Optoelectronic Solutions

2025 PRODUCT SELECTION GUIDE

MACOM®

Partners from RF to Light

macom.com

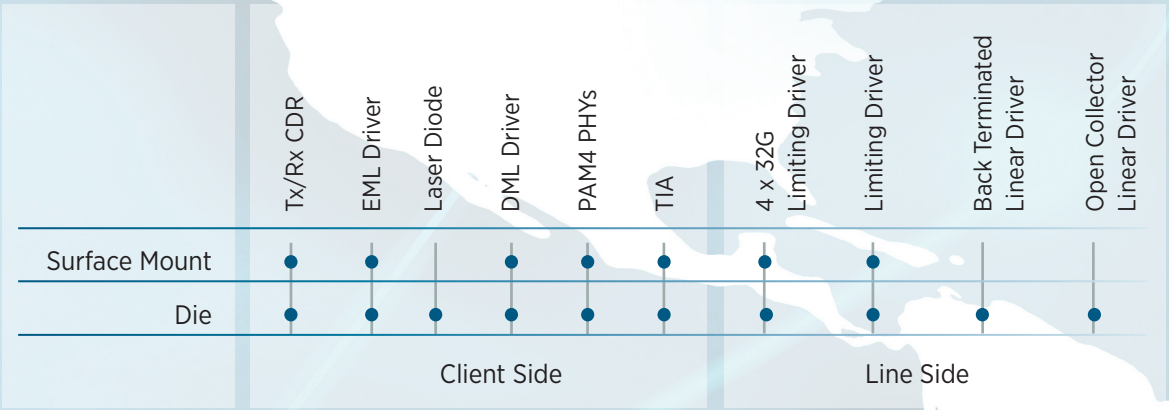
Table of Contents

Products and Technology to Meet the High Bandwidth and Low Latency Requirements of Cloud Data Centers and 5G Optical Networks

MACOM supports a large portfolio of electronic and lightwave components, lasers and photodiodes for optical communications in a wide range of applications. These range from long haul core networks to cloud data centers, FTTx access and wireless infrastructure.

The portfolio addresses the analog interfaces between electrical and optical domains providing solutions to meet the demanding size, power and signal integrity requirements of today's high speed networks — which are expanding to meet the continuously growing demand for data capacity. These products include high performance modulator drivers, transimpedance amplifiers, clock/data recovery circuits, APD and PIN photodiodes, FP and DFB lasers, silicon photonics and PAM4 PHYs. Each of these product families includes variants specifically tailored for the unique needs of data centers, enterprise networks and telecom optical systems operating up to 800 Gbps and beyond.

For FTTx, MACOM has the broadest portfolio of lasers, laser drivers, limiting amplifiers, photodiodes and TIAs covering systems from GPON, EPON, , NG-PON2 and HS PON.



Enabling Bandwidth Density in Optical Networks

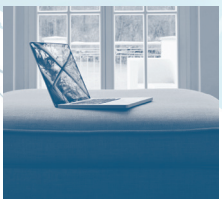
MACOM PRODUCTS

- CDRs
- Gearbox
- Lasers
- Limiting Amplifiers
- Silicon Photonics Components
- MACsec
- Modulator Drivers
- OTN: Framer and Mapper
- PAM4 PHY
- Photodiodes
- Physical Media Devices (PMDs)
- TIAs

MACOM TECHNOLOGIES

- SiPh
- InP
- GaAs
- CMOS
- SiGe

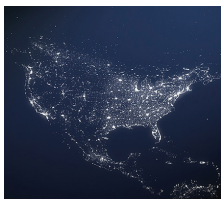
MACOM MARKETS


FTTx/PON


Wireless Fronthaul/ Backhaul

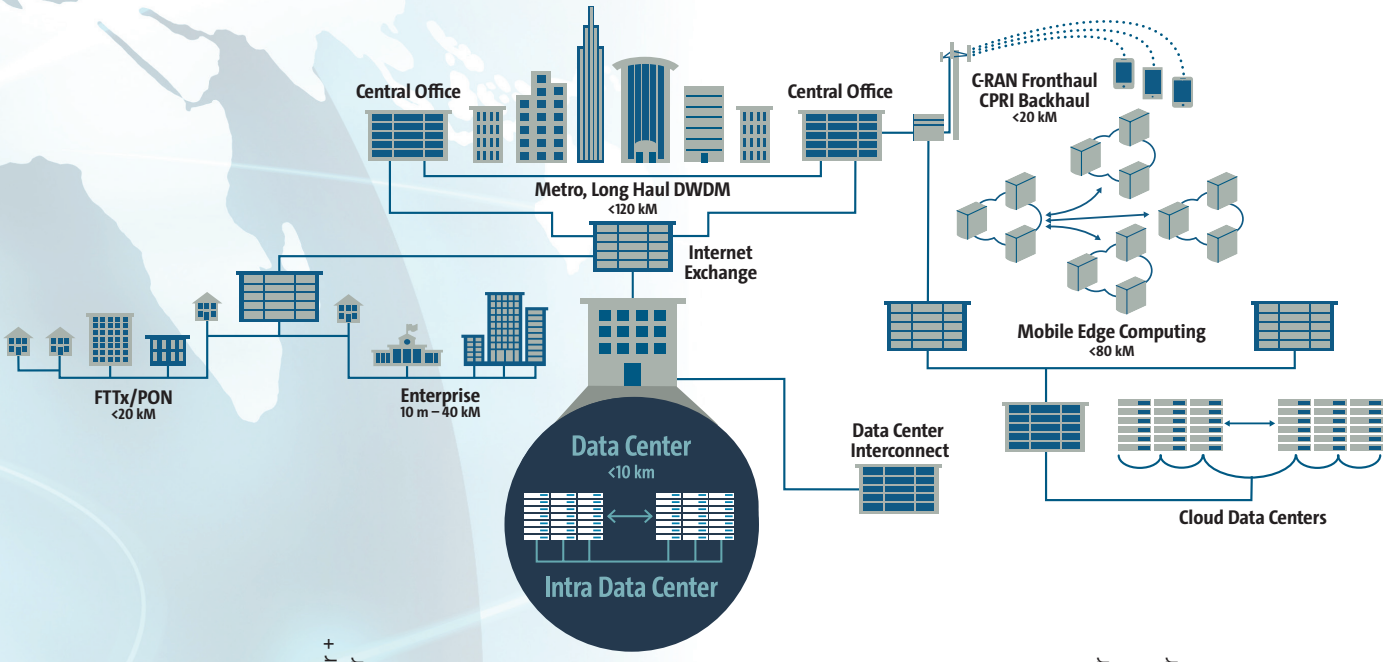

Cloud Data Center

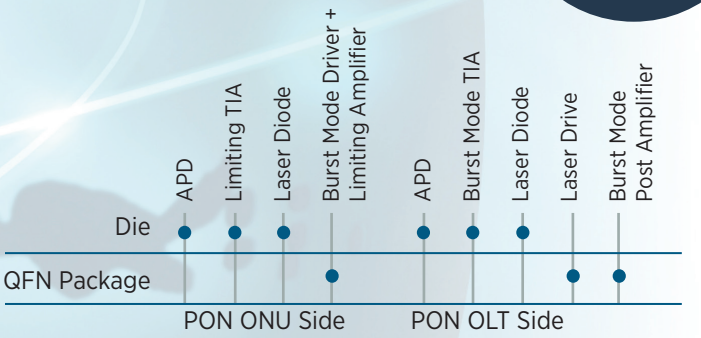

Metro

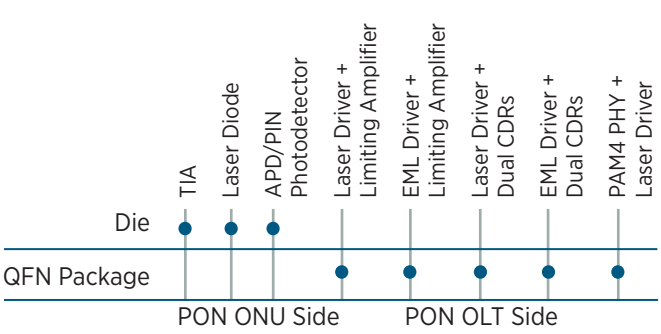

Long Haul


Free Space Optical

MACOM Technologies and Products in Optoelectronic & Phontonic Content







Innovative Design Solutions to Solve Complex Challenges

Indium Phosphide (InP)

MACOM has assumed a key position in the market as a premier supplier of both photonic devices such as lasers, APD and PIN photodetectors, and optoelectronics products. *Key applications include laser diodes for silicon photonics, data centers, mobile backhaul, access networks and metro markets, and modulator drivers for high capacity, coherent systems in metro and data center interconnect applications.*

CMOS

MACOM utilizes CMOS technology for design in a range of applications from wireless infrastructure basestations to aerospace and defense, and complex Ethernet PHY devices. CMOS allows for the seamless integration of high speed data transmission and complex digital functionality. Ethernet devices used in optical networking include DSP PHYs as well as IEEE 802.1AE MACsec, which solves the security issues of Ethernet networks by providing confidentiality, authenticity and integrity of data. *Typical CMOS products and applications include PAM4 PHYs, MACsec, mobile phone chipsets, cellular basestations/wireless infrastructure, satellite radio, GPS and DAB, 2.4 GHz and 5.0 GHz WLAN, VSAT, CATV and broadband, commercial and military radar and multi-market applications.*

Silicon Germanium (SiGe)

