

CMOS PMD ICs for Optical Communication and Networking

HiLight Semiconductor



25GS-PON
MSA GROUP

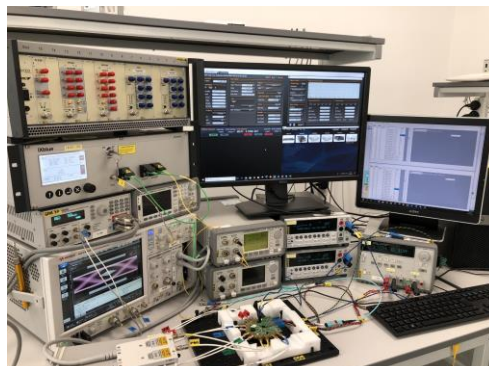
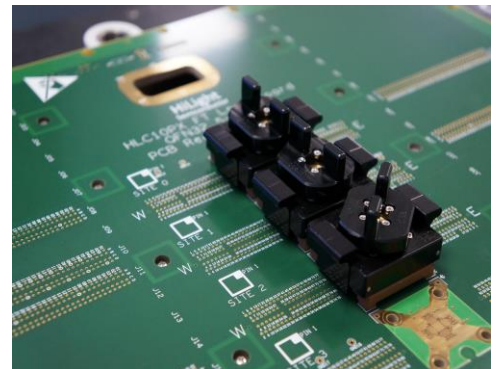
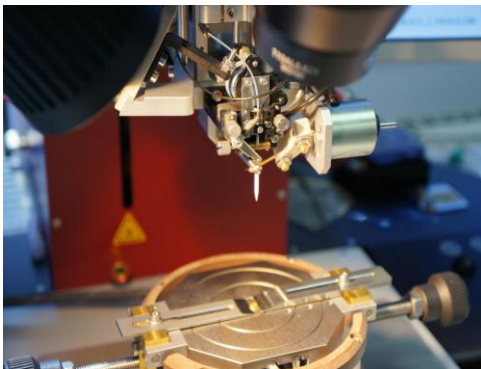
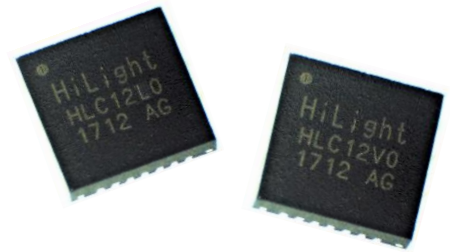


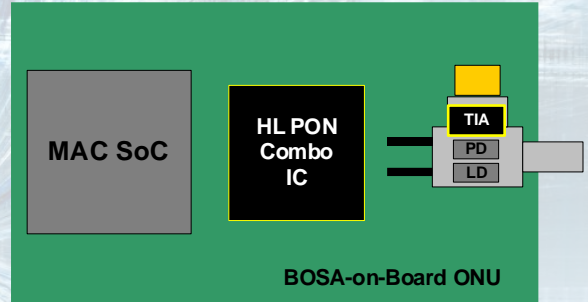
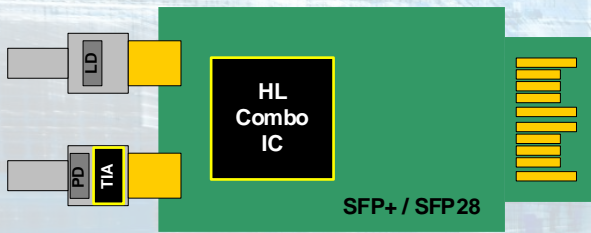
Product Selection Guide

2021

HiLight specialises in the world's highest performance PMD and PHY ICs in advanced CMOS nodes for high speed optical communications and networking applications.

