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HiLight Semiconductor releases highest sensitivity CMOS TIA for 10Gbps Long Haul and Next Generation 10G-PON Applications

HiLight Semiconductor, a world leader in CMOS integrated circuit chips for optical communications, today announced the product release of the HLR11G1 high sensitivity transimpedance amplifier (TIA) for 10Gbps Long Haul and Next Generation 10G-PON applications.

The HLR11G1 has been designed for avalanche photodiode (APD) applications. The TIA can be used in a wide range of 10Gbps applications such as Long Haul 10Gbps 'ZR' transceivers, Tuneable DWDM optics and 10G-PON receivers where extra margins of sensitivity are targeted. The TIA features internal digital temperature control of key parameters to maintain excellent sensitivity and overload performance across the industrial operating temperature range. Utilising an advanced fine geometry CMOS process the HLR11G1 has superior jitter performance and coupled with suitable photodiodes can deliver very low system level dispersion penalties.

Using a high gain APD the HLR11G1 attained exception levels of sensitivity performance, repeatedly achieving -29 dBm (1E-12) and -35 dBm (1E-3). In tests with popular Chinese brand 10G APDs the HLR11G1 can consistently achieve -28 dBm (BER 1E-12) and -33 dBm (BER 1E-3) sensitivities, an improvement of at least 1 dB over previous products. The superior levels of performance delivered by the HLR11G1 enable increased margin for Long Haul, DWDM, and NG-PON2 applications.

Other features and performance benefits of the HLR11G1 include 4.2k ohm transimpedance gain, only 21mA current consumption and overload performance of better than -4 dBm with APDs.

The TIA dimensions are just 0.7mm x 1.05mm and fits easily within a standard TO-can optical assembly.

The TIAs are 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 “The HLR11G1 delivers world class sensitivities for 10G long reach applications and next generation PON 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 ground breaking CMOS device, capable of beating competitors performance to enable customers to get the most out of their systems with cost effective technology” 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 has already shipped 80 Million ICs to date.

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.