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HiLight Semiconductor releases highest sensitivity CMOS TIA for PIN Photodiode 10Gbps Datacom and CPRI Wireless Infrastructure applications

HiLight Semiconductor, a world leader in CMOS integrated circuit chips for optical communications, today announced the product release of the HLR11G0 10Gbps high sensitivity transimpedance amplifier (TIA), capable of achieving -22dBm sensitivity levels, for medium distance optical links with PIN photodiodes such as 10km to 40km wireless equipment optical interconnects, and datacom links for LR, ER and CWDM applications.

The HLR11G0 has been designed for use with standard PIN photodiodes and accommodates a wide range of photodiode capacitances without the need for any compensation settings. A high transimpedance gain of 6.2kohm ensures high output swing levels coupled with a low noise front end and optimised bandwidth all combine to deliver unprecedented levels of sensitivity. The TIA can be used in a wide range of 10Gbps applications such as LR and ER 10Gbps datacom transceivers, CWDM or DWDM receivers and Bi-directional optical receivers where extra margins of sensitivity are beneficial. The TIA features internal digital temperature control of key parameters to maintain excellent sensitivity and overload performance across the industrial operating temperature range. Using an advanced fine geometry CMOS process the HLR11G0 operates from a single +3.3V power supply and has a low typical current consumption of 26mA.

Coupled with popular Chinese brand 10G photodiodes from Optosensor (OS-PD1050B) and Phograin (XJS-10-D5-SPI) the HLR11G0 attained exception levels of performance, repeatedly achieving -22 dBm (1E-12) with an IRN of 608nA rms. The superior levels of performance delivered by the HLR11G0 enable increased link budget margin for photodiode applications and improved manufacturing yields for optical sensitivity tests.

Other features and performance benefits of the HLR11G0 include adjustable 5.1kohm to 6.2kohm transimpedance gain, single or dual cathode PD connections, internally generated

and regulated photodiode bias supply with RSSI monitor output and overload performance of better than +3 dBm.

The TIA dimensions are just 0.7mm x 1.05mm and fits easily within a standard TO-can optical assembly. The accompanying picture demonstrates how simple and low cost the TO-can assembly can be.

The HLR11G0 is part of an advanced CMOS PMD product portfolio that addresses high volume 10Gbps to 25 Gbps markets including Datacom, Wireless and FTTx PON optical applications.

Christian Rookes, VP Marketing at HiLight, commented “By delivering a 2dB improvement over current state-of-art TIAs the HLR11G0 delivers world class sensitivities for 10G mid-distance datacom or CPRI wireless optical link applications and can be used with HiLight’s existing portfolio of CMOS DML laser driver transceiver Combo ICs to realise highly integrated, low power and economical optical transceiver modules.”

“I am excited that HiLight have yet again produced a best in class pure CMOS device that complements HiLight’s existing product portfolio, adding to the existing 10Gbps TIAs giving complete coverage of all applications. The HLR11G0 offers outstanding performance not before seen, whilst continuing to provide very competitive priced solutions” stated Dr Jess Brown, VP Sales at HiLight.

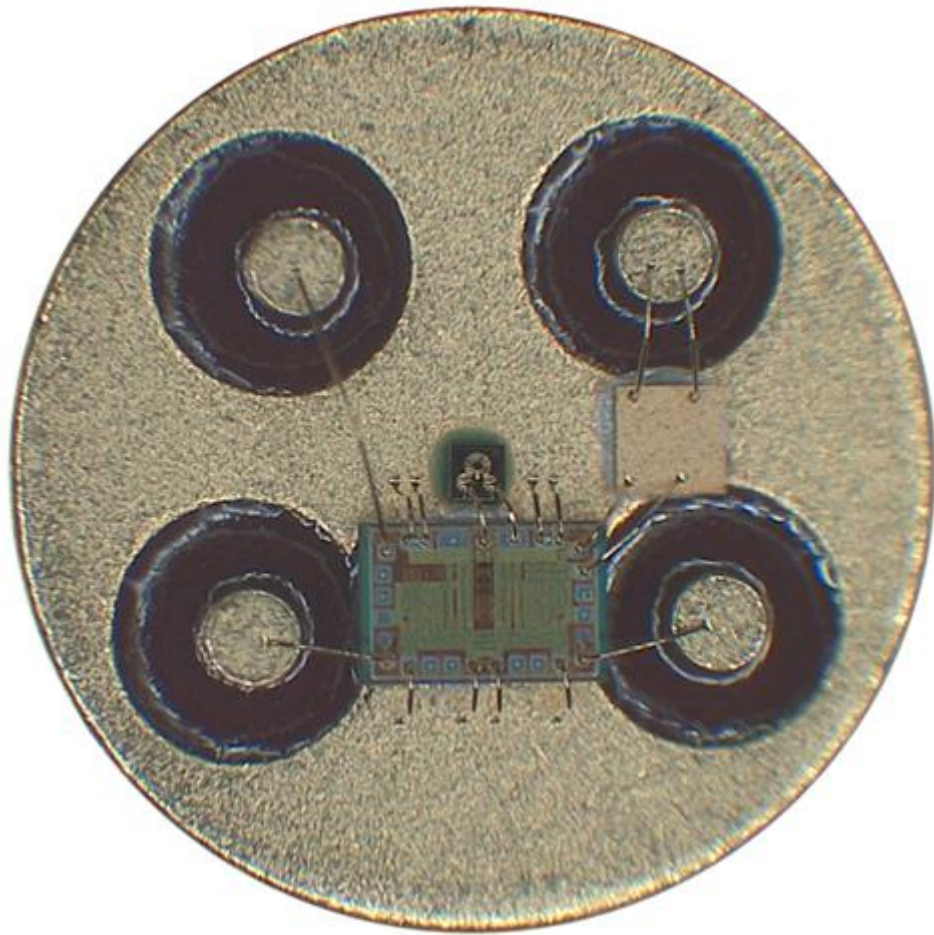
Qualified production samples are available immediately on request and interested customers should contact their local sales representative for further information.

About HiLight Semiconductor Limited:

HiLight Semiconductor Ltd. is a Venture Capital backed, Fabless chip company, founded in 2012 by veterans of several previous start-ups. Specialising in deep sub-micron CMOS, the company designs and supplies the world’s highest performance PMD and PHY ICs for high speed fiber-optics based communications and networking/Datacentre applications.

The company is on target to reach 100 Million total ICs shipped to date later this quarter.

HiLight is headquartered in Southampton, UK, with design offices in Bristol UK and sales and local technical support offices in China (Shenzhen, Wuhan, Shanghai, Chengdu), Taipei and Japan.



HiLight HLR11G0 in 5-pin TO-can