- FTTx PON
- DATACOM
- WIRELESS INFRASTRUCTURE
- TELECOM
- CUSTOMER SPECIFIC





TRANSIMPEDANCE AMPLIFIERS (TIAs)								FTTx PON	DATACOM	WIRELESS	TELECOM
PART CODE	OVERVIEW	DATA RATE (Gbps)	SENSITIVITY (dBm)	GAIN (kΩ)	BW (GHz)	DIE SIZE (mm)	APPLICATION				
HLR1G00	1.25G AGC TIA for PD	1.25	-32.0	55	0.85	0.7 x 0.9	EPON, GbE, FC	●	●	●	●
HLR2G50	2.5G AGC TIA for PD & APD	2.5	-34.5 (APD)	12	1.85	0.7 x 0.9	GPON, OC-48, 2xFC	●	●	●	●
HLR1M00	2.5G multi-rate STIA	≤ 2.5	-30.5	51	1.65	0.7 x 0.9	GPON, 2xEPON, OC-3~48	●	●	●	●
HLR2S50	2.5G Super TIA for GPON	2.5	-31.0	75	1.65	0.7 x 0.9	GPON BOSA-on-Board	●	●	●	●
HLR10G0	12.5G AGC TIA	12.5	-20.0	4.8	8.5/10	0.7 x 0.9	10 GbE SR/LR, CPRI, FC	●	●	●	●
HLR10G0B	10.3G AGC TIA	10.3	-20.0	4.8	8/7.5	0.7 x 0.9	10 GbE LR	●	●	●	●
HLR10G1	11.3G AGC TIA for APD	11.3	-32.0	3	8	0.7 x 0.9	10G-EPON, XG(S)-PON, 10GbE ER	●	●	●	●
HLR11G1	11.3G AGC TIA for APD	11.3	-33.0	4.2	6	0.7 x 1.05	10G ER/ZR, 10G-PON, NG-PON2	●	●	●	●
HLR25G0A	25G AGC TIA for PD	25	-17.0	3.1	≥ 18	0.7 x 1.05	25 GbE, 24G CPRI, 7-pin TOcan	●	●	●	●
HLR25G0B	25G AGC TIA for PD	25	-16.5	3.1	≥ 18	0.7 x 1.05	25 GbE, 24G CPRI, 5-pin TOcan	●	●	●	●
HLR25G0C	25G AGC TIA for PD	25	-17.0	3.6	≥ 18	0.7 x 1.05	25 GbE, 24G CPRI, 5-pin TOcan	●	●	●	●
HLR25G1	25G AGC TIA for APD	25	-24.0	1.7	≥ 18	0.7 x 1.05	25 GbE, 24G CPRI, 25G-PON	●	●	●	●

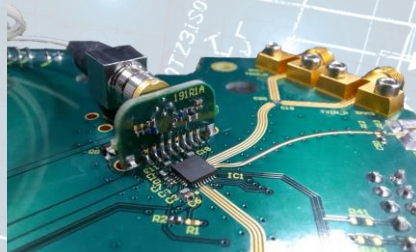
TRANSCIEVERS (Combo ICs)										FTTx PON	DATACOM	WIRELESS	TELECOM	
PART CODE	OVERVIEW	INT. MCU	PWM	DUAL LOOP	DATA RATE (Gbps)	LASER	BIAS (mA)	MOD (mA)	PACKAGE					APPLICATION
10G DATACOM														
HLC10V0	10G VCSEL Combo				10.3	VCSEL	16	16	4mm QFN28	1~10G SFP+ SR, 10G AOCs	●	●	●	●
HLC12V0	10G VCSEL Combo	●			10.3	VCSEL	19	27	4mm QFN28	1~10G SFP+ SR, 10G AOCs	●	●	●	●
HLC12L0	10G DML Combo	●	1x APD		11.3	DML (AC)	115	110	4mm QFN28	1~10G SFP+ LR, 10G CPRI SFP	●	●	●	●
HLC12L1	10G DML Combo	●	1x APD		10.3	DML (DC)	115	110	5mm QFN32	1~10G SFP+ LR, 10G CPRI SFP	●	●	●	●
HLC12L2	10G DML Combo	●	1x APD		10.3	DML (DC)	115	110	4mm QFN32	1~10G SFP+ LR, 10G CPRI SFP	●	●	●	●
10G PON - All featuring HiLight's patented transmitter dual loop automatic extinction ratio control														
HLC10P0	BM DML Combo	●	1x APD	●	10/10	Burst DML	115	110	5mm QFN32	10G-PON SFP	●			
HLC10P1	BM DML Combo	●	1x APD	●	2.5/10	Burst DML	115	110	5mm QFN32	GPON, 10G-PON	●			
HLC10P5	BM DML Combo	●	1x APD	●	2.5/10	Burst DML	115	110	4mm QFN32	Asym 10G-PON BOSA-on-Board	●			
HLC10P6	BM DML Combo	●	1x APD	●	10/10	Burst DML	115	110	4mm QFN32	Sym 10G-PON BOSA-on-Board	●			
25G DATACOM														
HLC28L0*	25G DML Combo		2x PSU		25	DML	70	80	4mm WLFO	25GbE LR, 24G CPRI	●	●	●	●
HLC28L1*	25G DML Combo	●	2x PSU		25	DML	70	80	4mm WLFO	25GbE LR, 24G CPRI	●	●	●	●
HLC28V1*	25G VCSEL Combo	●	2x PSU		25	VCSEL	23	27	4mm WLFO	25GbE SR, 24G CPRI, 32xFC	●	●	●	●

