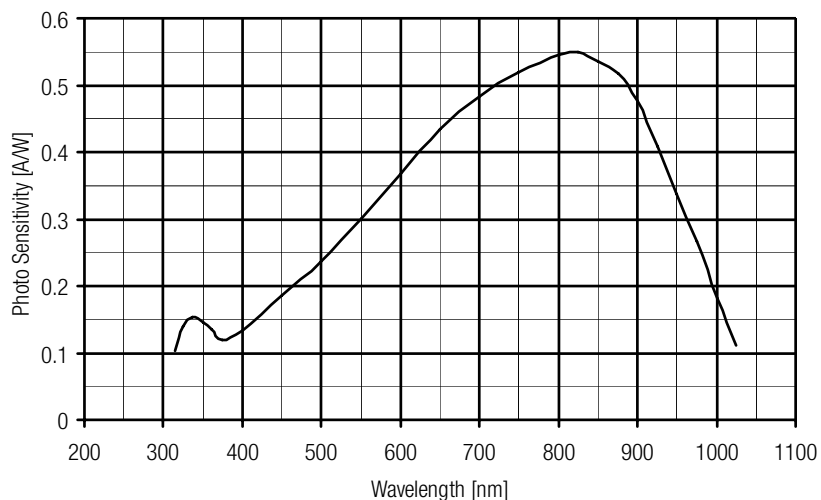


**Datasheet****HCA-S** Ser.Nr.: 02-99-301**High-Speed Balanced Photoreceiver with Integrated Si PIN Photodiodes (Customized Version)**

Features	<ul style="list-style-type: none"> <li>• <b>Two Si PIN Photodiodes with 0.8 mm Active Diameter</b></li> <li>• <b>Bandwidth DC ... 100 MHz</b></li> <li>• <b>Amplifier Transimpedance (Gain) <math>50 \times 10^3</math> V/A</b></li> <li>• <b>Conversion-Gain <math>28 \times 10^3</math> V/W (@ 800 nm)</b></li> <li>• <b>Spectral Range 320 ... 1000 nm</b></li> </ul>	
Applications	<ul style="list-style-type: none"> <li>• <b>Spectroscopy</b></li> <li>• <b>Fast Pulse and Transient Measurements</b></li> <li>• <b>Optical Triggering</b></li> <li>• <b>Optical Front-End for Oscilloscopes, A/D Converters and Fast Lock-In Amplifiers</b></li> </ul>	
Specifications	<i>Test Conditions</i>	<i>Vs = ± 15 V, Ta = 25°C</i>
Gain	Transimpedance Conversion Gain Common Mode Rejection	$50 \times 10^3$ V/A (@ 50 Ω load) $28 \times 10^3$ V/W (@ 800 nm, 50 Ω load) > 45 dB typ. (f < 10 MHz) > 25 dB typ. (f < 100 MHz)
Frequency Response	Lower Cut-Off Frequency Upper Cut-Off Frequency (-3 dB) Rise- / Fall-Time	DC 100 MHz (± 10%) 3.2 ns (10% - 90%)
Detectors	Detector Material Active Diameter Spectral Response Peak Sensitivity	Two Si PIN photodiodes 0.8 mm 320 ... 1000 nm 0.55 A/W (@ 800 nm)
Input	Max. Optical Input Power	60 μW (differential, for linear amplification, @ 800 nm)
Noise	NEP Equivalent input noise Equivalent input noise	6.9 pW/√Hz (@ 800 nm, 10 MHz) 0.16 μW rms 1.1 μW peak-peak
Output	Output Voltage Range Output Impedance Output Offset Compensation Output Noise	± 1.7 V (@ 50 Ω load) 50 Ω (terminate with 50 Ω load for best performance) ± 1.7 V (adjustable by offset trimpot) 30 mV peak-peak (@ 50 Ω, no signal on photodiode)
Power Supply	Supply Voltage Supply Current	± 15 V ± 45 mA typ. (depends on operating conditions, recommended power supply capability minimum ± 150 mA)
Case	Weight Material	210 g (0.5 lb.) AlMg4.5Mn, nickel-plated
Temperature Range	Storage Temperature Operating Temperature	-40 ... +100 °C 0 ... +60 °C
Absolute Maximum Ratings	Optical Input Power Power Supply Voltage	10 mW ± 22 V

