HR1158PAS

InGaAs PIN Preamp

HITACHI

ADE-208-969A (Z)
Preliminary
2nd Edition
Nov. 2000

Description

The HR1158PAS is the differential-ended output type receiver for 622 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.

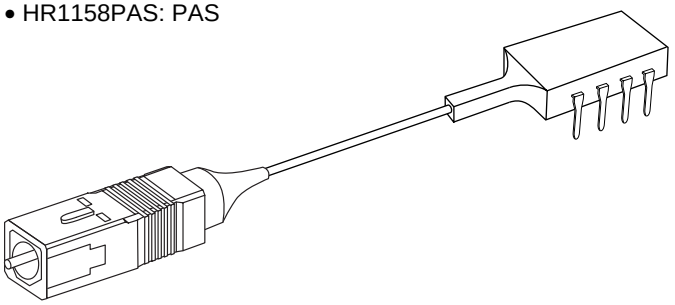
Features

- Single mode fiber attached
- High sensitivity (–36 dBm typ)
- High overload immunity(+1 dBm min)
- Non-hermetic Mini-DIL package

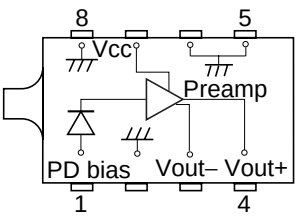
Fiber Specifications

- 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
• HR1158PAS: PAS



Internal Circuit (Top View)



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Absolute Maximum Ratings (Ta = 25°C)

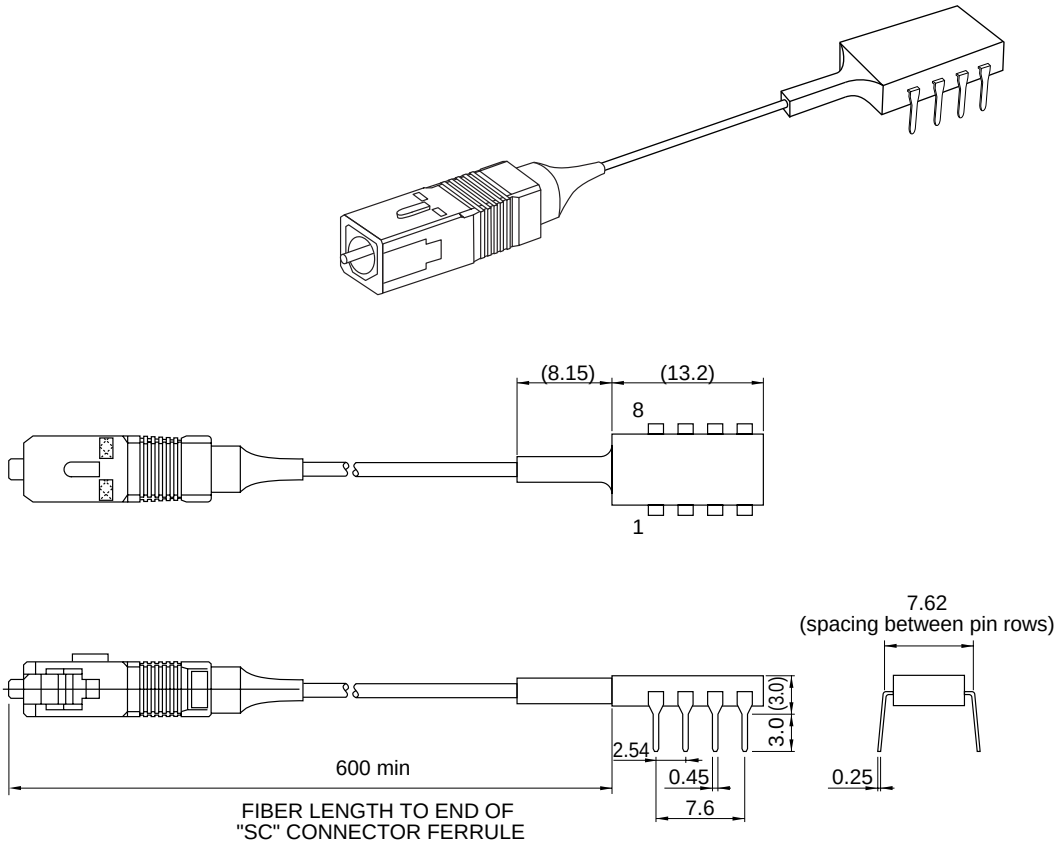
Item	Symbol	Value	Unit	Condition
Operating temperature	Topr	–40 to +85	°C	
Storage temperature	Tstg	–40 to +85	°C	
Supply voltage	V_{CC}	–0.5 to +7	V	
Input power	P_O max	2	dBm	

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, Vpd = –5.2 V, λ = 1310 ± 5 nm, P_O = 100 μW
Transimpedance	T_Z	4.0	5.4	6.3	kΩ	
Bandwidth	BW	370	—	510	MHz	V_{CC} = +5.0 V, Vpd = –5.2 V, P_O = –25 dBm, –3 dB, ZI = 50 Ω, AC coupled
Sensitivity	Pr	–42	–36	–34	dBm	V_{CC} = +5.0 V, Vpd = –5.2 V, λ = 1310 ± 5 nm, ZI = 50 Ω, AC coupled
Overload	Pmax	1	—	—	dBm	V_{CC} = +5.0 V, Vpd = –5.2 V, λ = 1310 ± 5 nm, ZI = 50 Ω, AC coupled
Positive supply current	I_{CC}	10	—	63	mA	V_{CC} = +5.0 V, Vpd = –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	

Pacage Dimensions

Preliminary Unit: mm



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

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