* Coming soon

- COMPLETE APPLICATION SOLUTIONS
- REFERENCE DESIGN FILES AVAILABLE
- GUI CONTROL SOFTWARE PROVIDED
- REFERENCE FIRMWARE SOURCE CODE
- CUSTOMER SCHEMATIC AND PCB REVIEW SERVICE



10G-PON ONU BoB RDK – 2 layer PCB
HLC10P5 Combo IC



XGS-PON BOSA 'BOLTon' PCB connect
HLC10P6 Combo IC



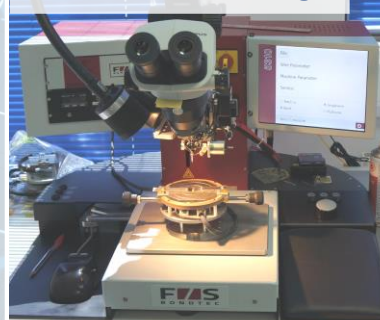
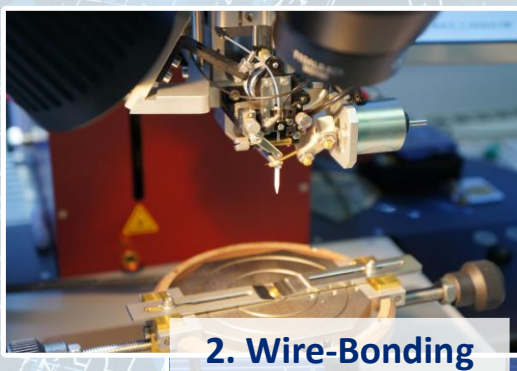
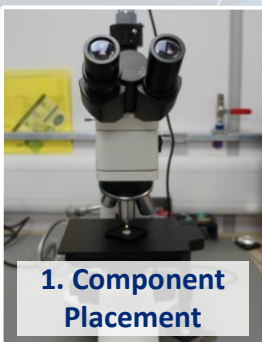
HiLight HLC12x Combo IC SFP+ RDK

