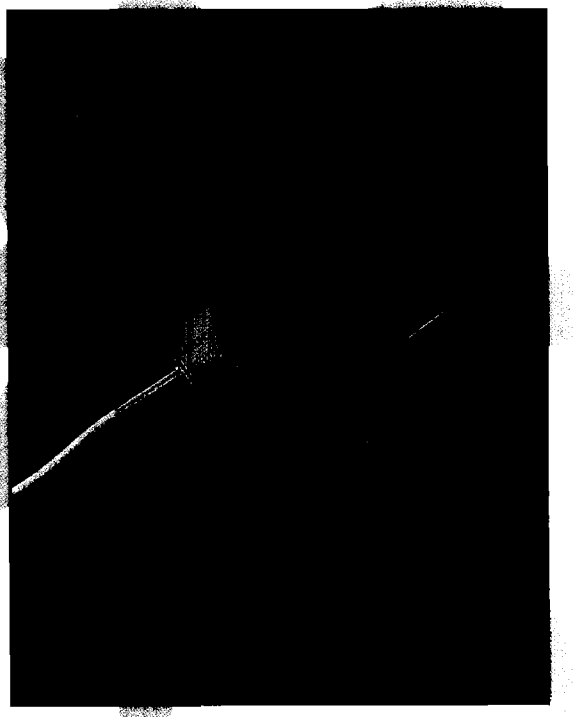
High-Speed Receivers



The high-speed receiver family is ideally suited for a broad range of data communications and telecommunications applications.

Lucent offers a wide range of high-performance PIN receivers compatible with SONET applications at OC-1, OC-3, and OC-12. Other PIN receivers are available with built-in clock recovery and data retiming and with data rate capabilities up to 1.5 Gbits/s. An APD version is available for applications up to 2.5 Gbits/s.

Features

- **1310-Type**
  - — SONET and SDH compatible at OC-3/STM-1, and OC-12/STM-4
  - — Available at data rates from 20 Mbits/s to 1100 Mbits/s
  - — Wide dynamic range
  - — Single +5 V power supply
  - — Positive ECL-level (PECL) data outputs
  - — PECL link status on OC-3 versions; CMOS TTL link status on OC-12 version and 1 Gbits/s versions
  - — Operating case temperature of –40 °C to +85 °C
  - — Space-saving, self-contained package
- **1330-Type w/Clock Recovery**
  - — SONET/SDH-compatible for OC-3/STM-1
  - — Exceeds SONET/SDH jitter requirements
  - — Space-saving, self-contained 20-pin DIP
  - — Wide dynamic range
  - — Positive ECL-level outputs
  - — Signal-detect indicator
  - — PLL clock recovery
- **1318A-Type**
  - — Designed for high-speed data communications; fibre channel 1062 Mbits/s and serial HIPPI compatible
  - — 20 Mbits/s to 1500 Mbits/s data rate operation
  - — Space-saving, self-contained 20-pin DIP
- **1319-Type**
  - — SONET OC-48 and ITU-T/SDH STM-16 applications and other applications up to 3.2 Gbits/s
  - — Fully operational through the 1.3 μm to 1.55 μm wavelength range
  - — Compact, butterfly package
  - — APD or PIN versions available
  - — Bevelled fiber: less than –27 dB optical reflectance

Table 9a. Receiver Characteristics

Parameter	1310-Type Receiver OC-3	1310-Type Receiver OC-12	1330-Type Receiver OC-3	1330-Type Receiver OC-12	Unit
Code	1310*	1310*	BA/BC/BD	DA/DC/DD	—
Device Technology	InGaAs PIN GaAs IC preamp Si IC comparator	InGaAs PIN GaAs IC preamp Si IC comparator	InGaAs PIN GaAs IC preamp Si CRC IC	InGaAs PIN GaAs IC preamp Si CRC IC	—
Signal Output	10 kH, 100k compatible PECL	10 kH, 100k compatible PECL	10 kH compatible PECL	10 kH compatible PECL	—
Wavelength	1100 to 1570	1100 to 1570	1100 to 1570	1100 to 1570	nm
Sensitivity†	–38.0	–32.0	–38.0	–33.5	dBm
Saturation‡	0.0	0.0	0.0	–4.0	dBm
Data Rate	20 to 200	20 to 650	155.520	622.080	Mbits/s
Power Supply	5.0	5.0	5.0	5.0	V
Operating Temperature Range (case)	–40 to +85	–40 to +85	–40 to +85	–40 to +85	°C
Connector§	Pigtailed with FC-PC, SC, or *ST*®	Pigtailed with FC-PC, SC, or *ST*	Pigtailed with FC-PC, SC, or *ST*	Pigtailed with FC-PC, SC, or *ST*	—

* Various codes; based on data rate, temperature range, and connector options.
† Typical values at room temperature and BOL, 1300 nm wavelength operation, 10^{-10} BER, $2^{23} - 1$ PRW with 50% average duty cycle.
‡ Typical values at room temperature and beginning of life.
§ Other connector options available on special order.

Table 9b. High-Speed Rx

Parameter	1310-Type Receiver	1318A-Type Receiver	1319-Type Receiver	Unit
Code	1310GB	1318A	1319B/C/H	—
Device Technology	InGaAs PIN GaAs IC preamp Si IC comparator	InGaAs PIN GaAs IC preamp Si comparator	InGaAs APD GaAs IC preamp	—
Signal Output	10 kH differential PECL	Differential ECL	ac-coupled analog output	—
Wavelength	1100 to 1570	1100 to 1570	1250 to 1600	nm
Sensitivity	–29[1]	–27.5 at 1500 Mbits/s[1] –29.0 at 1062 Mbits/s[1]	–34.0[1,2]	dBm
Saturation	0	–2.0	–10.0 (min.)[3]	dBm
Data Rate	20 to 1106	20 to 1500	10 to 2500	Mbits/s
Power Supply	+5.0	+5.0, –5.2	+5, –5.2, 85[4]	V
Operating Temperature Range	–40 to +85	0 to 65 (case)	0 to 65 (case)	°C
Connector	Pigtailed with FC-PC	Pigtailed with FC-PC	Pigtailed with FC-PC (1319B), Pigtailed with *ST* (1319C), Pigtailed with SC (1319H)	—

1. Typical values at room temperature and beginning of life.
2. At 2.5 Gbits/s (NRZ); 3×10^{-11} BER, APD gain = 12.
3. At 2.5 Gbits/s (NRZ); $2^{23} - 1$ pseudorandom word, APD gain = 3.
4. APD bias.