HEWLETT® PACKARD

Wide Dynamic Range PINFET

Technical Data

RCV3000

Features

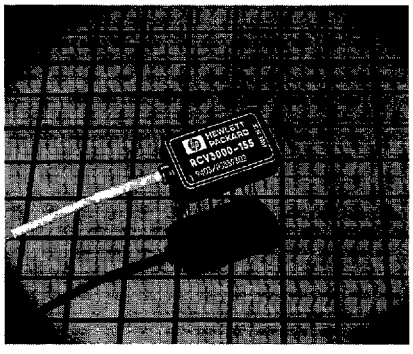
- **Wide Dynamic Range**
- **Full SONET/SDH Compliance**
- **High Sensitivity**
  -38 dBm 155 Mbit/s
  -31 dBm 622 Mbit/s

Applications

- **SONET/SDH**
- **Fiber to the Curb**
- **Passive Optical Networks**

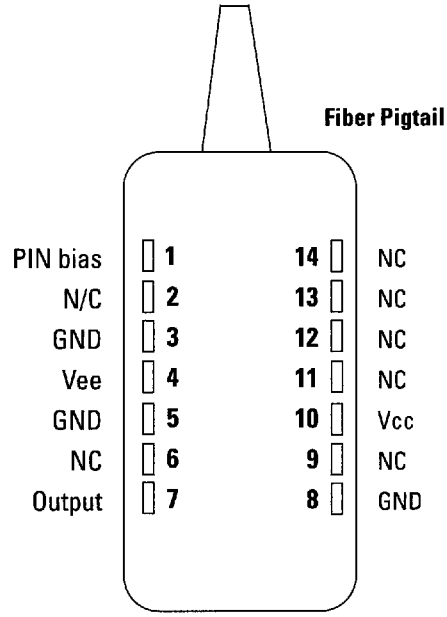
Description

The RCV3000 series of receivers are wide dynamic range PINFET receivers optimized for compliance to CCITT standards. They use our high reliability planar InGaAs PIN photodiode with a wide dynamic range GaAs FET input transimpedance amplifier. This is housed in an industry standard 14 PIN Dual In Line DIP package.



Connection Diagram

Top View



Pin Descriptions

Pin 1 PIN Bias (-5 Volt):
This pin provides the reverse bias to the PIN photodiode. Current draw will range from 100 nA to 200 µA.

Pins 2,6,9,11,12,13,14 NC:
These pins should be left unconnected on the user's PCB.

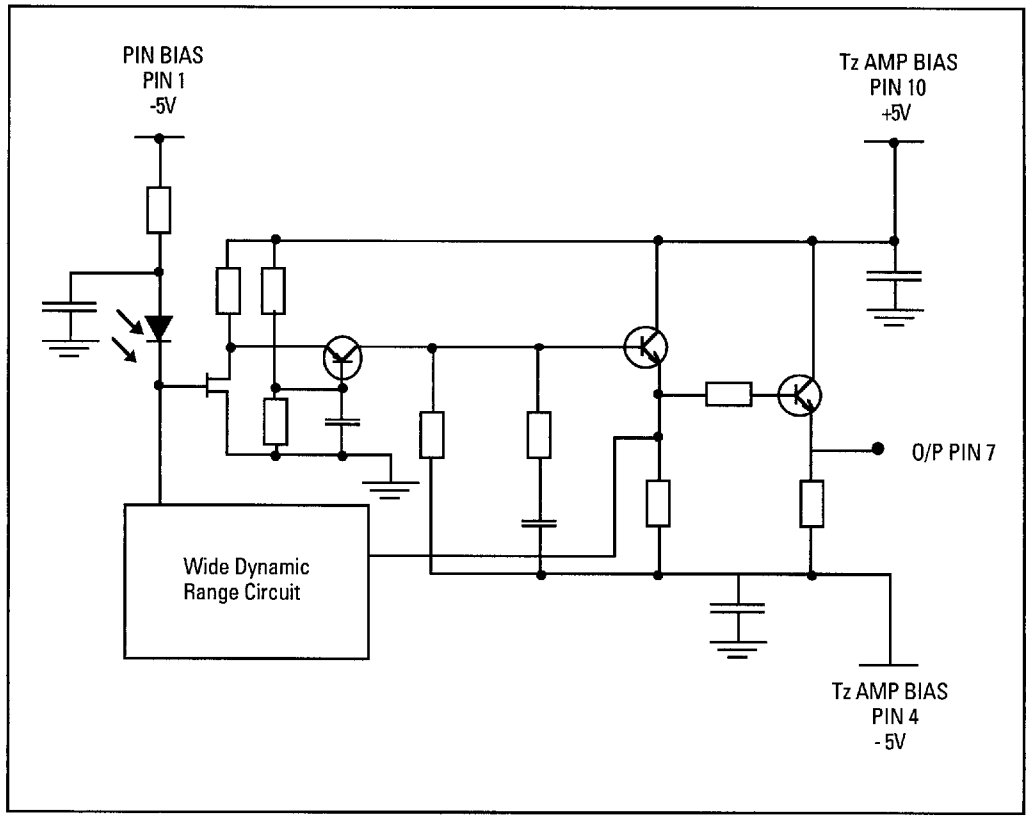
Pins 3,5,8, GND:
These pins should be connected to the 0 Volt ground.