Building upon a long history in designing integrated circuits and subsystems for radar and millimeter wave (mmW) markets, MACOM leads the way in applying SiGe BiCMOS technology to both commercial and military needs. SiGe is a high value, differentiating technology which we will continue to leverage in the company's core product segments. *Key applications include high-speed optical network transceivers, basestations, wired broadband communications, high speed crosspoint switches and global positioning systems.*

Gallium Arsenide (GaAs)

For over three decades, MACOM has been the world leader in the advancement of GaAs technology, producing state-of-the-art, high performance discrete devices, control components, mixed signal processing and converters, driver amplifiers, CATV amplifiers, LNAs and power amplifiers as single purpose and multi-function MMICs. *Key applications include wireless backhaul, industrial, scientific and medical, global positioning system, CATV and wired broadband, aerospace and defense and satellite communications.*

MACOM Evaluation Modules (EVMs) and Reference Design Kits Enhance New Product Development, Reduce Costs and Optimize Time-to-Market

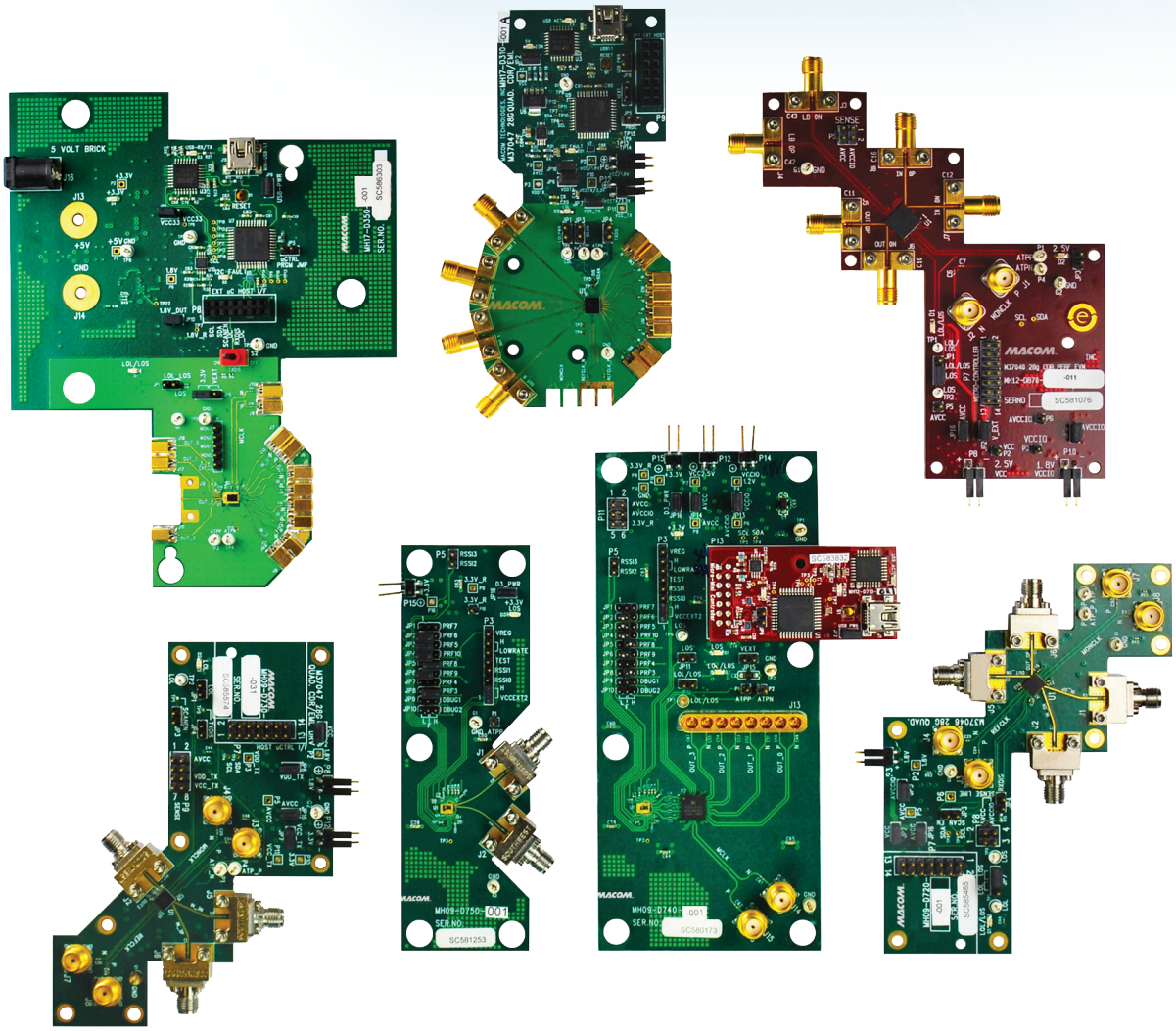
In addition to the support of our world-class application team, MACOM offers a number of custom reference design kits, Evaluation Modules (EVMs) and design guides which enhance the development of new products, reduce costs and optimize time-to-market.

MACOM EVMs provide customers with a vehicle to test product features, measure product performance and help design the product into their application. From backplanes to line cards and optical modules, MACOM reference design kits and EVMs are built to ease the evaluation of our latest solutions into the application environments of our customers and partners.

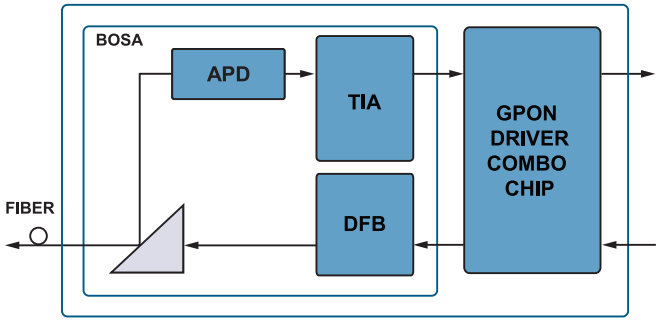
We package these offerings with our extensive GUI support as well. In addition to the EVM and the required software and user guide, schematics of circuit boards and modules, and supporting documents are provided.

From low speed solutions to those operating at 100G and above, MACOM offers hardware expertise and design support to enable innovative, next-generation optical products in a wide variety of markets.

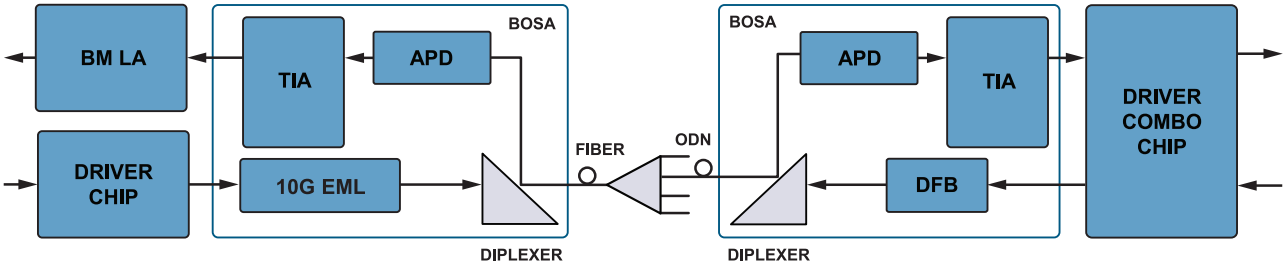
Contact the MACOM sales team (**sales@macom.com**) to learn more.



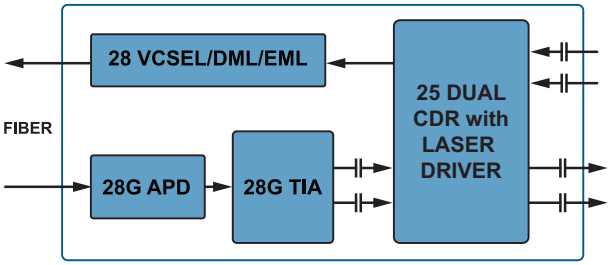
GPON ONU BOSA-on-Board (A)



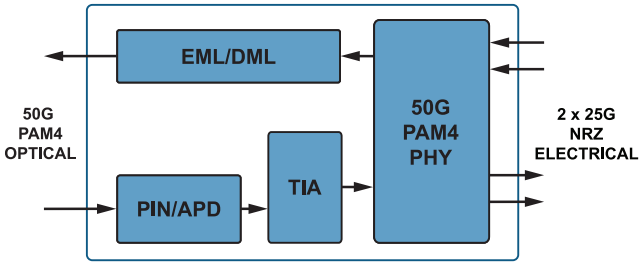
PON ONU/OLT (B)



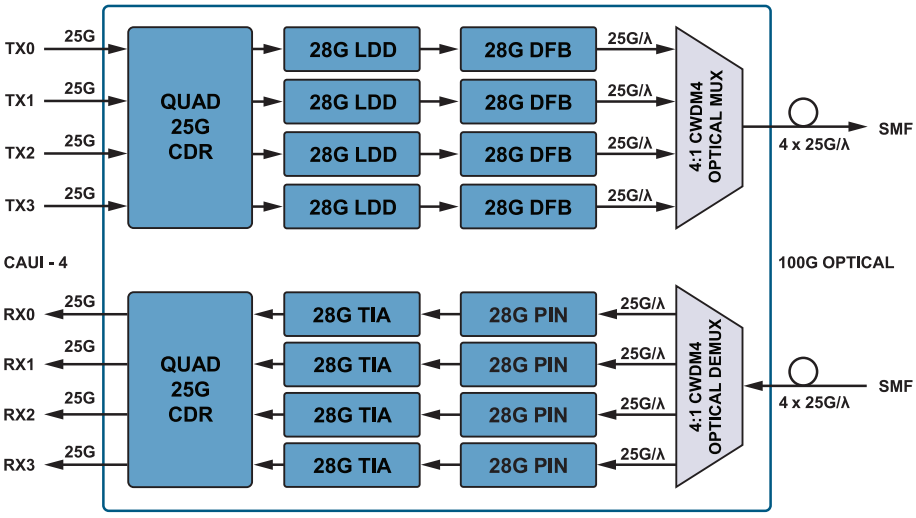
25G Chipset: SFP28 SR/LR/ER (C)



