

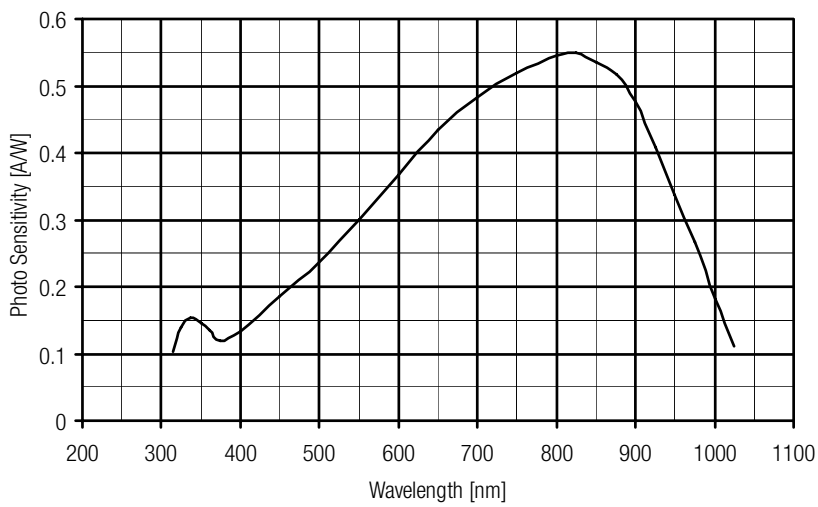
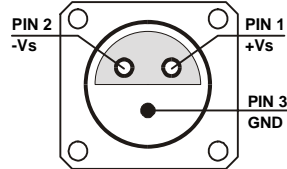
400 MHz Photoreceiver with Si PIN Photodiode



The picture shows the HCA-S-400M-SI-FS. The photoreceiver will be delivered without post holder and post.

Features	<ul style="list-style-type: none"> • Si PIN Detector, 0.8 mm Active Diameter • Spectral Range 320 ... 1000 nm • Bandwidth DC ... 400 MHz • Amplifier Transimpedance (Gain) 5.0×10^3 V/A • Max. Conversion Gain 2.7×10^3 V/W @ 800 nm 																															
Applications	<ul style="list-style-type: none"> • Fast Pulse and Transient Measurements • Fast Digital Links • Optical Triggering • Optical Front-End for Oscilloscopes and A/D Converters 																															
Specifications	<table border="0"> <tr> <td></td> <td><i>Test Conditions</i></td> <td><i>V_s = ± 15 V, T_a = 25°C</i></td> </tr> <tr> <td rowspan="2">Gain</td> <td>Transimpedance</td> <td>5.0×10^3 V/A (@ 50 Ω load)</td> </tr> <tr> <td>Max. Conversion Gain</td> <td>2.7×10^3 V/W (@ 800 nm)</td> </tr> <tr> <td rowspan="4">Frequency Response</td> <td>Lower Cut-Off Frequency</td> <td>DC</td> </tr> <tr> <td>Upper Cut-Off Frequency (-3 dB)</td> <td>400 MHz (± 10 %)</td> </tr> <tr> <td>Rise/Fall Time (10% - 90%)</td> <td>1.0 ns</td> </tr> <tr> <td>Gain Flatness</td> <td>± 1 dB</td> </tr> <tr> <td rowspan="3">Detector</td> <td>Detector Material</td> <td>Si PIN photodiode</td> </tr> <tr> <td>Active Area</td> <td>Ø 0.8 mm</td> </tr> <tr> <td>Spectral Response</td> <td>320 ... 1000 nm</td> </tr> <tr> <td rowspan="3">Input</td> <td>Input Offset Compensation</td> <td>± 200 µA adjustable by offset trimpot</td> </tr> <tr> <td>Max. Optical Input Power</td> <td>400 µW (for linear amplification, @ 800 nm)</td> </tr> <tr> <td>Min. NEP</td> <td>40 pW/√Hz (@ 800 nm, 100 MHz)</td> </tr> </table>		<i>Test Conditions</i>	<i>V_s = ± 15 V, T_a = 25°C</i>	Gain	Transimpedance	5.0×10^3 V/A (@ 50 Ω load)	Max. Conversion Gain	2.7×10^3 V/W (@ 800 nm)	Frequency Response	Lower Cut-Off Frequency	DC	Upper Cut-Off Frequency (-3 dB)	400 MHz (± 10 %)	Rise/Fall Time (10% - 90%)	1.0 ns	Gain Flatness	± 1 dB	Detector	Detector Material	Si PIN photodiode	Active Area	Ø 0.8 mm	Spectral Response	320 ... 1000 nm	Input	Input Offset Compensation	± 200 µA adjustable by offset trimpot	Max. Optical Input Power	400 µW (for linear amplification, @ 800 nm)	Min. NEP	40 pW/√Hz (@ 800 nm, 100 MHz)
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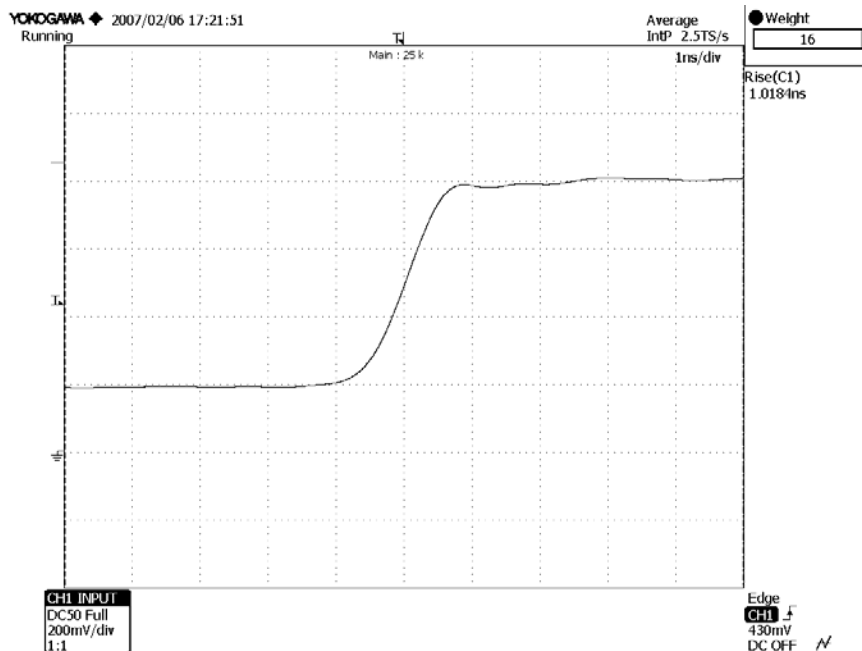
400 MHz Photoreceiver with Si PIN Photodiode