Pin 4 Vee:
This pin is connected to the -5 Volt power supply.

Pin 7 Output:
The output pin is a dc coupled output. The user must provide an ac coupled circuit or match dc output voltages.

Pin 10 Vcc:
This pin is connected to the +5 Volt power supply.

Schematic Diagram



The RCV3000 PINFET receiver is a conventional transimpedance design with a specially designed feedback circuit to enhance the dynamic range. The output is dc coupled and should be externally ac coupled.

Care should be taken to avoid shorting the output as damage will result.

Care should also be taken over power supply and photodiode supply decoupling.

Specifications

Absolute Maximum Ratings

Parameter	Minimum	Maximum	Units	Note
Power Supply				
Vcc	-	+7	V	-
Vee	-	-7	V	-
Soldering Temperature/Time	-	240/10	°C/s	-

Operating Environmental

Parameter	Minimum	Maximum	Units	Note
Vcc	+4.75	+5.25	V	-
Vee	-4.75	-5.25	V	-
Operating Case Temperature	-40	+85	°C	-
Storage Case Temperature	-40	+85	°C	-
Relative Humidity	-	85%	RH	-

Performance Specification [1]

Parameter	155 Mbit/s			622 Mbit/s			Units	Note
	Min	Typ	Max	Min	Typ	Max		
Sensitivity	-	-	-38.0	-	-	-31.0	dBm	-
Overload	-7.0	-	-	-7.0	-	-	dBm	2
Bandwidth	90	-	-	350	-	-	MHz	-
Output Current (p-p)	-	16	-	-	16	-	mA	-
Transimpedance	-	25	-	-	3	-	KOhms	-
Output Impedance	-	50	-	-	50	-	Ohms	-

Parameter	Minimum	Typical	Maximum	Units	Note
Power Supply Current					
Vcc	-	35	-	mA	-
Vee	-	25	-	mA	-
Wavelength	1200	-	1600	nm	-

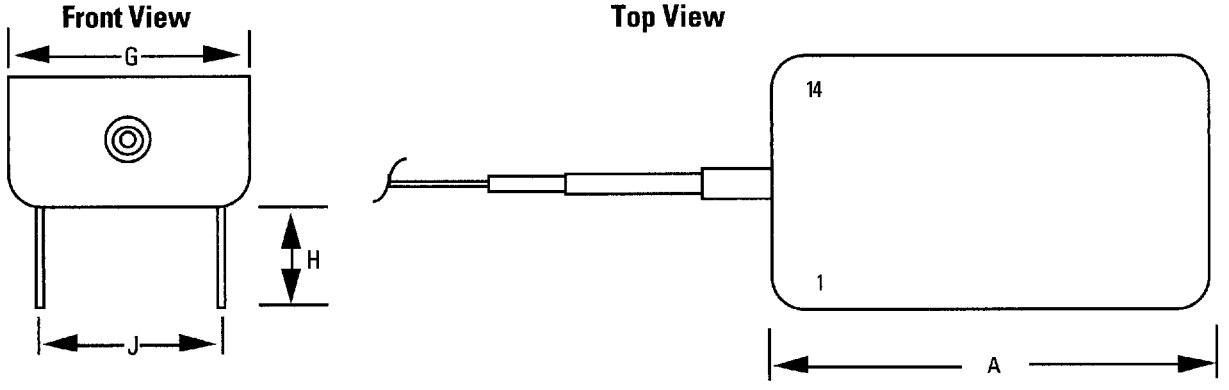
Notes:

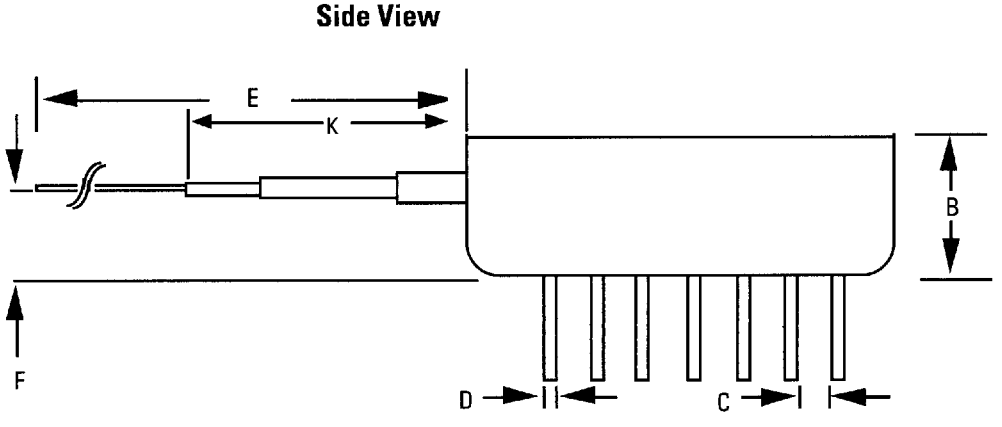
1. Over the operating temperature range of -40°C to +85°C.
2. Higher overload levels may be available - contact your local representative for details.

Drawing Dimensions

DIM	MIN	NOM	MAX
A	-	19.00	-
B	-	7.50	-
C	-	2.54	-
D	-	0.50	-
E	400	-	-
F	-	4.60	-
G	-	11.0	-
H	-	5.0	-
J	-	7.60	-
K	-	30.0	-

All dimensions in mm





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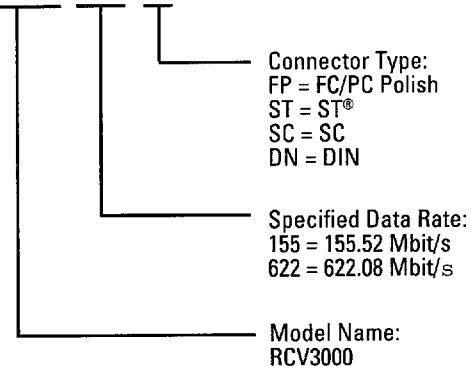
Ordering Information

Please order part number RCV3000-XXX-XX



Allowable part numbers

RCV3000-155-FP
RCV3000-155-ST
RCV3000-155-SC
RCV3000-155-DN
RCV3000-622-FP
RCV3000-622-ST
RCV3000-622-SC
RCV3000-622-DN

Handling Precautions

1. High electrostatic fields can permanently damage RCV3000 devices. Normal precautions for handling electrostatic sensitive devices should be taken.
2. InGaAs PIN photodiodes can be damaged by overloading or current surges. Appropriate transient protection precautions should be taken.

For more Information:

*United States:

*Europe:

Far East/Australasia: (65) 290-6305

Canada: (416) 206-4725

Japan: (81) 3 3331 6111

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

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Printed in USA 5963-3562E (3/95)