

**Datasheet****HCA-S Ser.Nr.: 02-99-155/-158****High-Speed Balanced Photoreceiver
integrated Si-PIN-Photodiodes**

Features	<ul style="list-style-type: none"> • Si-PIN-Detectors, 1.2 mm active Diameter • Bandwidth DC ... 4 MHz • Amplifier Transimpedance (Gain) 1×10^6 V/A • Conversion-Gain 5.7×10^5 V/W (@800 nm) • FC optical Fiber Input 																																																																																										
Specifications	<p><i>Test Conditions</i> $V_s = \pm 15$ V, $T_a = 25^\circ\text{C}$</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 20%;">Gain</td> <td style="width: 30%;">Transimpedance</td> <td style="width: 20%;">1×10^6 V/A</td> <td style="width: 30%;">(@ 50 Ω Load; doubles with high impedance Load)</td> </tr> <tr> <td></td> <td>Conversion Gain</td> <td>5.7×10^5 V/W</td> <td>(@ 800 nm, 50 Ω Load; doubles with high impedance Load)</td> </tr> <tr> <td></td> <td>Common Mode Rejection</td> <td>25 dB typ.</td> <td></td> </tr> <tr> <td>Frequency Response</td> <td>Lower Cut-Off Frequency</td> <td>DC</td> <td></td> </tr> <tr> <td></td> <td>Upper Cut-Off Frequency</td> <td>4 MHz</td> <td>(- 3 dB)</td> </tr> <tr> <td></td> <td>Rise- / Fall-Time</td> <td>90 ns</td> <td>(10% - 90%)</td> </tr> <tr> <td>Detectors</td> <td>Detector Material</td> <td>Si-PIN</td> <td></td> </tr> <tr> <td></td> <td>Active Diameter</td> <td>1.2 mm</td> <td></td> </tr> <tr> <td></td> <td>Spectral Response</td> <td>320 – 1060 nm</td> <td></td> </tr> <tr> <td></td> <td>Peak Sensitivity</td> <td>0.64 A/W</td> <td>(@ 900 nm)</td> </tr> <tr> <td></td> <td>Bias Voltage</td> <td>12 V</td> <td></td> </tr> <tr> <td>Input</td> <td>Offset Compensation</td> <td colspan="2">> ± 1 V (@ Output) adjustable by Offset trimpot</td> </tr> <tr> <td></td> <td>Max. Optical Input Power</td> <td colspan="2">3 μW (for linear Amplification, @ 800 nm)</td> </tr> <tr> <td>Noise</td> <td>NEP</td> <td>0.6 pW/$\sqrt{\text{Hz}}$</td> <td>(@ 800 nm, 200 kHz)</td> </tr> <tr> <td>Output</td> <td>Output Voltage</td> <td>± 1.6 V</td> <td>(50 Ω Load)</td> </tr> <tr> <td></td> <td>Output Impedance</td> <td>50 Ω</td> <td></td> </tr> <tr> <td>Power Supply</td> <td>Supply Voltage</td> <td>± 15 V</td> <td></td> </tr> <tr> <td></td> <td>Supply Current</td> <td>± 55 mA typ.</td> <td></td> </tr> <tr> <td>Case</td> <td>Weight</td> <td>210 gr. (0.5 lbs)</td> <td></td> </tr> <tr> <td></td> <td>Material</td> <td>AlMg4.5Mn, nickel-plated</td> <td></td> </tr> <tr> <td>Temperature Range</td> <td>Storage Temperature</td> <td colspan="2">-40 ... +100 $^\circ\text{C}$</td> </tr> <tr> <td></td> <td>Operating Temperature</td> <td colspan="2">0 ... +60 $^\circ\text{C}$</td> </tr> </table>			Gain	Transimpedance	1×10^6 V/A	(@ 50 Ω Load; doubles with high impedance Load)		Conversion Gain	5.7×10^5 V/W	(@ 800 nm, 50 Ω Load; doubles with high impedance Load)		Common Mode Rejection	25 dB typ.		Frequency Response	Lower Cut-Off Frequency	DC			Upper Cut-Off Frequency	4 MHz	(- 3 dB)		Rise- / Fall-Time	90 ns	(10% - 90%)	Detectors	Detector Material	Si-PIN			Active Diameter	1.2 mm			Spectral Response	320 – 1060 nm			Peak Sensitivity	0.64 A/W	(@ 900 nm)		Bias Voltage	12 V		Input	Offset Compensation	> ± 1 V (@ Output) adjustable by Offset trimpot			Max. Optical Input Power	3 μ W (for linear Amplification, @ 800 nm)		Noise	NEP	0.6 pW/ $\sqrt{\text{Hz}}$	(@ 800 nm, 200 kHz)	Output	Output Voltage	± 1.6 V	(50 Ω Load)		Output Impedance	50 Ω		Power Supply	Supply Voltage	± 15 V			Supply Current	± 55 mA typ.		Case	Weight	210 gr. (0.5 lbs)			Material	AlMg4.5Mn, nickel-plated		Temperature Range	Storage Temperature	-40 ... +100 $^\circ\text{C}$			Operating Temperature	0 ... +60 $^\circ\text{C}$	
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Absolute Maximum Ratings	Optical Input Power Power Supply Voltage	20 mW ± 22 V																																																																																									

