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## **HiLight Semiconductor announces availability of CMOS 25Gbps Transimpedance Amplifiers (TIAs) for PIN and APD photodiode applications**

HiLight today announced general sampling of a pair of new 25Gbps CMOS Transimpedance Amplifiers for 25Gbps and 100Gbps optical receivers. The HLR25G0 has been designed for PIN photodiode applications while the HLR25G1 is most suited to APD applications. Both TIAs are fabricated in a fine geometry pure CMOS process and designed specifically for low cost TO-can assemblies and chip-on-board (COB) applications due to their optimised pad-out, minimum bill-of-materials (BOM) and small die size – both TIAs have dimensions of just 0.7mm x 1.05mm.

The HLC25G0 PIN PD transimpedance amplifier is ideally suited to cost reducing TO-can and chip-on-board applications, especially the compact TO33 often found in 25G and 100G optics. The IC features adjustable gain and a wide photodiode input capacitance range which enables the HLR25G0 to work with multiple photodiode types and all 5, 6 and 7-pin TO formats, for a wide range of applications. Sensitivities of better than -17 dBm (4.5dB ER, BER 5E-5,  $C_{PD} = 70$  fF) across temperature have been demonstrated in application testing.

Importantly, the HLR25G0 meets required industry standards for optical overload providing error free operation with input powers of up to +4.5dBm at 4.5dB ER.

The HLR25G1 targets avalanche photodiode receivers and can achieve sensitivities of better than -24 dBm (BER 5E-5) in TO-can ROSA. It is particularly suited to applications that require excellent receiver performance for links of 10km or more.

While the TIAs can be used in a wide range of 25 and 100Gbps applications, they are particularly suited to reducing material and assembly costs in the highly competitive 5G CPRI wireless optical communications market segment that requires industrial temperature operation ranges. Both TIAs feature internal digital temperature control of key parameters

to maintain excellent sensitivity and overload performance across the operating temperature range.

The TIAs are part of an advanced CMOS product line that extend HiLight's PMD IC portfolio to 25Gbps rates after completion of a full range of TIAs and Combo ICs for 10Gbps Datacom, Wireless and 10G-PON optical transceivers.

Interested customers should contact their local sales representative for further information. Mass-production quantities will be available from month-end.

Christian Rookes, VP Marketing at HiLight, commented "HiLight already have a complete family of innovative, cost effective, integrated CMOS solutions for high volume SR, LR, APD and PON optical transceivers up to 10Gbps and are now bringing the same innovation and integration to 25Gbps rates with the introduction of a new line of high sensitivity, pure CMOS, transimpedance amplifiers having unprecedented levels of digital control and programmability. Furthermore, the TIAs feature flexible configuration bonding pads to enable customers to build into TO-can, COB or hybrid assemblies"

Jess Brown, VP Sales, commented "We are excited to be offering our customers the opportunity to cost-down their products with our highly integrated, minimum BOM solutions that offer class leading performance in a pure CMOS process. HiLight continues to be 'first to CMOS' with this ground-breaking new TIA product, and Customers can look forward to year-on-year cost-downs only CMOS on 12-inch wafers can provide."

#### **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 track to reach the 100 Million ICs milestone later this year.

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