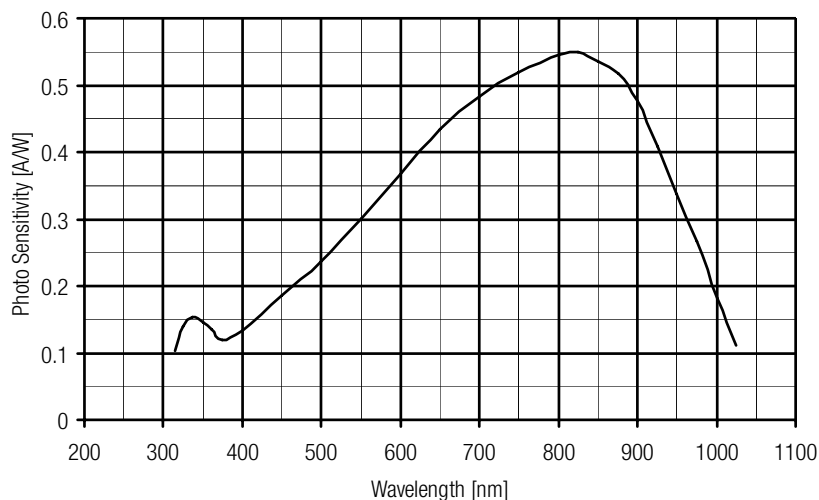


## High-Speed Balanced Photoreceiver with Integrated Si PIN Photodiodes (Customized Version)

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	<p><i>Test Conditions</i> <span style="float: right;"><i>V<sub>s</sub> = ± 15 V, T<sub>a</sub> = 25°C</i></span></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%; vertical-align: top;">Gain</td> <td style="width: 30%;">Transimpedance</td> <td style="width: 50%;">50 x 10<sup>3</sup> V/A (@ 50 Ω load)</td> </tr> <tr> <td></td> <td>Conversion Gain</td> <td>28 x 10<sup>3</sup> V/W (@ 800 nm, 50 Ω load)</td> </tr> <tr> <td></td> <td>Common Mode Rejection</td> <td>&gt; 45 dB typ. (f &lt; 10 MHz) &gt; 25 dB typ. (f &lt; 100 MHz)</td> </tr> <tr> <td style="vertical-align: top;">Frequency Response</td> <td>Lower Cut-Off Frequency</td> <td>DC</td> </tr> <tr> <td></td> <td>Upper Cut-Off Frequency (-3 dB)</td> <td>100 MHz (± 10%)</td> </tr> <tr> <td></td> <td>Rise- / Fall-Time</td> <td>3.2 ns (10% - 90%)</td> </tr> <tr> <td style="vertical-align: top;">Detectors</td> <td>Detector Material</td> <td>Two Si PIN photodiodes</td> </tr> <tr> <td></td> <td>Active Diameter</td> <td>0.8 mm</td> </tr> <tr> <td></td> <td>Spectral Response</td> <td>320 ... 1000 nm</td> </tr> <tr> <td></td> <td>Peak Sensitivity</td> <td>0.55 A/W (@ 800 nm)</td> </tr> <tr> <td style="vertical-align: top;">Input</td> <td>Max. Optical Input Power</td> <td>60 μW (differential, for linear amplification, @ 800 nm)</td> </tr> <tr> <td style="vertical-align: top;">Noise</td> <td>NEP</td> <td>6.9 pW/√Hz (@ 800 nm, 10 MHz)</td> </tr> <tr> <td></td> <td>Equivalent input noise</td> <td>0.16 μW rms</td> </tr> <tr> <td></td> <td>Equivalent input noise</td> <td>1.1 μW peak-peak</td> </tr> <tr> <td style="vertical-align: top;">Output</td> <td>Output Voltage Range</td> <td>± 1.7 V (@ 50 Ω load)</td> </tr> <tr> <td></td> <td>Output Impedance</td> <td>50 Ω (terminate with 50 Ω load for best performance)</td> </tr> <tr> <td></td> <td>Output Offset Compensation</td> <td>± 1.7 V (adjustable by offset trimpot)</td> </tr> <tr> <td></td> <td>Output Noise</td> <td>30 mV peak-peak (@ 50 Ω, no signal on photodiode)</td> </tr> <tr> <td style="vertical-align: top;">Power Supply</td> <td>Supply Voltage</td> <td>± 15 V</td> </tr> <tr> <td></td> <td>Supply Current</td> <td>± 45 mA typ. (depends on operating conditions, recommended power supply capability minimum ± 150 mA)</td> </tr> <tr> <td style="vertical-align: top;">Case</td> <td>Weight</td> <td>210 g (0.5 lb.)</td> </tr> <tr> <td></td> <td>Material</td> <td>AlMg4.5Mn, nickel-plated</td> </tr> <tr> <td style="vertical-align: top;">Temperature Range</td> <td>Storage Temperature</td> <td>-40 ... +100 °C</td> </tr> <tr> <td></td> <td>Operating Temperature</td> <td>0 ... +60 °C</td> </tr> <tr> <td style="vertical-align: top;">Absolute Maximum Ratings</td> <td>Optical Input Power</td> <td>10 mW</td> </tr> <tr> <td></td> <td>Power Supply Voltage</td> <td>± 22 V</td> </tr> </table>		Gain	Transimpedance	50 x 10 <sup>3</sup> V/A (@ 50 Ω load)		Conversion Gain	28 x 10 <sup>3</sup> V/W (@ 800 nm, 50 Ω load)		Common Mode Rejection	> 45 dB typ. (f < 10 MHz) > 25 dB typ. (f < 100 MHz)	Frequency Response	Lower Cut-Off Frequency	DC		Upper Cut-Off Frequency (-3 dB)	100 MHz (± 10%)		Rise- / Fall-Time	3.2 ns (10% - 90%)	Detectors	Detector Material	Two Si PIN photodiodes		Active Diameter	0.8 mm		Spectral Response	320 ... 1000 nm		Peak Sensitivity	0.55 A/W (@ 800 nm)	Input	Max. Optical Input Power	60 μW (differential, for linear amplification, @ 800 nm)	Noise	NEP	6.9 pW/√Hz (@ 800 nm, 10 MHz)		Equivalent input noise	0.16 μW rms		Equivalent input noise	1.1 μW peak-peak	Output	Output Voltage Range	± 1.7 V (@ 50 Ω load)		Output Impedance	50 Ω (terminate with 50 Ω load for best performance)		Output Offset Compensation	± 1.7 V (adjustable by offset trimpot)		Output Noise	30 mV peak-peak (@ 50 Ω, no signal on photodiode)	Power Supply	Supply Voltage	± 15 V		Supply Current	± 45 mA typ. (depends on operating conditions, recommended power supply capability minimum ± 150 mA)	Case	Weight	210 g (0.5 lb.)		Material	AlMg4.5Mn, nickel-plated	Temperature Range	Storage Temperature	-40 ... +100 °C		Operating Temperature	0 ... +60 °C	Absolute Maximum Ratings	Optical Input Power	10 mW		Power Supply Voltage	± 22 V
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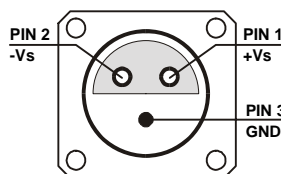
# High-Speed Balanced Photoreceiver with Integrated Si PIN Photodiodes (Customized Version)

