

HR1157PAS

InGaAs PIN Preamp

HITACHI

ADE-208-968A (Z)
Preliminary
2nd Edition
Nov. 2000

Description

The HR1157PAS is the differential-ended output type receiver for 155 Mb/s 1.3 μm short and medium haul communication systems incorporated with InGaAs PIN photo diode and Si Preamp. Optical signal is launched into the non-hermetic Mini-DIL package through SMF pig tail.

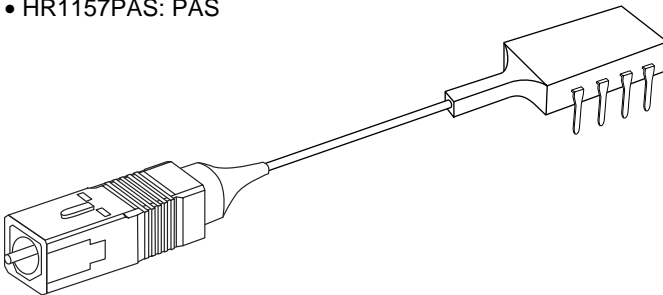
Features

- Single mode fiber attached
- High sensitivity (-39 dBm typ)
- High overload immunity ($+1$ dBm min)
- Non-hermetic Mini-DIL package

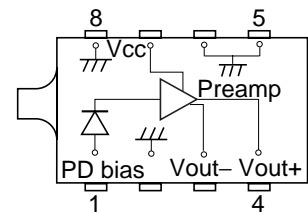
Fiber Specifications

- Mode field diameter: 9.5 ± 1.0 μm
- Cutoff wavelength: 1.10 to 1.27 μm
- Outer diameter: 125 μm nominal
- Jacket diameter: 900 μm nominal
- Fiber minimum bend radius: 30 mm

Package Type
• HR1157PAS: PAS



Internal Circuit (Top View)



Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Value	Unit	Condition
Operating temperature	T _{opr}	-40 to +85	°C	
Storage temperature	T _{stg}	-40 to +85	°C	
Supply voltage	V _{cc}	-0.5 to +7	V	
Input power	P _o max	2	dBm	

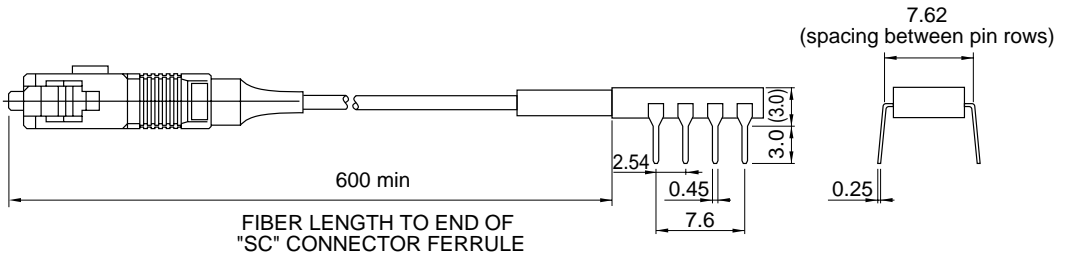
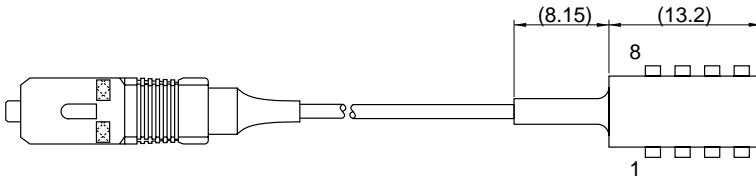
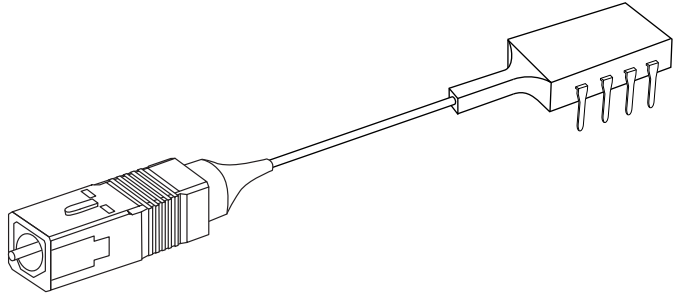
Optical and Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Wavelength range	λ	1200	—	1400	nm	
Responsivity	Resp	0.7	0.83	—	A/W	V _{cc} = +5.0 V, V _{pd} = -5.2 V, λ = 1310 ± 5 nm, P _o = 100 μW
Transimpedance	T _z	11	15	20	kΩ	
Bandwidth	BW	93	—	210	MHz	V _{cc} = +5.0 V, V _{pd} = -5.2 V, P _o = -30 dBm, -3 dB, Z _I = 50 Ω, AC coupled
Sensitivity	Pr	-43	-39	-38	dBm	V _{cc} = +5.0 V, V _{pd} = -5.2 V, λ = 1310 ± 5 nm, Z _I = 50 Ω, AC coupled
Overload	P _{max}	1	—	—	dBm	V _{cc} = +5.0 V, V _{pd} = -5.2 V, λ = 1310 ± 5 nm, Z _I = 50 Ω, AC coupled
Positive supply current	I _{cc}	10	—	63	mA	V _{cc} = +5.0 V, V _{pd} = -5.2 V, P _o = 0
Positive supply voltage	V _{cc}	4.7	5	5.3	V	Recommended V _{cc} value
Optical return loss	ORL	27	—	—	dB	

Package Dimensions

Preliminary

Unit: mm



Hitachi Code	LD/PAS
JEDEC	—
EIAJ	—
Mass (reference value)	—

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