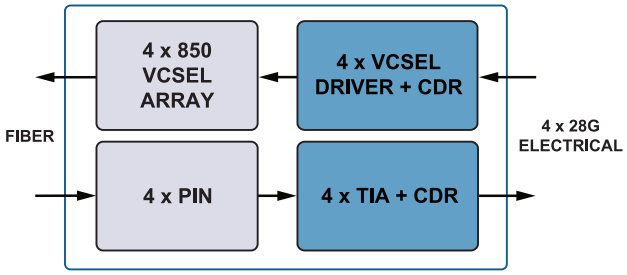
50 Gbps PAM4 FR/LR/ER (E)



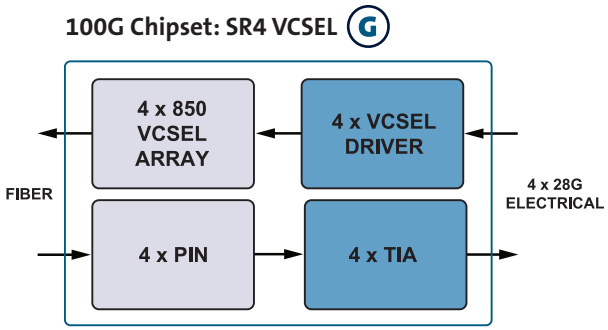
100G Chipset: CWDM4 Solution (D)



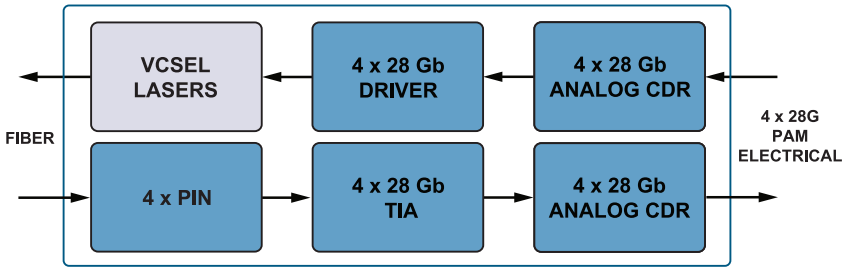
100G Chipset: SR4 VCSEL (F)



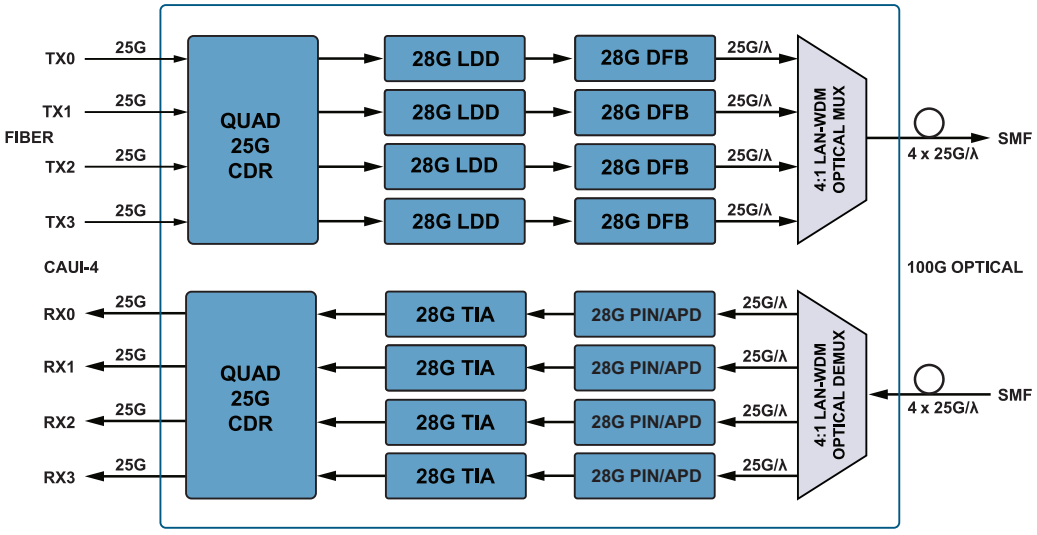
100G Chipset: SR4 VCSEL (G)



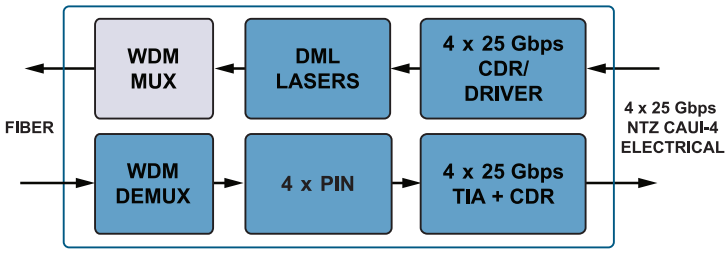
200/400G Chipset: SR4 VCSEL (H)



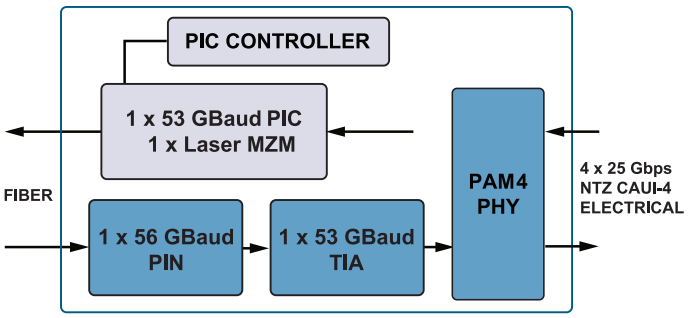
100G BASE-LR 4/ER 4 (QSFP28) (I)



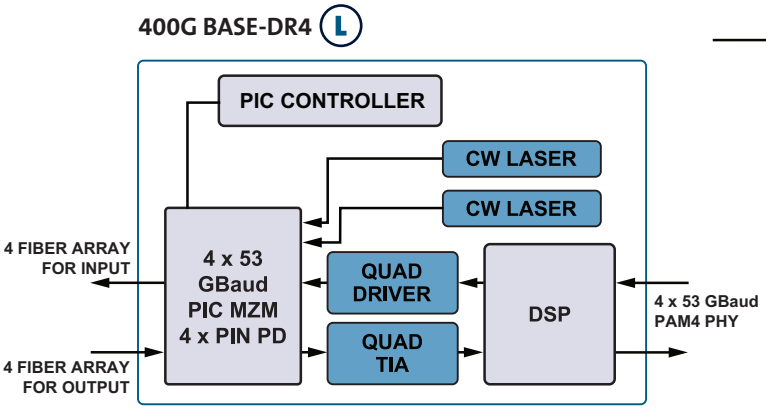
100G Gbps CWDM4 DML-Based Chipset (J)



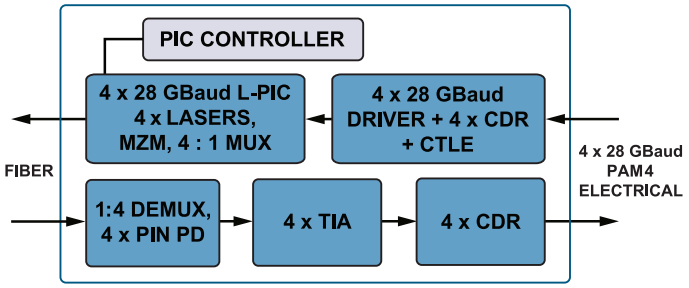
100G Single Lambda (K)



400G BASE-DR4 (L)