Spectral Response



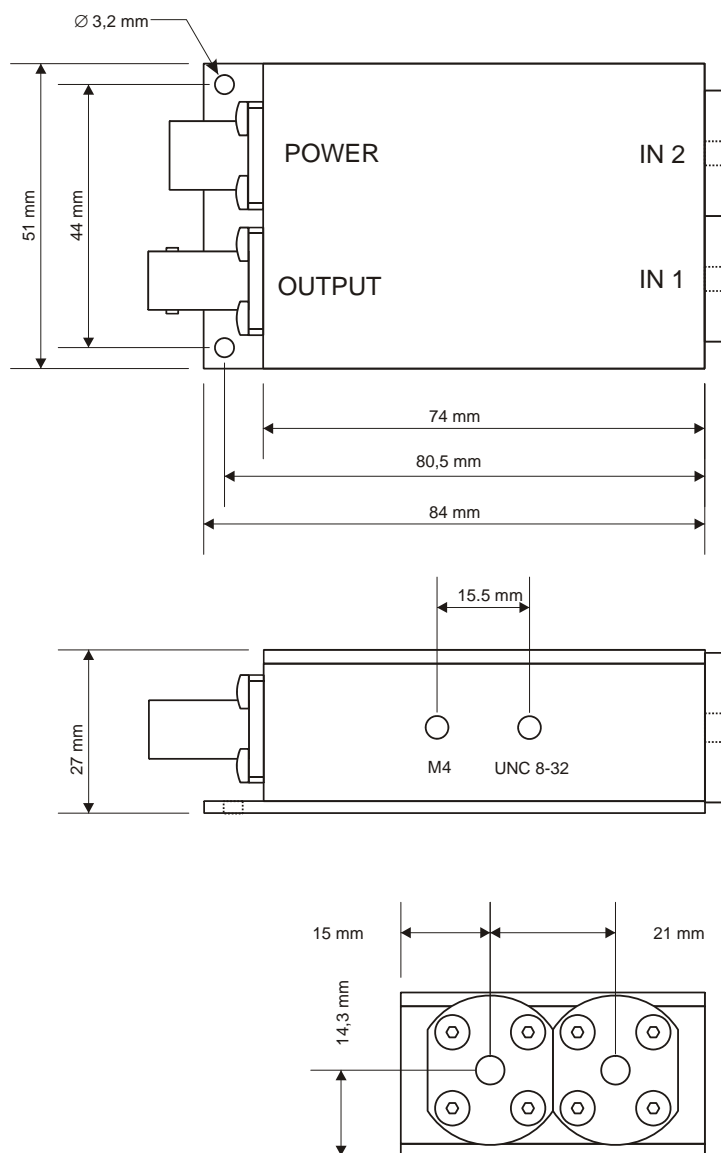
Connectors

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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