
Discrete Pin-Preamplifiers

Preliminary Technical Data

**PPA0052, PPA1052
PPA0155, PPA1155**

Features

- Integrated InGaAs PIN and GaAs Preamplifier
- FC or SC Receptacle or Fiber Pigtailed
- Compact Package
- High Reliability Planar InGaAs PIN Photodiode
- High Responsivity

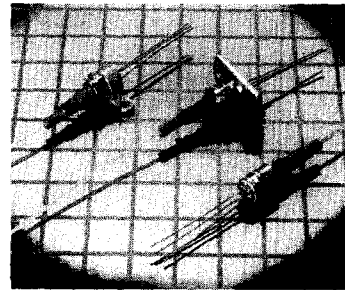
Applications

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

Description

The PPA*052 and PPA*155 are compact connectorized or pigtailed InGaAs photodiodes 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 pre-amplifier ensures compliance with SONET/SDH standards.

The construction of the devices includes a hermetically sealed photodiode and amplifier actively aligned within a receptacle housing or to a fiber pigtail and is designed to be compliant with Bellcore TA-TSY-000983.



Preliminary Product Disclaimer

This preliminary data sheet is provided to assist you in the evaluation of engineering samples of the product which is under development and targeted for release during 1997. Until Hewlett-Packard releases this product for general sales, HP reserves the right to alter prices, specifications, features, capabilities, function, manufacturing release dates, and even general availability of the product at any time.

Performance 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 that 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
Supply Voltage	V _{DD}	-	5.5	V
Photodiode Voltage (Negative)	V _{pin}	-	-7	V
Power Dissipation	-	-	350	mW
Operating Temperature	T _c	-40	+85	°C
Storage Temperature	T _s	-40	+85	°C
Soldering – 10 seconds	-	-	+260	°C
Fiber Pull	-	-	10	N

Performance Specifications^[1]

Parameter		Minimum	Maximum	Units
Responsivity		0.75	-	A/W
Sensitivity ^[2]	52 Mb/s	-39	-	dBm
	155 Mb/s	-36	-	
Overload ^[2,3]		-7	-	dBm
Bandwidth	52 Mb/s	35	-	MHz
	155 Mb/s	90	-	
Output Impedance		30	60	ohms
V _{DD} Supply Voltage		4.75	5.25	V
V _{DD} Supply Current		-	50	mA
Photodiode Supply		-7	-4.5	V

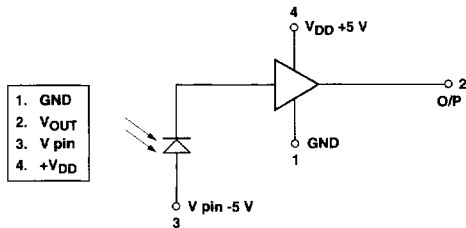
Notes:

1. Measured over the operating temperature range and power supply tolerance.
2. Measured at the data rate specified for 1×10^{-10} 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.