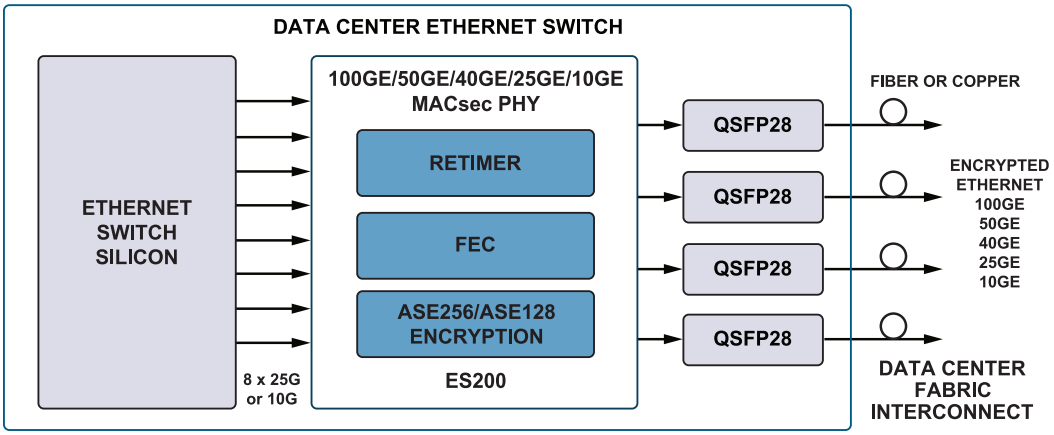


200 Gbps SMF Chipset (M)



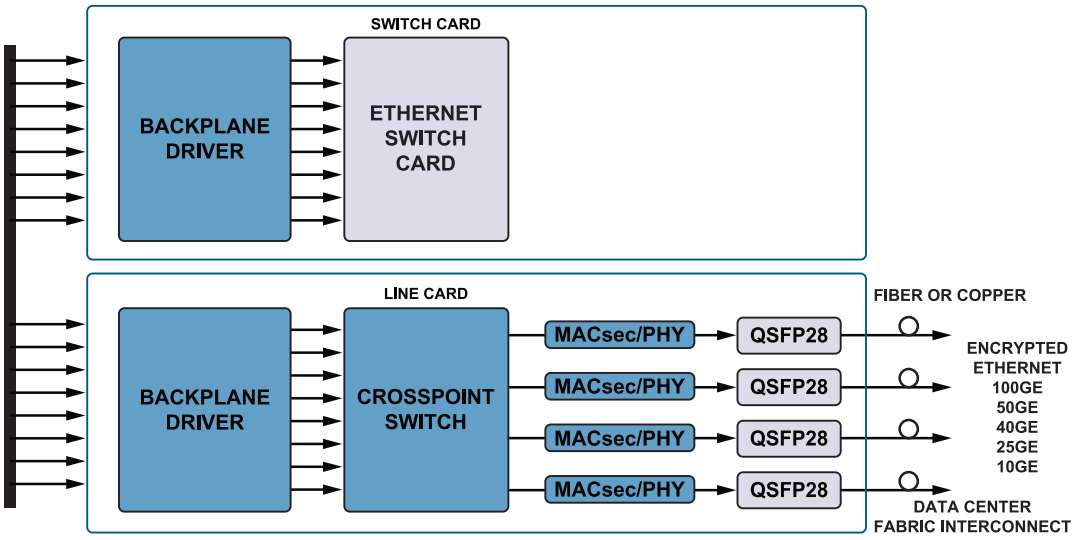
Silicon Photonic 100GBASE-DR/FR Compliant (Single 53 GBaud PAM4 Data Lane)
Chipset Provides Automated PIC Calibration and Monitoring and Build in Self Test (BiST)

Data Center Switch Interconnect Security Solution (N)

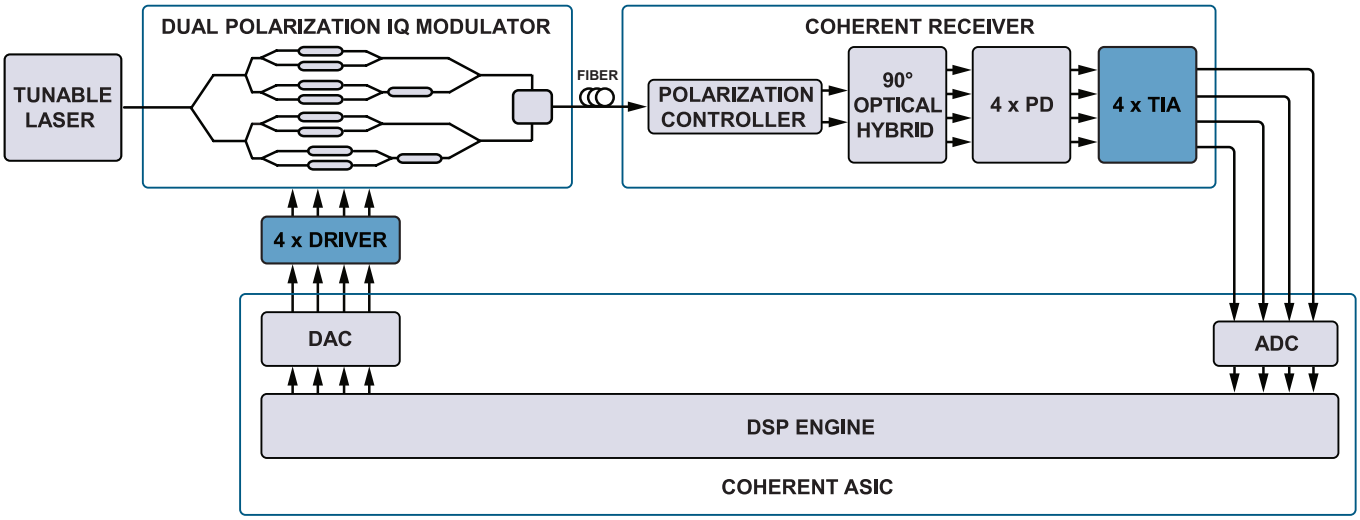


 Detailed specifications can be found on our website at **macom.com** by typing the part number into the search box. All specifications are subject to change.

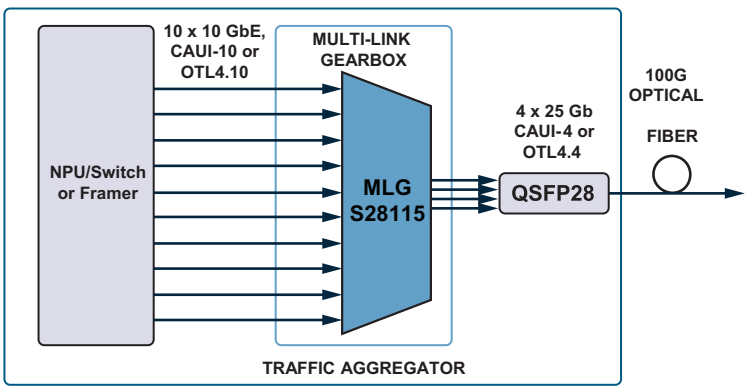
Backplane Drivers (O)



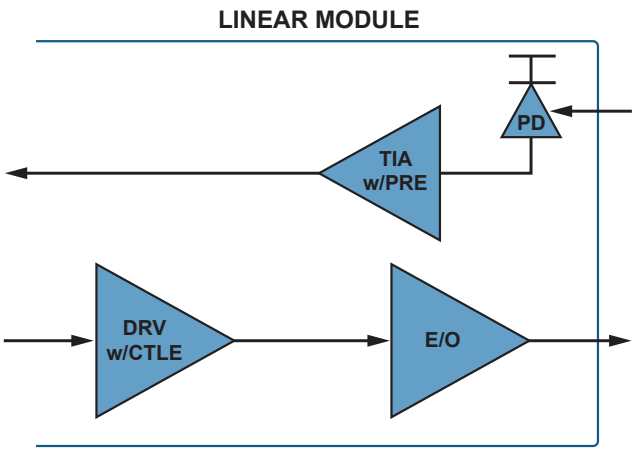
100G – 800G Long Haul/Metro/DCI Application Solution (P)



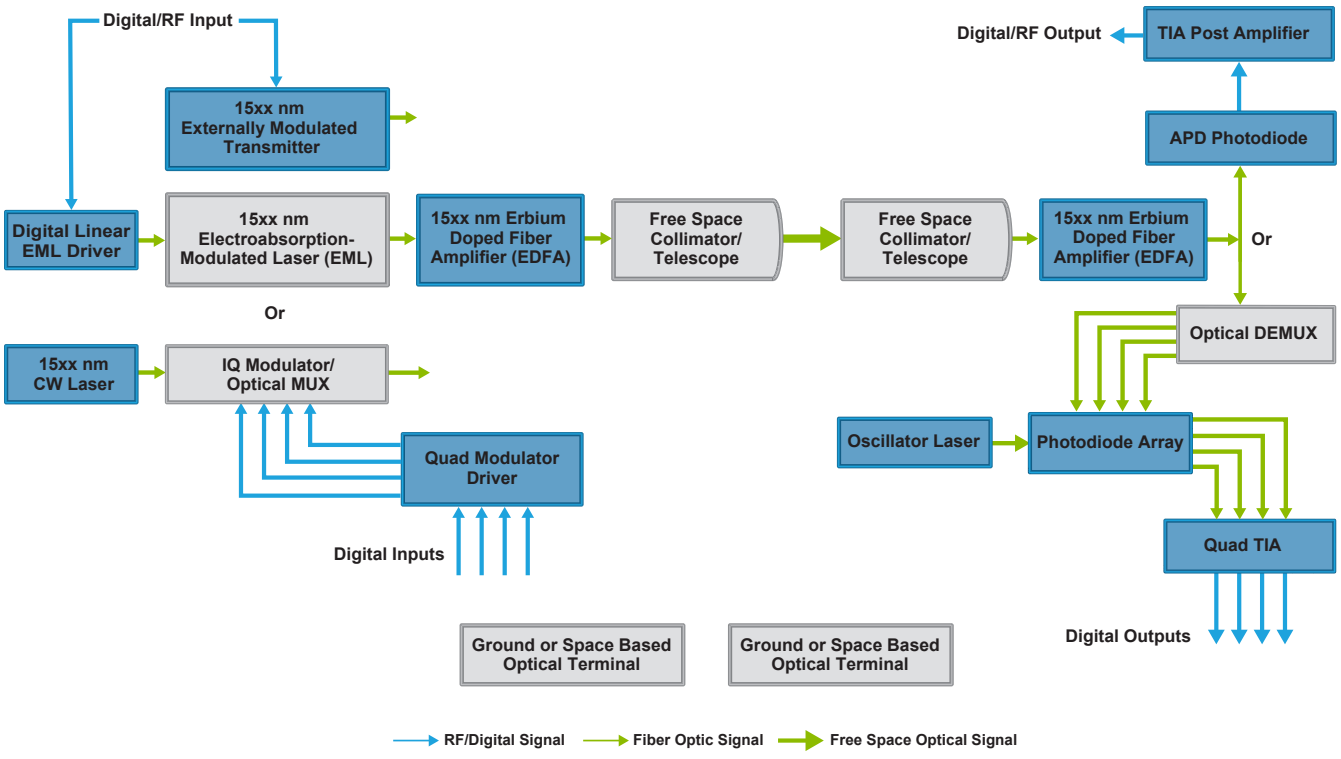
Gearbox Traffic Aggregator – 10 x 10G to 4 x 25G (Q)



