



Datasheet

HCA-S Ser.Nr.: 02-99-301

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

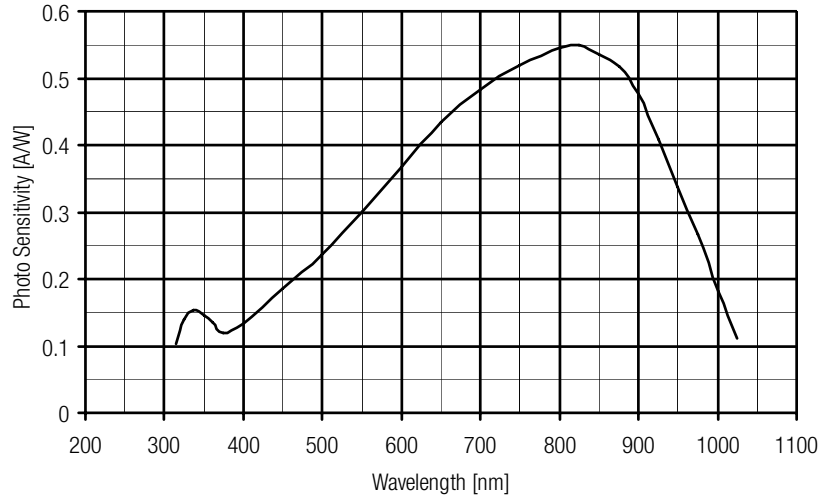
| | | |
|--------------------------|--|--|
| Features | <ul style="list-style-type: none"> • Two Si PIN Photodiodes with 0.8 mm Active Diameter • Bandwidth DC ... 100 MHz • Amplifier Transimpedance (Gain) 50×10^3 V/A • Conversion-Gain 28×10^3 V/W (@ 800 nm) • Spectral Range 320 ... 1000 nm | |
| Applications | <ul style="list-style-type: none"> • Spectroscopy • Fast Pulse and Transient Measurements • Optical Triggering • Optical Front-End for Oscilloscopes, A/D Converters and Fast Lock-In Amplifiers | |
| Specifications | <i>Test Conditions</i> | <i>Vs = ± 15 V, Ta = 25°C</i> |
| Gain | Transimpedance | 50×10^3 V/A (@ 50 Ω load) |
| | Conversion Gain | 28×10^3 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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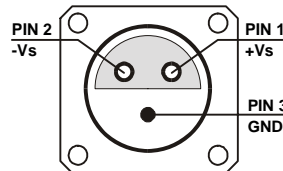
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Spectral Response



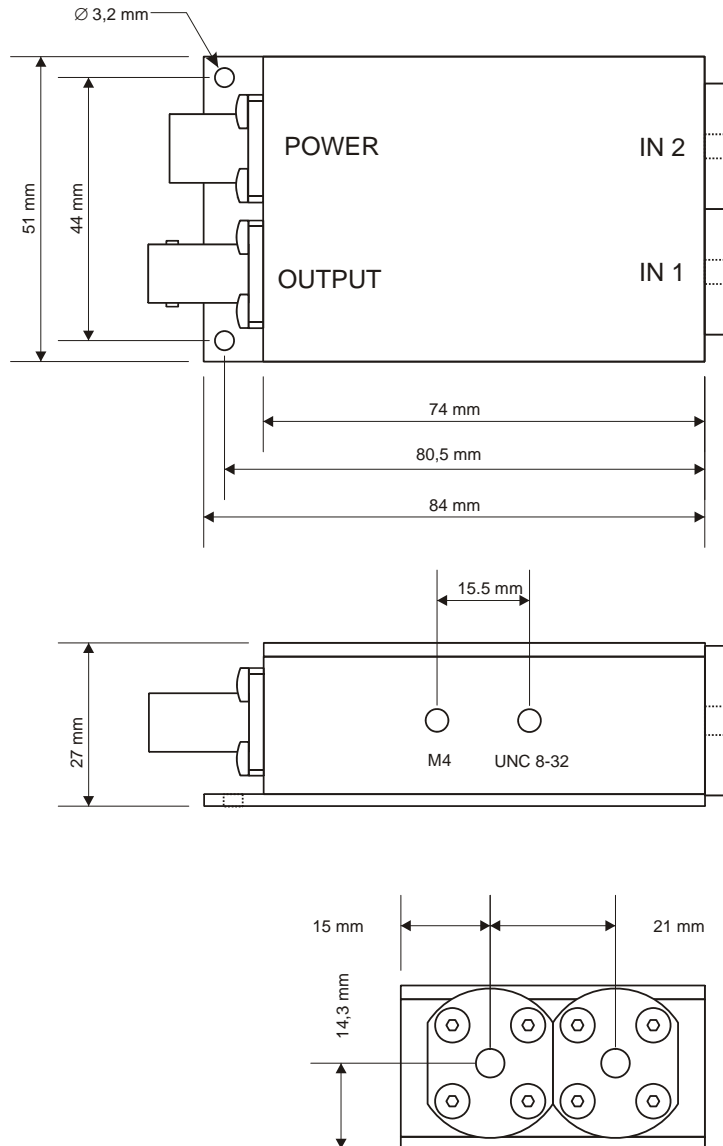
Connectors

| | |
|--------------|--|
| 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 |



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Dimensions



DZ01-0299301-10

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