REFERENCE DESIGN KITs (RDKs)							FTTx PON	DATACOM	WIRELESS	TELECOM
RDK CODE	HILIGHT COMBO IC	TOTAL POWER [^] -40°C to +85°C	TX/RX RATE (Gbps)	TYPE	COMMENTS	APPLICATION				
DATACOM										
HLC12V0-SR-COB-121	HLC12V0	< 560mW	10.3	SFP+	COB optics	10 GbE, FC, CPRI, AOCs		●	●	●
HLC12V0-SFP-SR-065	HLC12V0	< 560mW	10.3	SFP+	TOSA/ROSA	10 GbE, FC, CPRI		●	●	●
HLC12L0-SFP-LR-047	HLC12L0	< 900mW	10.3	SFP+	TOSA/ROSA	10 GbE, CPRI, SONET		●	●	●
HLC12L1-SFP-LR-176	HLC12L1	< 800mW	10.3	SFP+	TOSA/ROSA	10 GbE, FC, CPRI, SONET		●	●	●
HLC12L2-SFP-LR-224	HLC12L2	< 800mW	10.3	SFP+	TOSA/ROSA	10 GbE, FC, CPRI, SONET		●	●	●
FTTx PON (ONU)										
HLC10P0-SYM-XGS-PON-SFP-054	HLC10P0	< 920mW	10/10	SFP+	Flex BOSA	10G-EPON, XGS-PON, SFPs	●			
HLC10P0-LEAD-XPON-BOB-156	HLC10P0	< 900mW	10/10	BoB	BOLTon connect (Rigid PCB)	10G-EPON, XGS-PON, BoBs	●			
HLC10P1-ASY-EPON-BOB-091	HLC10P1	< 700mW	2.5/10	BoB	Leaded Tx/Rx connect	GPON, 10G-EPON, XG-PON, BoBs	●			
HLC10P5-ASY-EPON-BOB-190	HLC10P5	< 750mW	2.5/10	BoB	Leaded Tx/Rx connect	10G-EPON, XG-PON, BoBs	●			
HLC10P5-ASY-2LAYER-BOB-227	HLC10P5	< 750mW	2.5/10	BoB	Leaded Tx/Rx connect	10G-EPON, XG-PON, 2-Layer PCB	●			
HLC10P6-LEAD-XPON-BOB-191	HLC10P6	< 900mW	10/10	BoB	BOLTon connect (Rigid PCB)	10G-EPON, XGS-PON, BoBs	●			
HLC10P6-SYM-XGS-PON-SFP-218	HLC10P6	< 920mW	10/10	SFP+	Flex BOSA	10G-EPON, XGS-PON, SFPs	●			

[^]Total power is complete SFP/BoB solution power including HiLight Combo IC, Laser/TOSA drive currents, and HiLight TIA in ROS A.

- ROSA EVALUATION SAMPLES
- TO-can/ROSA BUILD GUIDANCE
- CUSTOMER ROSA OPTIMISATION
- ROSA EVALUATION BOARDS

ROSA Sample Build Line



Example TO-can/ROSA Build Guidance

HiLight Semiconductor

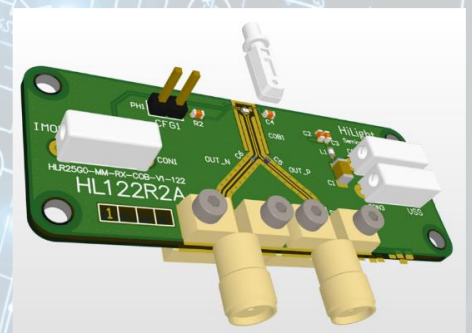
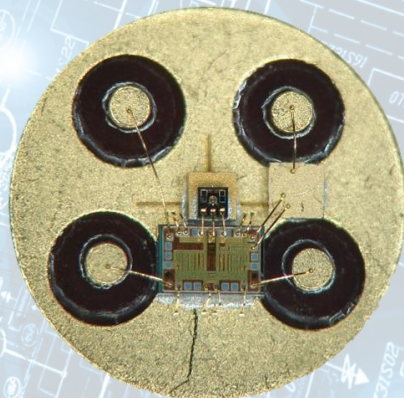
HLR25G0C TIA & GCS DQ231 PD
5-Pin TO+ ROSA Build Guidance

HLR25G0C
25 Gbps CMOS High Sensitivity Transimpedance Amplifier

HLR25G0C TIA & GCS DQ231 PD
5-Pin TO+ ROSA Build Guidance

Revision 1.0 (30/03/2021)

Build Guidance - Confidential Page 1 Revision 001_30 MAR 2021



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