MACOM PURE DRIVE™ Linear Architecture (R)



Free Space Optical (S)



Lasers and Modulator Drivers

Part Number	Description	Block Diagram Key*	Max Data Rate (Gbps)	Channels (#)
M02097	500 Mbps, 3.3/5 V LED Driver/Limiting Ampiifier	**A**	0.5	1
M02095	1.25 Gbps, 3.3/5 V Laser Driver/Limiting Ampiifier	**A**	1.25	1
M02090	2.5 Gbps, 3.3 V Burst Mode Laser Driver/Limiting Ampiifier	**A**	2.5	1
MALD-02101	3.1 Gbps Low Power Dual Closed Loop Burst Mode Laser Driver with Integrated Limiting Ampiifier	**A**	3.1	1
MALD-02103C	3.1 Gbps Low Power Dual Closed Loop Burst Mode Laser Driver with Integrated Limiting Ampiifier	**A**	3.1	1
M02061	4.3 Gbps, 3.3 or 5 V Laser Driver	**A**	4.3	1
M02096	4.3 Gbps, 3.3/5 V Laser Driver/Limiting Ampiifier	**A**	4.3	1
MALD-02184A	Tx CDR + Modulator Driver with Dual-Output Burst Mode Limiting Ampiifier	**B**	11.3	1
MALD-02186A	Tx CDR + Modulator Driver and Dual-Output Burst Mode Limiting Amplifier with DC – DC Controller and Diagnostics	**B**	11.3	1
M02193	12.5 Gbps Low Power Laser Driver and Limiting Ampiifier with DC – DC Controller and EEPROM with Digital Diagnostics	**—**	12.5	1
M02180	Burst Mode Laser Driver/Limiting Ampiifier + Rx CDR + DDMI Controller and APD DC – DC Controller & Ampiifier; EEPROM	**B**	12.5	1
MALD-02181	12.5G Burst Mode Laser and LIA + DC – DC Controller, EEPROM and DDMI Controller	**B**	12.5	1
MALD-02182	12.5G Burst Mode Laser and LIA + DC – DC Controller and DDMI Controller	**B**	12.5	1
MALD-02183	12.5G Burst Mode Laser and LIA + DC – DC Controller and DDMI Controller	**B**	12.5	1
MALD-02194	12.5G Laser and LIA +DDMI Controller	**—**	12.5	1
MALD-37030	26 Gbps Multi-Rate Laser Driver with LIA/CDR	**C**	26.5	1
MAOM-37032	Dual 28 Gbps CDR with Integrated EML Driver	**C**	26.5	1
MALD-37345B	Quad 28G VCSEL Driver with Input Equalizer	**F, G**	28	4
MALD-38435	Quad 53G VCSEL Driver with Input Equalizer	**H**	28	4
MALD-37045	Four Channel 25G/28G CDR with Integrated VCSEL Driver	**F**	28	4
MALD-37145	Four Channel 25G/28G CDR with Integrated VCSEL Driver	**F**	28	4
MALD-37845	Four Channel Transmit and Four Channel Receive 25G/28G CDR with Integrated VCSEL Drivers and TIAs	**F**	28.1	4 Tx & 4 Rx
MALD-37031	28 Gbps Multi-Rate Laser Driver with LIA/CDR	**C**	28.1	1
MALD-37035	26 Gbps Multi-Rate Burst Mode Laser Driver with Limiting Amplifier, Dual CDR, PMIC and DDMI	**B**	26	1

Lasers and Modulator Drivers: Client Side

Part Number	Description	Block Diagram Key*	Max Data Rate (Gbps)	Channels (#)
MAOM-002301-DIE	Single Channel 28 Gbps Direct, Modulated Laser Driver IC, Die	**C, D, I**	28	1
MAOM-002322-DIE	Single Channel 28 Gbps Direct Modulated Laser Driver IC, Die	**D, E, I**	28	1
MAOM-002326	Single Channel 28 Gbps Direct Modulated Laser Driver IC	**D, E, I**	28	1
MAOM-003119	Single Channel 28 GBaud Linear EML Driver	**—**	28	1
MAOM-002304-DIE	Quad Channel 28 Gbps Direct Modulated Laser Driver IC, Die	**D, I**	28	4
MAOM-002422-DIE	Quad Channel 28 Gbps Direct Modulated Laser Driver IC, Die	**D, E, I**	28	4
MAOM-005321	Single Channel 56 GBaud Linear EML Driver		53/56	1
MAOM-005421	Quad Channel 56 GBaud Linear EML Driver	**L**	53/56	4
MAOM-005324	Single Channel 56 GBaud Linear DML/SiPh Driver	**—**	53/56	1
MAOM-005424	Quad Channel 56 GBaud Linear DML/SiPh Driver	**L**	53/56	4
MAOM-005320-DIE	Single Channel 56 Gbps Direct Modulated Laser Driver IC, Die	**D, E, I**	56	1
MAOM-005420-DIE	Quad Channel 56 Gbps Direct Modulated Laser Driver IC, Die	**D, E, I**	56	4
MAOM-005413	Quad Channel 56 GBaud Linear EML Driver	**L**	56	4
MAOM-005408-DIE	Quad Channel 56 GBaud Linear SiPh Driver, Die	**R**	56	4
MAOM-05408L-DIE	Quad Channel 56 GBaud Linear SiPh Driver, Die	**R**	56	4
MAOM-005429	Quad Channel 56 GBaud Linear SiPh Driver, Die	**L**	56	4
MAOM-005808	Eight Channel 56 GBaud Linear SiPh Driver, 500 µm Channel Pitch, Die	**—**	56	8
MAOM-005818	Eight Channel 56 GBaud Linear SiPh Driver, 625 µm Channel Pitch, Die	**—**	56	8

*Refer to Block Diagrams on pages 8 – 11
Detailed specifications can be found on our website at **macom.com** by typing the part number into the search box. All specifications are subject to change.

Lasers and Modulator Drivers: Client Side (continued)

Part Number	Description	Block Diagram Key*	Max Data Rate (Gbps)	Channels (#)
MAOM-011112	Single Channel 112 GBaud Linear EML Driver, Die	—	112	1
MALD-39076	Quad 53 GBaud Equalizer + EML/SiP Driver	R	53 Gbaud	4
MALD-39077	Quad 53 GBaud Equalizer + EML/SiP Driver with Integrated AC Coupling and HF BiasT	R	53 Gbaud	4
MAOM-010404	Quad Channel 112 GBaud Linear SiPh Driver, Die	—	112	4
MALD-38482	Quad 26 GBaud PAM4/NRZ VCSEL Driver	—	112	4
MALD-39435	Quad 53 GBaud PAM4/NRZ VCSEL Driver	—	112	4
MALD-39437	Quad 53 GBaud PAM4/NRZ VCSEL Driver	—	112	4
MAOM-010408	Quad Channel 112 GBaud Linear SiPh Driver, Die	—	112	4

Lasers and Modulator Drivers: Metro/Line Side

Part Number	Description	Block Diagram Key*	Max Baud Rate (Baud)	Channels (#)
MAOM-003408	Quad Channel 32 GBaud Limiting Modulator Driver, Die	—	32	4
MAOM-03417L	Quad Channel Low Power Linear Modulator Driver	P	32	4
MAOM-003409	Quad Channel 32 GBaud Limiting Modulator Driver, Die	—	32	4
MAOM-03409B	32 GBaud Linear Differential Modulator Driver	P	32	4
MAOM-03409D	32 GBaud Linear Differential Modulator Driver	P	32	4
MAOM-03417B	Quad Channel 32 GBaud Linear Modulator Driver	P	32	4
MAOM-003407	Quad Channel 32 GBaud Limiting MZ Modulator Driver	P	32	4
MAOM-003405	Quad Channel 32 GBaud Limiting MZ Modulator Driver	P	32	4
MAOM-002105	32 GBaud Limiting MZ Modulator Driver	P	32	1
MAOM-006408	Quad Channel 64 GBaud Linear Modulator Driver, Die	P	64	4
MAOM-006409	Quad Channel 64 GBaud Linear Open Collector Modulator Driver, Die	P	64	4
MAOM-006416	Quad Channel 64 GBaud MZ Modulator Driver	P	64	4
MAOM-006418	Quad Channel 64 GBaud Linear Modulator Driver	P	64	4
MAOM-009408	Quad Channel 96 GBaud Linear Open Collector Modulator Driver, Die	P	96	4
MAOM-009409	Quad Channel 96 GBaud Linear Modulator Driver, Die	P	96	4
MAOM-012404	Quad Channel 128 GBaud Linear Terminated Modulator Driver, Die	P	128	4
MAOM-012408	Quad Channel 128 GBaud Linear Open Collector Modulator Driver, Die	P	128	4
MAOM-012409	Quad Channel 128 GBaud Linear Open Collector Modulator Driver, Die	P	128	4

Transimpedance Amplifiers (TIAs)

Part Number	Data Rate (Gbps)	Diff Gain (dB)	Input Over Load (mApp)	On Chip AGC
CGY2144UH/C2	43	49	3.5	No

Transimpedance Amplifiers (TIAs): Coherent

Part Number	Description	Block Diagram Key*	Max Baud Rate (Baud)
MATA-006806	64 GBaud Dual Channel Linear TIA for 400G and 600G Coherent Receivers	P	64
MATA-006406	64 GBaud Quad Channel Linear TIA for 400G and 600G Coherent Receivers	P	64
MATA-009406	96 GBaud Quad Channel Linear TIA for 400G, 600G and 800G Coherent Receivers	P	96
MATA-012803	128 GBaud Dual Channel Linear TIA for 800G Coherent Receivers	P	128
MATA-012403	128 GBaud Quad Channel Linear TIA for 800G Coherent Receivers	P	128

Transimpedance Amplifiers (TIAs): Client Side

Part Number	Description	Block Diagram Key*	Max Data Rate (Gbps)
M02007	Low-Noise TIA with AGC	—	0.2
M02006	155 Mbps AGC Pre-Ampiifier	—	0.2
M02038	1.3 Gbps Burst Mode CMOS TIA B 1.2	B	1.2

*Refer to Block Diagrams on pages 8 – 11

Detailed specifications can be found on our website at **macom.com** by typing the part number into the search box. All specifications are subject to change.