<p>Output</p> <p>Power Supply</p> <p>Case</p> <p>Temperature Range</p>	<p>Output Voltage Range $\pm 1.0\text{ V}$ (@ 50 Ω load) for linear operation and low harmonic distortion</p> <p>Max. Output Voltage Range $\pm 1.5\text{ V}$ (@ 50 Ω load)</p> <p>Output Impedance 50 Ω (terminate with 50 Ω load for best performance)</p> <p>Output Noise ca. 20 mV peak-peak (@ 50 Ω load, no signal on detector)</p> <p>Supply Voltage $\pm 15\text{ V}$</p> <p>Supply Current $\pm 55\text{ mA typ.}$ (depends on operating conditions, recommended power supply capability minimum $\pm 150\text{ mA}$)</p> <p>Weight 210 g (0.5 lbs)</p> <p>Material AlMg4.5Mn, nickel-plated</p> <p>Storage Temperature -40 ... +100 °C</p> <p>Operating Temperature 0 ... +60 °C</p>
<p>Absolute Maximum Ratings</p>	<p>Optical Input Power 20 mW</p> <p>Power Supply Voltage $\pm 22\text{ V}$</p>
<p>Spectral Response</p>	
<p>Connectors</p>	<p>Input optical, free space, 25 mm \varnothing round flange, alternatively FC or SMA fiber receptacle</p> <p>Output BNC</p> <p>Power Supply LEMO series 1S, 3-pin fixed socket Pin 1: + 15V Pin 2: - 15V Pin 3: GND</p> 

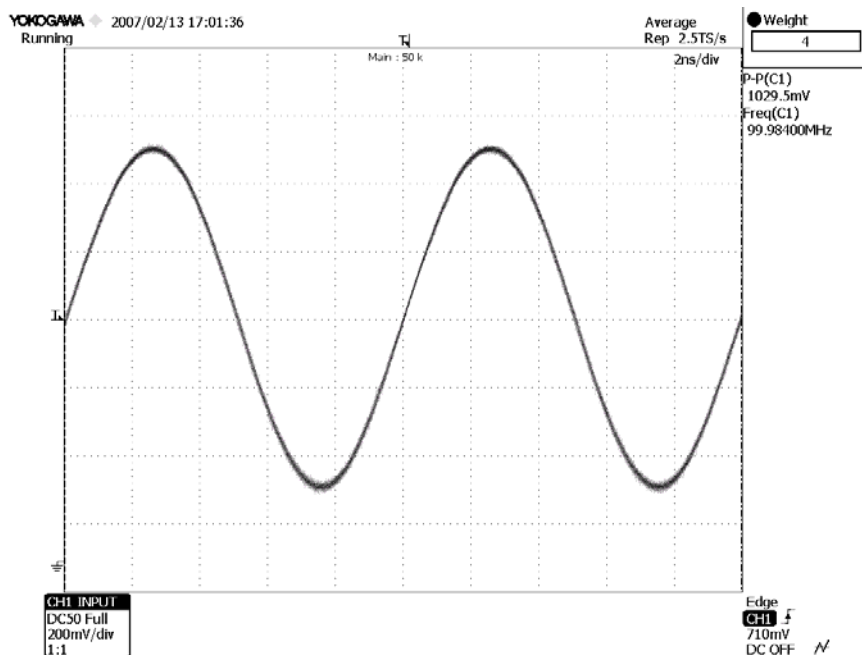
400 MHz Photoreceiver with Si PIN Photodiode