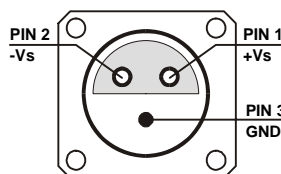
# High-Speed Balanced Photoreceiver with Integrated Si PIN Photodiodes (Customized Version)

Spectral Response



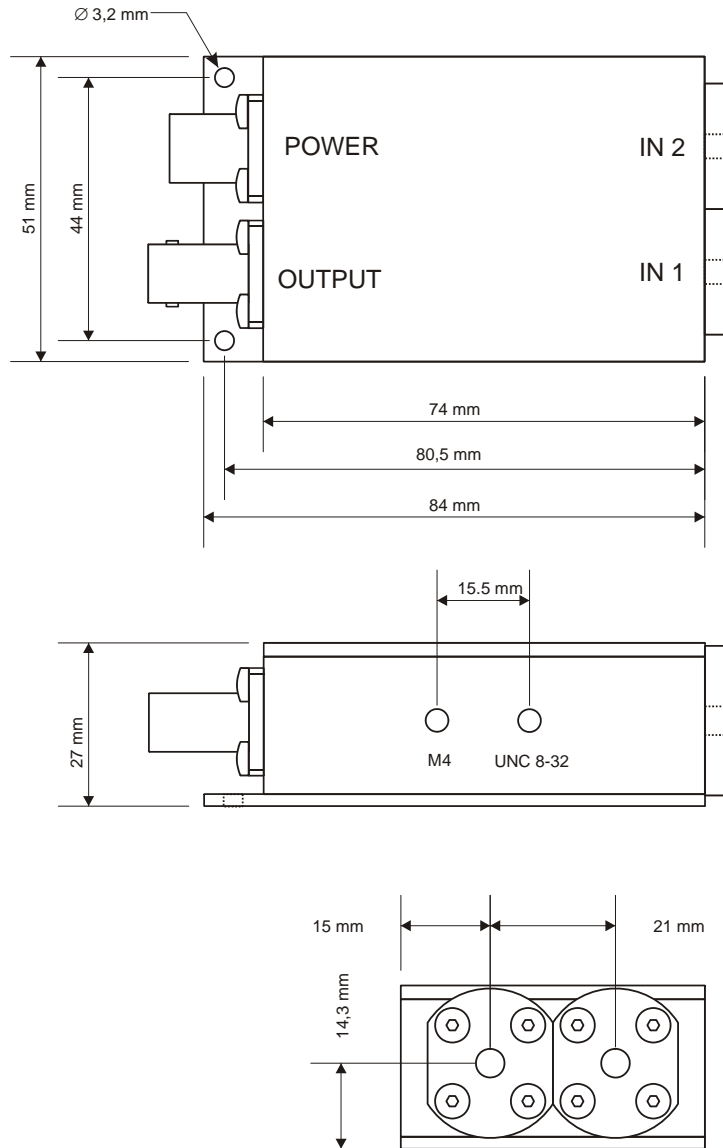
Connectors

Input	optical, 2x photodiodes in free space flanges
Output	BNC
Power Supply	LEMO series 1S, 3-pin fixed socket Pin 1: + 15V Pin 2: - 15V Pin 3: GND



# High-Speed Balanced Photoreceiver with Integrated Si PIN Photodiodes (Customized Version)

Dimensions



DZ01-0299301-10

FEMTO Messtechnik GmbH  
 Paul-Lincke-Ufer 34  
 D-10999 Berlin · Germany  
 Tel.: +49 (0)30 – 4 46 93 86  
 Fax: +49 (0)30 – 4 46 93 88  
 e-mail: info@femto.de  
 http://www.femto.de

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