Transimpedance Amplifiers (TIAs): Client Side (continued)

Part Number	Description	Block Diagram Key*	Max Data Rate (Gbps)
M02016	1.25 Gbps AGC Pre-Ampiifier	—	1.3
M02036	2.5 Gbps Burst Mode G PON OLT TIA	B	1.3
M02035	Burst Mode OLT TIA	B	2.5
M02015	2.5 Gbps AGC Pre-Ampiifier	—	2.5
M02025	100 Mbps to 3.125 Gbps Multi-Rate CMOS TIA with AGC	—	3.2
M02020	4 Gbps CMOS TIA with AGC	—	4.3
MATA-02135	6/8/10/11.3 Gbps TIA with AGC	B	10
MATA-02240	2.5G/10G Gbps AGC TIA for PON ONU	B	10
MATA-02239	2.5G/10G Gbps Burst Mode TIA with Rate Select	B	10
M03002	28 Gbps TIA	C, D, G, I	28
MATA-03003	28 Gbps Quad Channel	C, D, G, I	28
MATA-03006	28G Single Channel TIA for APD	I	28
MATA-03013	28 Gbps Quad Channel TIA	C, D, G, I	28
MATA-03106	28G Quad Channel TIA for APD	I	28
MATA-39136	Quad Linear 53 GBaud PAM4 TIA	—	112
MATA-40734	Quad Linear 212 Gbps PAM4 TIA	—	227

Transimpedance Amplifiers (TIAs): Client Side

Part Number	Description	Block Diagram Key*	Max Available Bandwidth (nA)	Channels (#)
MATA-03809	26 to 28 GBaud Linear TIA 53 to 56 Gbps PAM4	E, K	~19	1
MATA-38019	Quad 26 to 28 GBaud Linear TIA 53 Gbps to 56 Gbps	E, K	~19	1
MATA-03819	Quad 26 to 56 GBaud Linear TIA 53 to 112 Gbps PAM4, Wirebond, PIN PD	H, M	~30	4
MATA-03820	Quad 26 to 56 GBaud Linear TIA 53 to 112 Gbps PAM4, Flip Chip, PIN PD	H, M	~30	4
MATA-03919	Quad 26 to 56 GBaud Linear TIA 53 to 112 Gbps PAM4, Wirebond, APD	H, M	~30	4
MATA-03920	Quad 26 to 56 GBaud Linear TIA 53 to 112 Gbps PAM4, Flip Chip, APD	H, M	~30	4
MATA-38134	Quad Linear 26/53 GBaud PAM4/NRZ TIA, 500 µm	H, M	~30	4
MATA-38434	Quad Linear 26 GBaud PAM4 TIA, 250 µm	H	~30	4
MATA-38834	Octal 26 to 56 GBaud Linear TIA, 500 µm, Wirebond	—	~30	8
MATA-38836	Octal 26 to 56 GBaud Linear TIA, 500 m, Flip Chip	—	~30	8
MATA-05819	Linear 53 GBaud PAM4 TIA	E, K	~35	1
MATA-03821	Bandwidth/Gain Optimized	H, M	~40	4
MATA-03822	Bandwidth/Gain Optimized	H, M	~40	4
MATA-05817	Bandwidth/Gain Optimized	K	~45	1
MATA-05827	Bandwidth/Gain Optimized	K	~45	1

Part Number	Number of Channels	Wirebond/Flip Chip	Max Bandwidth (GHz)
MATA-39434	4 x 56 GBaud	Wirebond	~30
MATA-40736	4 x 113 GBaud	Flip Chip	45
MATA-39534	4 x 56 GBaud	Wirebond	~35
MATA-39134	4 x 56 GBaud	Wirebond	~37
MATA-39138	4 x 56 GBaud	Wirebond	~37

Transimpedance Amplifiers (TIAs): Client Side

Part Number	Description	Block Diagram Key*	Max Data Rate (Gbps)
M02007	Low-Noise TIA with AGC	—	0.2
M02006	155 Mbps AGC Prep-Ampiifier	—	0.2
M02038	1.3 Gbps Burst Mode CMOS TIA B 1.2	B	1.2

*Refer to Block Diagrams on pages 8 – 11
Detailed specifications can be found on our website at **macom.com** by typing the part number into the search box. All specifications are subject to change.

Transimpedance Amplifiers (TIAs): Client Side

Part Number	Description	Block Diagram Key*	Max Data Rate (Gbps)
M02016	1.25 Gbps AGC Pre-Ampiifier	—	1.3
M02036	2.5 Gbps Burst Mode G PON OLT TIA	B	1.3
M02035	Burst Mode OLT TIA	B	2.5
M02015	2.5 Gbps AGC Pre-Ampiifier	—	2.5
M02025	100 Mbps to 3.125 Gbps Multi-Rate CMOS TIA with AGC	—	3.2
M02020	4 Gbps CMOS TIA with AGC	—	4.3
MATA-02135	6/8/10/11.3 Gbps TIA with AGC	B	10
MATA-02240	2.5G/10G Gbps AGC TIA for PON ONU	B	10
MATA-02240	2.5G/10G Gbps AGC TIA for PON ONU	B	10
MATA-02239	2.5G/10G Gbps Burst Mode TIA with Rate Select	B	10
MATA-02239	2.5G/10G Gbps Burst Mode TIA with Rate Select	B	10
M03002	28 Gbps TIA	C, D, G, I	28
MATA-03003	28 Gbps Quad Channel	C, D, G, I	28
MATA-03006	28G Single Channel TIA for APD	I	28
MATA-03013	28 Gbps Quad Channel TIA	C, D, G, I	28
MATA-03106	28G Quad Channel TIA for APD	I	28
MATA-39136	Quad Linear 53 GBaud PAM4 TIA	—	112
MATA-40734	Quad Linear 212 Gbps PAM4 TIA	—	227

Transimpedance Amplifiers (LIDAR)

Part Number	Description	Number of Channels (#)	Bandwidth (MHz)
MATA-02624	4 Channel Transimpedance Amplifier for FMCW LIDA	4	1200

Clock & Data Recovery

Part Number	Description	Block Diagram Key*	Max Data Rate (Gbps)	Channels (#)
M21012	42 Mbps to 3.2 Gbps Quad Multi-Rate CDR	—	3.2	4 x 4
MAOM-38053	28 Gbps Quad Channel TIA	—	28	4
MASC-37028	Multi-Rate, Dual 28 Gbps CDR with Integrated Laser Driver	—	26.5	2
MATA-37244	Four Channel 25G/28G CDR with Integrated TIA/Limiting Amplifier	—	28	4
MATA-37644	Multi-Rate 28G CDR with Integrated TIA/Limiting Amplifier	—	28	1
M37046	Quad 24G/26G TIA/LA with Integrated CDR	D, I	28	4
MASC-37048	Four Channel 25G/28G CDR	—	28	4
MALD-37645	Multi-Rate 28G VCSEL Driver/CDR with Input Equalizer	F, G	28	1
M37049	Four Channel 25G/28G CDR with Integrated Input Equalizer	F	28	4
MALD-38435	Quad 53G VCSEL Driver with Input Equalizer	D, F, I	28	4
MATA-37144	Four Channel 25G/28G CDR with Integrated VCSEL Driver	D, F, I	28	4
MALD-37045	Four Channel 25G/28G CDR with Integrated VCSEL Driver	D, F, I	28	4
MALD-37545	Four Channel 25G/28G CDR with Integrated VCSEL Driver for SAS 4.0 for Max Data Rate 22.5	—	28	4
MALD-37445	Quad 25G/26G CDR/VCSEL Driver with Input Equalizer	F, G	28	4
MAOM-037057	Quad 25G/28G CDR with Integrated Equalization and Amplifier, EML Driver	I	28	4
MAOM-37051A	Quad 25G/28G CDR with Integrated Equalization and EML Driver	F, G	28	4
M37047	Four Channel 25G/28G CDR with Integrated EML Driver	F	28	4
MALD-37059	Four Channel 25G/28G CDR with Integrated DML Driver	D, F, I	28	4
MASC-37029	Multi-Rate, Dual 28 Gbps CDR with Integrated Laser Driver	—	28.1	2

*Refer to Block Diagrams on pages 8 – 11

Detailed specifications can be found on our website at **macom.com** by typing the part number into the search box. All specifications are subject to change.