Typical Performance Characteristics (continued)

Pulse Response to Square Wave Input Signal (with 16 times averaging)



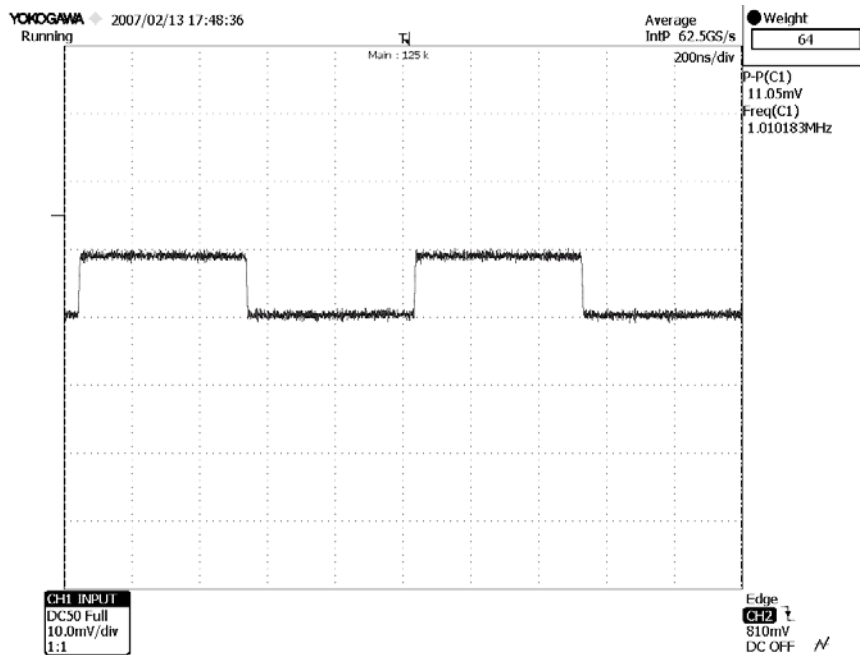
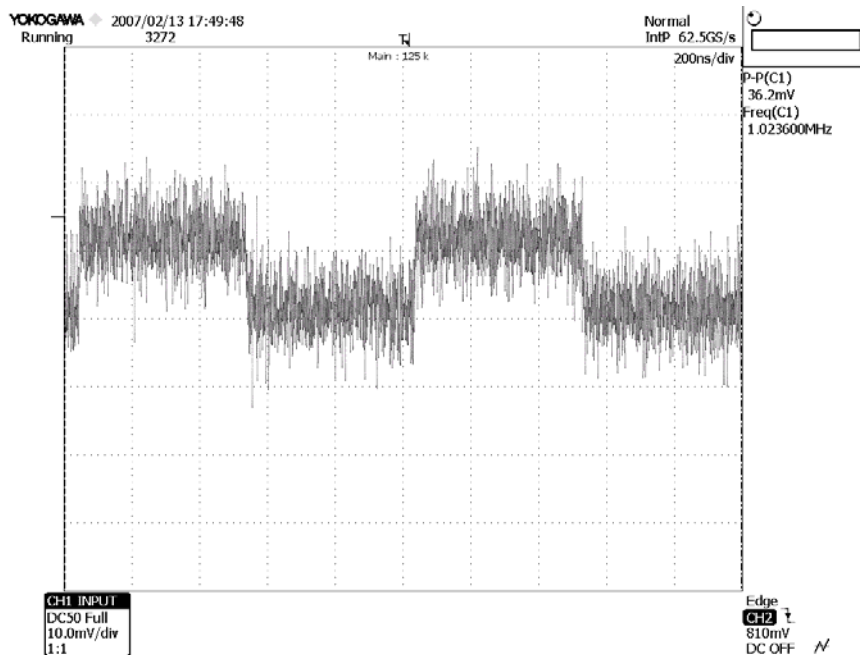
Large Signal Response output signal for 100 MHz, 370 μ W modulated optical input signal (with 4 times averaging)



