

Opto Speed 10 Gb/s optical receiver Chip

InP-HBT monolithic integrated

Preliminary

HRXC10B

FEATURES

InGaAs-pin-photodiode with preamplifier
InP-HBT technology
Bitrates up to 10 Gb/s
High conversion gain
High sensitivity
Low power consumption

PRODUCT DESCRIPTION

HRX10B chips are high-speed fiber-optical receivers for 10 Gb/s OC-192/STM-64 SONET/SDH high-capacity fiber-optical communication networks.

The advanced technological concept of these devices is based on the monolithic integration of InP-HBT (heterobipolar transistor) preamplifiers and InGaAs-pin-photodiodes, which offers both exceptional performance and low power consumption.

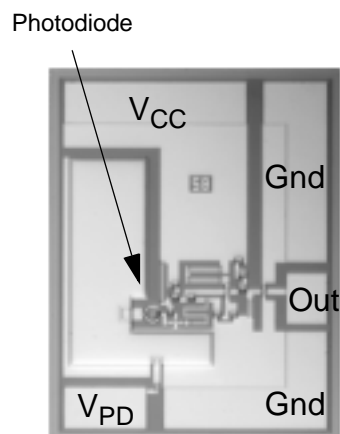


Fig. HRX10B-1 Chip Photograph

SPECIFICATIONS at 25°C

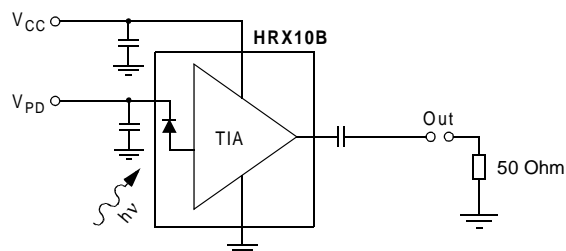


Fig. HRX10B-2 Receiver Schematic with External Circuitry

PARAMETER	Symbol	Comments	Typ.	Unit
Bandwidth	f-3dB	AC-coupled output into 50 Ω	8.5	GHz
Transimpedance Gain	Z_T	into 50 Ω	650	Ω
Electrical Return Loss	R-L		-10	dB
Responsivity of the Photodiode	R	meas. at 1.55 μ m; usable range: (0.8 -- 1.6) μ m	0.55	A/W
Conversion Gain	G		355	V/W
Sensitivity	S	BER = 10 ⁻⁹ ; NRZ, PRBS, 2 ³¹ -1	-19.0	dBm
Photodiode Voltage	V_{PD}		4.2	V
Supply Voltage	V_{CC}		4.2	V
Power Consumption	P_W		72	mW