Clock & Data Recovery

Part Number	Description	Block Diagram Key*	Max Data Rate (Gbps)	Channels (#)
MALD-37845	Four Channel Transmit and Four Channel Receive 25G/28G CDR with Integrated VCSEL Drivers and TIAs	—	28.1	4 Tx & 4 Rx
MASC-38040	Quad 4 x 28 GBaud PAM4 (56 Gbit) Receiver CDR	—	56	4
MATA-37044	Four Channel 25G/28G CDR with Integrated TIA	—	28	4
MATA-37044	Four Channel 25G/28G CDR with Integrated TIA	—	28	4
MATA-37244	Four Channel 25G/28G CDR with Integrated TIA/Limiting Ampiifierlifier	—	28	4
MATA-37442	Quad 24G/26G TIA/LA with Integrated CDR	—	26	4
MATA-37444	Quad 24G/26G TIA/LA with Integrated CDR	—	26	4
MATA-37644	Multi-Rate 28G CDR with TIA/LA Integrated	—	28	1

LED/Laser Drivers for Display

Part Number	Description	Max Current (A)	Current Per Channel (A)	Channels (#)
M08980	LED Driver and PMIC and Stepper Motor Driver for Texas Instruments DLP® Displays	1.2	1.2	3
M09000	LED Driver and PMIC for Texas InstrumentsI DLP® Displays in QFN Package	1.2	1.2	3
M09001	LED Driver and PMIC for Texas Instruments DLP® Displays	1.2	1.2	3
M08889	High-Performance 2A RGB LED/Laser Driver with Integrated Buck-Boost Converter for LCD/LCoS/Texas Instruments DLP® Projection Displays	2	2	3
M08886	High-Performance RGB LED/Laser Driver with Despeckle Technology for LCD/LCoS/Texas Instruments DLP® Projection Displays	4	2	3
M08888	High-Performance 2A RGB LED/Laser Driver for LCD/LCoS/Texas Instruments DLP® Projection Displays	6	2	3
M08890	Three Channel 2A LED/Laser Driver for Panel Based Projectors	6	2	3
M08898	Four Channel 2A LED/Laser Driver for Panel Based Projectors	8	2	4

25G Fabry-Perot Lasers

Part Number	Description and Applications	Block Diagram Key*	Max Data Rate (Gbps)
MAOD-131F25IL1T0	1310 nm FP Laser, Die on Tape, 25 Gbps **Applications:** 5G Fronthaul LR-Lite	C	25

2.5G Distributed Feedback Lasers

Part Number	Description and Applications	Block Diagram Key*	Max Data Rate (Gbps)
131D-02E-VCT11-50x	Laser, 2.5G DFB NFF, Small Size, Chip on Tape, Die **Applications:** PON, Access, Optical Ethernet, SDH	—	2.5

10G/16G Distributed Feedback Lasers

Part Number	Description and Applications	Block Diagram Key*	Max Data Rate (Gbps)
MAOD-127D10I-LCT5	10G DFB Edge Emitting Laser for XGS-PON, 1270 nm **Applications:** XGS-PON	B	10
MAOD-1xxD10I-LCT2	10G DFB Edge-Emitting Lasers for 4G BiDi, 1310 nm **Applications:** Wireless 4G	Q	10
MAOD-1xxD10G-LCT2	10G DFB Edge-Emitting Lasers for 40GBASE-CWDM4 **Applications:** Data Center, 40G	Q	10
MAOD-1xxD16I-LCT2	16G DFB Edge-Emitting Lasers for 4G BiDi, 1310 nm **Applications:** Wireless 4G	Q	16

25G/50G Distributed Feedback Lasers

Part Number	Description and Applications	Block Diagram Key*	Max Data Rate (Gbps)
MAOD-1xxD50X-LCT8	50G DFB Edge-Emitting Lasers for 5G BiDi, CWDM6 **Applications:** Wireless 5G FH CWDM6	E	10
MAOD-1xxD25G-LCT2	Laser, 25G DFB, 1271, 1291, 1311, 1331, 1351, 1371, Die **Applications:** 5G Fronthaul CWDM6, 100G CWDM4	—	25
MAOD-xxxD25B-LCT0	Laser, 25G DFB, Die **Applications:** 5G Fronthaul MWDM12	—	25
MAOD-xxxD25B-LCT1	Laser, 25G DFB, Die **Applications:** 5G Fronthaul LWDM12	—	25
MAOD-xxxD25B-LCT7	Laser, 25G DFB, 1295, 1300, 1305, 1309, Chip on Tape, Die **Applications:** Data Center, 100GBASE-LR4	C, I	25

*Refer to Block Diagrams on pages 8 – 11

Detailed specifications can be found on our website at **macom.com** by typing the part number into the search box. All specifications are subject to change.

Photodiodes: APD

Part Number	Description and Applications	Block Diagram Key*
32445-01	10G APD, Backside Illuminated, Integrated Lens Option Standard and Enhanced Sensitivity, Die and Chip on Carrier Options **Applications:** 10G PON OLT/ONU	B
32447-02		
32445-02		
32448-02		
MARP-FSAPD10A	10G APD, Frontside Illuminated **Applications:** 10G PON OLT/ONU	B
MARP-FSAPD10B		
MARP-BA56-011LD	56G APD, Backside Illuminated, Integrated Lens, and Carrier Options **Applications:** 50G-PON, 100G/200G/400G Data Center	K
MARP-BA56-011LC1		
MARP-BA56-011LC2		
32391-03	25G APD, Backside Illuminated, Integrated Lens Option Die and Carrier Options **Applications:** 5G Fronthaul/Midhaul/Backhaul, 25G PONOLT/ONU, 200G/400G/800G Data Center	C, E, I
32411-03		
32411-04		
32392-03		
32412-03		
32412-04		
32411-07		
32411-08		
32444-02		B
32447-01		B
32448-01		B

Photodiodes: PIN

Part Number	Description and Applications	Block Diagram Key*
32437-01	56G PIN, Backside Illuminated, Die and Carrier Options **Applications:** 100G PAM4, 200G/400G/800G Data Center	E, K, M
32439-01		
32439-06		
MARP-FP28-011D-P	28G Frontside Illuminated PIN **Applications:** 5G Fronthaul, 100/200G Data Center, PAM4	D, E, I, J, K, M
MARP-FP28-024D-P		
MARP-FP56-011D-P	28G Frontside Illuminated PIN **Applications:** 100/400G Data Center, PAM4	E, K, M
MARP-FP56-014D-P		
MARP-FP56-024D-P		
MARP-FP56-018D-P		
MARP-FMP100-011D-P	100 Gbps Frontside Illuminated PIN Photodiode, usable at 850 nm **Applications:** Multimode Datacom, 400G SR4, PAM4	H
MARP-FMP100-012D-P		
MARP-FMP100-014D-P		—
MARP-BP112-011D-P	112 Gbaud/200 Gbps, Backside Illuminated PIN **Appllications:** PAM4, 200G, 800G and 1.2T Ethernet	—
MARP-BP112-021D-P		—

NETWORKING

OTN: Framer/Mapper/FEC

Part Number	Description	Block Diagram Key*	Max Data Rate (Gbps)	Channels (#)
S10123	10G OTN Framer/Mapper/FEC	—	11.3	1
S10124	10G OTN Framer/Mapper/FEC	—	11.3	1
S10126	10G OTN Framer/Mapper/FEC	—	11.3	1
S20101	PQ20T: 2 x 10G OTN Framer/Mapper/FEC	—	11.3	4
S40101	PQ40T: 4 x 10G/40G OTN Framer/Mapper/FEC	—	11.3	4
S50101	PQ50T: 6 x 10G/40G OTN Framer/Mapper/FEC	—	11.3	6

*Refer to Block Diagrams on pages 8 – 11

Detailed specifications can be found on our website at **macom.com** by typing the part number into the search box. All specifications are subject to change.

OTN: Framer/Mapper/FEC (continued)

Part Number	Description	Block Diagram Key*	Max Data Rate (Gbps)	Channels (#)
S60101	PQ60E: 6 x 10G/40G OTN Framer/Mapper/FEC	—	11.3	6
S12312	24 x 10G/40G/100G OTN & MACsec	O	11.2	24
S12412	24 x 10G/40G/100G OTN & MACsec	O	28	24
S12311	12 x 10G/40G/100G OTN & MACsec	O	11.2	12
S12411	12 x 10G/40G/100G OTN & MACsec	O	28	12

Ethernet MACsec PHY

Part Number	Description	Block Diagram Key*	Max Data Rate (Gbps)	Channels (#)
S12611	12 x 10G/40G/100G MACsec	N, O	27.96	12
S12612	12 x 10G/40G/100G OTN & MACSsec		27.96	24
S20020	Dual 100G/50G/40G/50G/25G/10G MACsec PHY		26.56	8

Ethernet PHY

Part Number	Description	Block Diagram Key*	Max Data Rate (Gbps)	Channels (#)
QT2025	10GE Serial to XAUI PHY for 10GBASE-LRM, LR, SR, 10GBASE-KR (SFP+ and Serial Backplane)	—	10.52	1
QT2225	Dual 10GE Serial to XAUI PHY for 10GBASE-LRM, LR, SR, 10GBASE-KR (SFP+ and Serial Backplane)	—	10.52	2
S28115	100 Gbps Multi-Link Gearbox (MLG) Supporting 10 x 10 GE	Q	28.0	10
MATP-05025	PRISM-50: 2 x 25G NRZ to 1 x 26 GBaud PAM4 PHY with Integrated Laser Driver	E	53.125	1
MATP-05026	PRISM-50: 2 x 24/26G NRZ to 1 x 26 GBaud PAM4 PHY with Integrated Laser Driver	E	53.125	1
MATP-10025	PRISM: 4 x 25G NRZ to 1 x 53 GBaud PAM4 PHY with FEC and Integrated Laser Driver	K	106.25	1