400 MHz Photoreceiver with Si PIN Photodiode

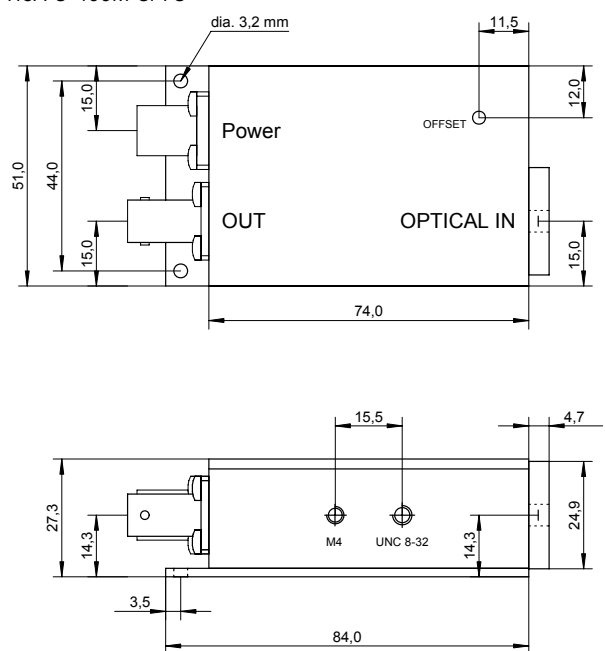
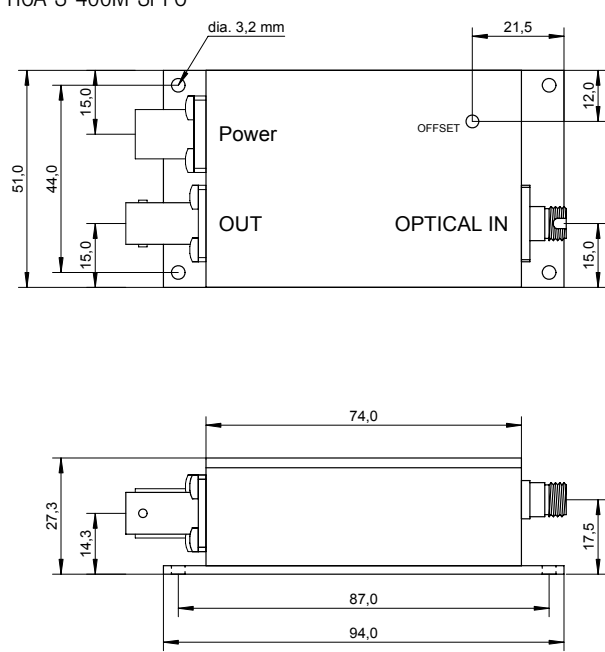
Typical Performance Characteristics (continued)

Small Signal Response
output signal for 3.7 μ W modulated optical input signal, 1 MHz square wave (without (top) and with 64 times averaging (bottom))



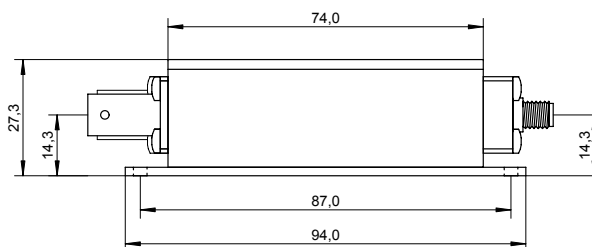
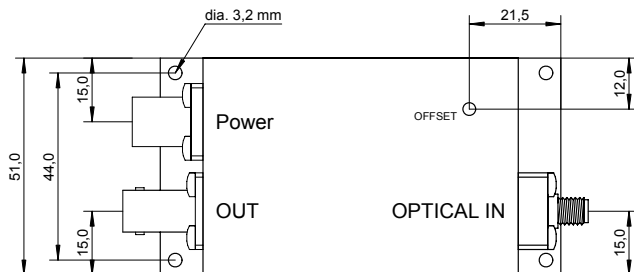
400 MHz Photoreceiver with Si PIN Photodiode

Available Models	HCA-S-400M-SI-FS HCA-S-400M-SI-FC HCA-S-400M-SI-SMA	Free-space input FC fiber receptacle input SMA fiber receptacle input
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Dimensions	<p>HCA-S-400M-SI-FS</p>  <p>all measures are in mm unless otherwise noted <small>HCA-S-FS_1</small></p> <p>HCA-S-400M-SI-FC</p>  <p>all measures are in mm unless otherwise noted <small>HCA-S-FC_1</small></p>	
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400 MHz Photoreceiver with Si PIN Photodiode

HCA-S-400M-SI-SMA



all measures are in mm unless otherwise noted

HCA-S-SMA_1

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