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

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

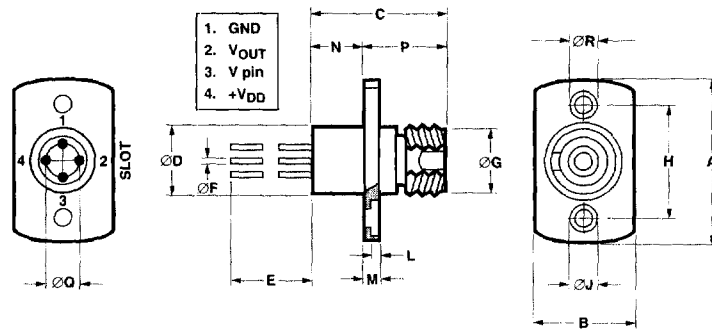
Schematic Diagram



Drawing Dimensions

PPA0052-FC-A

PPA0155-FC-A

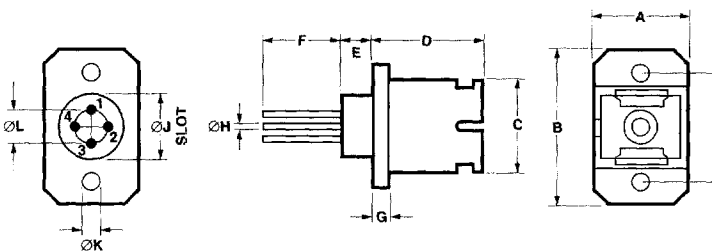


DIM.	MIN.	MAX.	DIM.	MIN.	MAX.
A	—	19.5	$\varnothing J$	2.08	2.32
B	—	9.5	L	—	1.65
C	—	15.0	M	—	2.2
$\varnothing D$	—	9.1	N	—	6.8
E	12.0	—	P	—	8.2
$\varnothing F$	0.27	0.33	$\varnothing Q$	2.54	NOM.
$\varnothing G$	M8 x 0.75	—	$\varnothing R$	—	4.2
H	13.35	13.55			

ALL DIMENSIONS IN MILLIMETERS

PPA0052-SC-A

PPA0155-SC-A

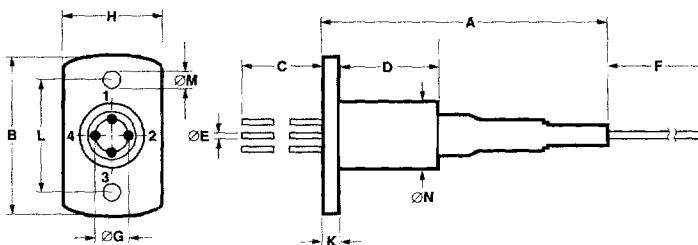


DIM.	MIN.	MAX.	DIM.	MIN.	MAX.
A	—	9.5	G	2.0	3.0
B	—	23.0	$\varnothing H$	0.27	0.33
C	—	13.5	$\varnothing J$	—	7.5
D	—	15.5	$\varnothing K$	2.08	2.5
E	—	8.0	$\varnothing L$	2.54	NOM.
F	12.0	—	M	17.8	18.2

ALL DIMENSIONS IN MILLIMETERS

PPA1052-A

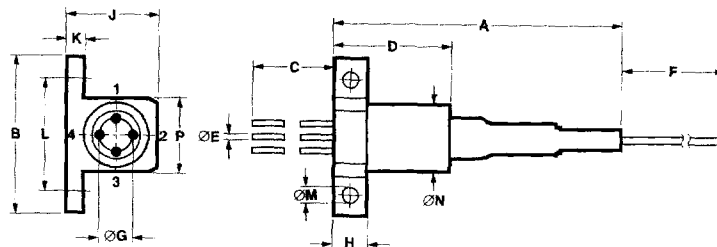
PPA1155-A



DIM.	MIN.	MAX.	DIM.	MIN.	MAX.
A	—	25.0	$\varnothing G$	2.54	NOM.
B	—	19.5	H	—	9.5
C	12.0	—	K	—	2.0
D	—	9.5	L	13.35	13.55
$\varnothing E$	0.27	0.33	$\varnothing M$	2.1	2.4
F	400	1200	$\varnothing N$	—	6.25

ALL DIMENSIONS IN MILLIMETERS

PPA1052-D
PPA1155-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 MILLIMETERS

Ordering Information

Allowable Part Numbers:

PPA0052 - FC - A
PPA0052 - SC - A
PPA1052 - A - FP
PPA1052 - A - ST
PPA1052 - A - DN
PPA1052 - A - SC
PPA1052 - D - FP
PPA1052 - D - ST
PPA1052 - D - DN
PPA1052 - D - SC

PPA0155 - FC - A
PPA0155 - SC - A
PPA1155 - A - FP
PPA1155 - A - ST
PPA1155 - A - DN
PPA1155 - A - SC
PPA1155 - D - FP
PPA1155 - D - ST
PPA1155 - D - DN
PPA1155 - D - SC

PPA0052 - XX - A

PPA0155 - XX - A

Receptacle Type:

FC = FC
SC = SC

PPA1052 - X - XX

PPA1155 - X - XX

Connector Type:

FP = FC/PC
ST* = ST
DN = DIN
SC = SC

Flange Type:

A = 2 hole Panel mount, 13.4 mm between centers
D = 2 hole PCB mount, 12.7 mm between centers

*ST is a registered trademark of AT&T.