Embedded Processors

Part Number	Description	Clock Frequency (GHz)	Typical Power (W)
APM86391	Single Core Power™ Processor	600 MHz – 1	Single Core 4.09 W @ 1 GHz
APM86392	Dual Core Power™ Processor	600 MHz – 1	Dual Core 5 W @ 1 GHz
APM86491	Single Core Power™ Processor	800 MHz – 1	3.65 W @ 1 GHz
APM86290	Dual Core Power™ Processor	800 MHz – 1.2	Dual Core 7.06 W @ 1 GHz

PHOTORECEIVERS & PHOTODETECTORS

High Speed Optical Receiver Modules

Part Number	Description	Bandwidth (GHz)
11153-02	AT-10SFA/17LP/AC/MM/FC	8.9
MARP-AT12C-01	AT-12C/5MMLC/8FPC	9.5
11233-01	AT-10SFH/17LP/AC/MM/FC	10.5
11132-03	PT-15SFA/17LP/AC/LC	12.2
11012-05P	DG-15ir-FC	20
11069-02	P-18A/3K/Z50/FC	20
MARP-PT28G-01	PT-28G/10DGPPO/AC/FC	25 – 35
MARP-PT28E-02	PT-28E/V2/12XLMD/AC/FC	25 – 35
11204-01	DGM-32xr-FC	28
11204-05	DGM-32xr-DMD	28
11204-06	DGM-32xr-SC	28
11206-01	DG-32xr-FC	28
11112-04	P-40HPA/8V/Z50/AC/SC	40
11174-04	PT-40G/8LDGPPO/AC/LC/B1	40
11057-02	D-8ir-FC	50

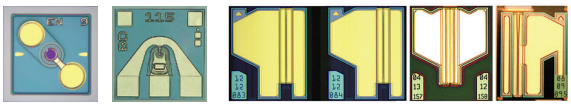
*Refer to Block Diagrams on pages 8 – 11
Detailed specifications can be found on our website at **macom.com** by typing the part number into the search box. All specifications are subject to change.

High Speed Optical Receiver Modules		
Part Number	Description	Bandwidth (GHz)
11088-05	P-50A/8V/Z50/DC/FC	50
11238-01	P-50C/8V/Z50/DC/FC	50
11243-01	PT-50A/8V/DC/FC	50
11241-01P	P-70A/8V/Z50/FC	70
MPR0020	Microwave Photonics Receiver	26
APRR530	Microwave Photonics Receiver	32
MARP-PT28E-03	PT-28E/V2/12XLMD/PK/AC/FC	25 – 35
MARP-PT28E-06	PT-28E/V2/8XLMD/PK/AC/FC	25 – 35
MARP-PT28E-06CB	Control Assembly, PT-28E/V2/8XLMD/PK/AC/FC	25 – 35
MARP-AT12C-03	AT-12C/5MMFP	9.5
MARP-PT12G-01	PT-12G/8SMA/FC	14
MARP-PT12G-02	PT-12G/PK/8SMA/FC	14
11174-05	PT-40G/8XLMD/AC/LC	40
11174-06	PT-40G/8XLMD/AC/FC/B1	40
11174-07	PT-40G/8XLMD/AC/FC	40
11212-01P	D-32xr-FC Instrument Photodetector	28
11215-01P	AT-2.5SFB/17LP/AC/MM/FC	1.7

OPTOELECTRONIC SOLUTIONS

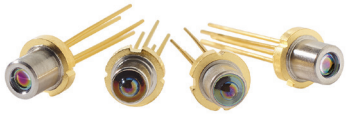
Photonics

Die



Detectors Lasers

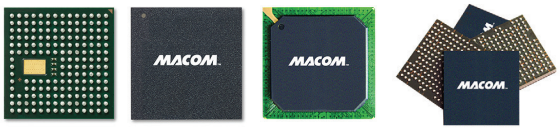
TO-CAN TO56, TO46



OTN Framer/Mapper/FEC

Ethernet MACsec PHY

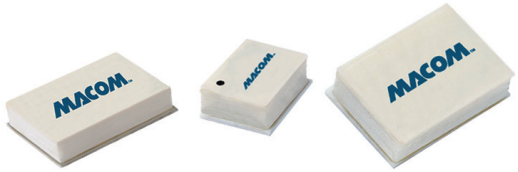
Ethernet PHY



Optoelectronics

4 x 4.5 mm CSP
3 mm QFN
4 mm QFN
5 mm QFN
10 mm 72-pin QFN

Surface Mount Devices (SMD)

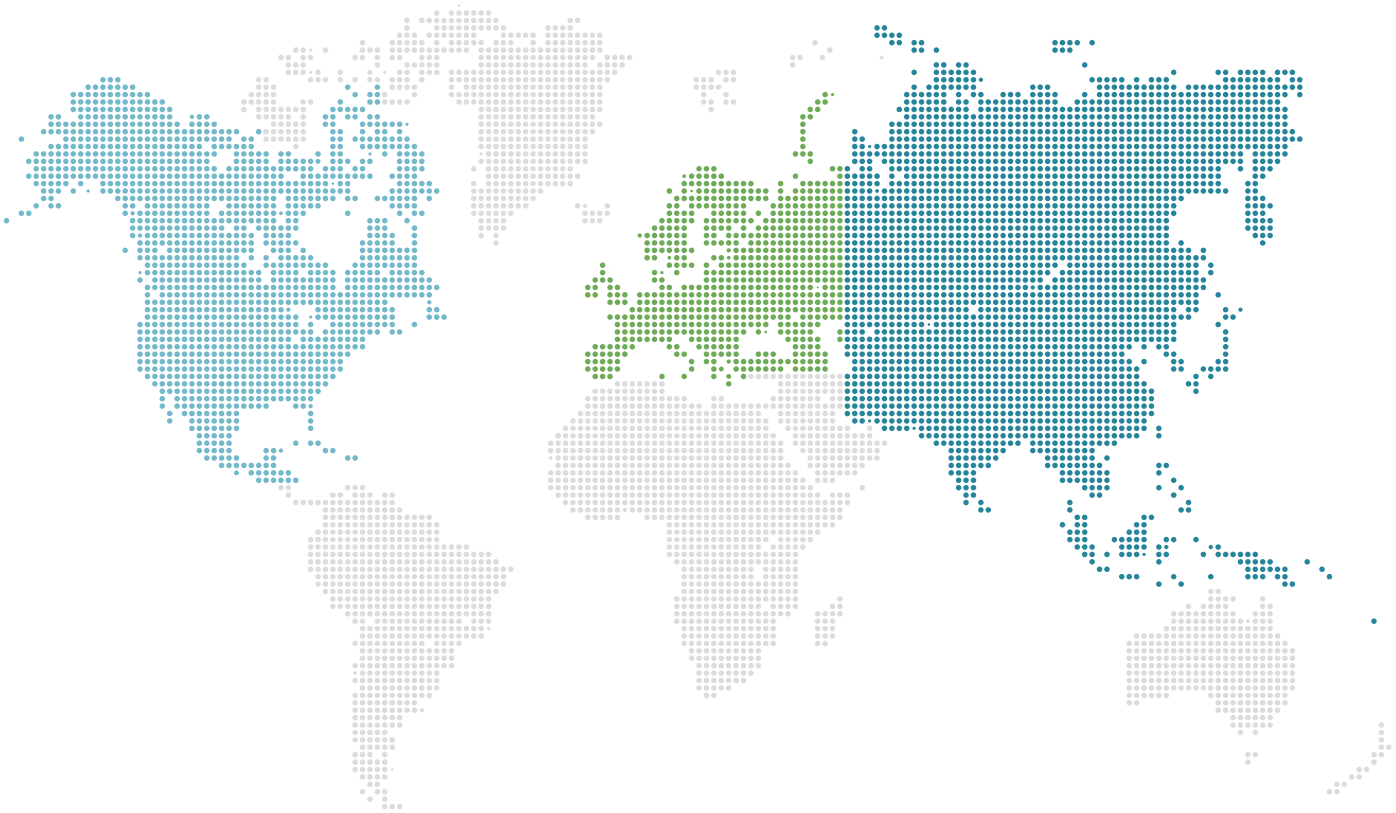


Modules

MACOM®

Partners from RF to Light

MACOM...A Global Partner



- **Americas**
  - Arizona
  - California
  - Massachusetts
  - Michigan
  - New Hampshire
  - New Jersey
  - New York
  - North Carolina
  - Oregon
  - Canada
- **Europe and Middle East**
  - Finland
  - France
  - Germany
  - Ireland
  - Israel
  - Italy
  - Sweden
  - United Kingdom
- **Asia Pacific**
  - China
  - India
  - Japan
  - Malaysia
  - South Korea
  - Taiwan
  - Thailand
  - Vietnam

MACOM®

CORPORATE HEADQUARTERS

MACOM Technology Solutions Inc.
100 Chelmsford Street, Lowell, MA 01851 USA
macom.com

Additional Product Information
can be found on our website at:
macom.com

Contact our worldwide sales offices, or authorized representatives to request samples, test boards, and application support.

All contacts are listed on our website at:
https://www.macom.com/support

Rev 020625