum	Units
Positive voltage	Vdd	-	+7	V
Photodiode Voltage (Negative)	V pin	-	-7	V
Operating Temperature	Tc	-40	85	°C
Storage Temperature	Ts	-40	85	°C
Soldering - 10 secs.	-	-	260	°C
Fiber Pull	-	-	10	N

### Performance Specifications (Note 1)

Parameter	Data Rate	Minimum	Maximum	Units
Sensitivity [Note 2]	155 Mbit/s	-36	-	dBm
	622 Mbit/s	-30	-	dBm
Overload [Notes 2,3]	155 Mbit/s	-7	-	dBm
	622 Mbit/s	-7	-	dBm
Bandwidth	155 Mbit/s	95	-	MHz
	622 Mbit/s	400	-	MHz
Output Impedance		25	65	Ohms
Photodiode Responsivity		0.80	-	A/W
Vdd Supply Voltage		4.75	5.25	V
Vdd Supply Current		-	50	mA
Photodiode Supply		-7.0	-4.5	V

**Fiber Pigtail:** Tight jacketed, self-mode stripping, multimode fiber

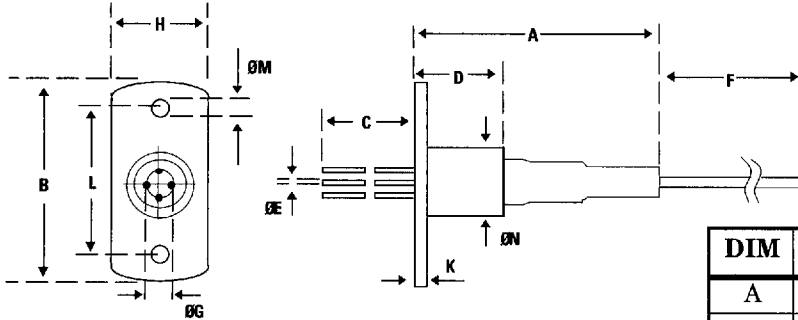
Parameter	Minimum	Maximum	Units
Length	0.4	1.2	m
Core Diameter	47	53	µm
Cladding Diameter	122	128	µm
Concentricity Error	-	8	%
Secondary Jacket Diameter	0.8	1.0	mm

#### Notes:

1. Over the operating temperature range and power supply tolerance.
2. Measured at the data rate specified for  $1 \times 10^{-9}$  BER using an infinite extinction ratio laser source modulated with a  $2^{23}-1$  PRBS pattern.
3. Higher overload performance available. Contact your local Hewlett-Packard Components representative for details.

### Drawing Dimensions

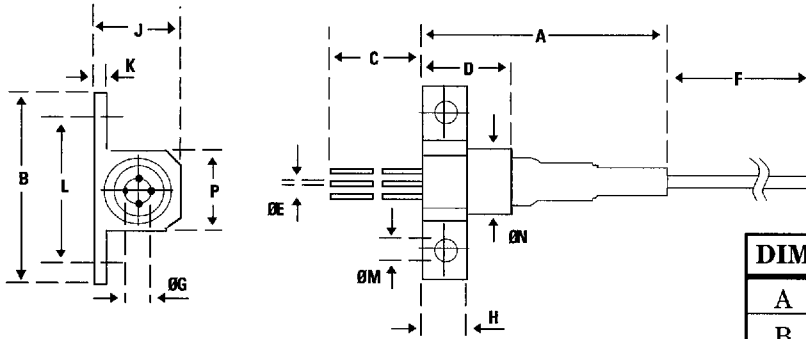
#### PPA1515-155/622-A



DIM	MIN	MAX	DIM	MIN	MAX
A	-	25.0	ØG	2.54 NOM	
B	-	19.5	H	-	9.5
C	12.0	-	K	-	2.0
D	-	9.5	L	13.35	13.55
ØE	0.27	0.33	ØM	2.1	2.4
F	400	1200	ØN	-	6.25

All dimensions in mm

#### PPA1515-155/622-D

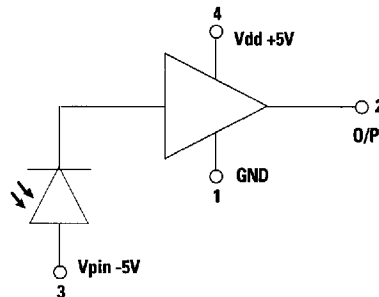
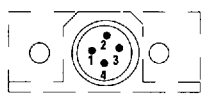


DIM	MIN	MAX	DIM	MIN	MAX
A	-	25.0	H	3.8	4.2
B	-	18.0	J	-	7.5
C	12.0	-	K	0.9	1.1
D	-	9.5	L	12.7 NOM	
ØE	0.27	0.33	ØM	2.1	2.4
F	400	1200	ØN	-	6.25
ØG	2.54 NOM		P	-	7.5

All dimensions in mm

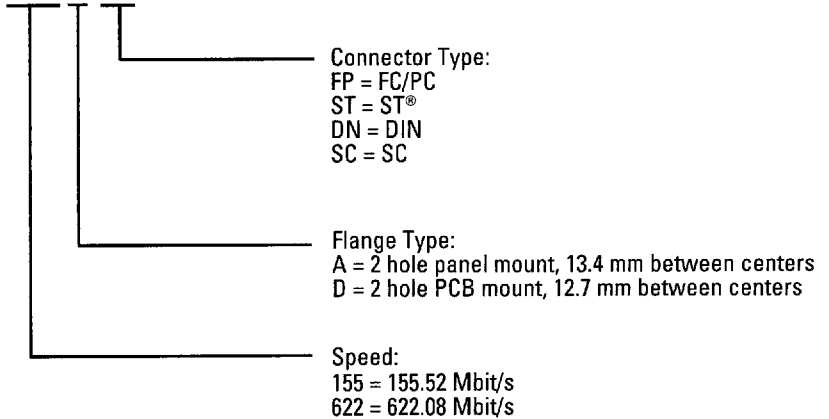
### Electrical Pin-Outs

- 1 GRN
- 2 V out
- 3 V pin
- 4 +Vdd



## Ordering Information

**PPA1515-XXX-X-XX**



### Allowable Part Numbers

PPA1515-155-A-FP	PPA1515-622-A-FP
PPA1515-155-A-ST	PPA1515-622-A-ST
PPA1515-155-A-DN	PPA1515-622-A-DN
PPA1515-155-A-SC	PPA1515-622-A-SC
PPA1515-155-D-FP	PPA1515-622-D-FP
PPA1515-155-D-ST	PPA1515-622-D-ST
PPA1515-155-D-DN	PPA1515-622-D-DN
PPA1515-155-D-SC	PPA1515-622-D-SC

For more information:

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\*Call your local HP sales office listed in your telephone directory and ask for a Components representative.

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