Product Selection Guide

Optoelectronics & Photonics

MACOM®

Partners from RF to Light

www.macom.com

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Photonics

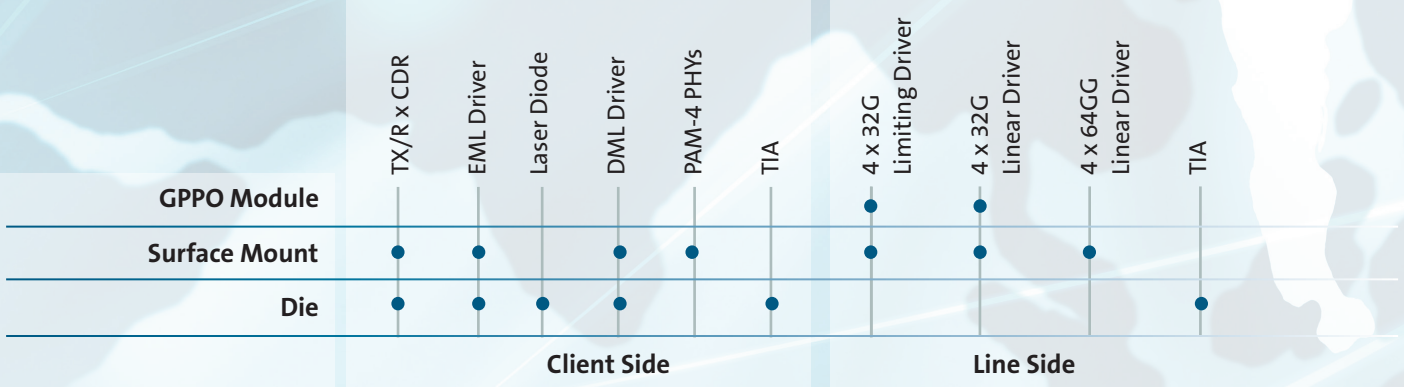
Network Connectivity

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 span from long haul core networks to Cloud Data Center to FTTx access, to wireless infrastructure.

The portfolio addresses the high performance 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, XG-PON, and NG-PON.



Enabling Bandwidth Density in Optical Networks

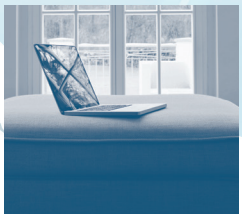
MACOM Products

- > 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

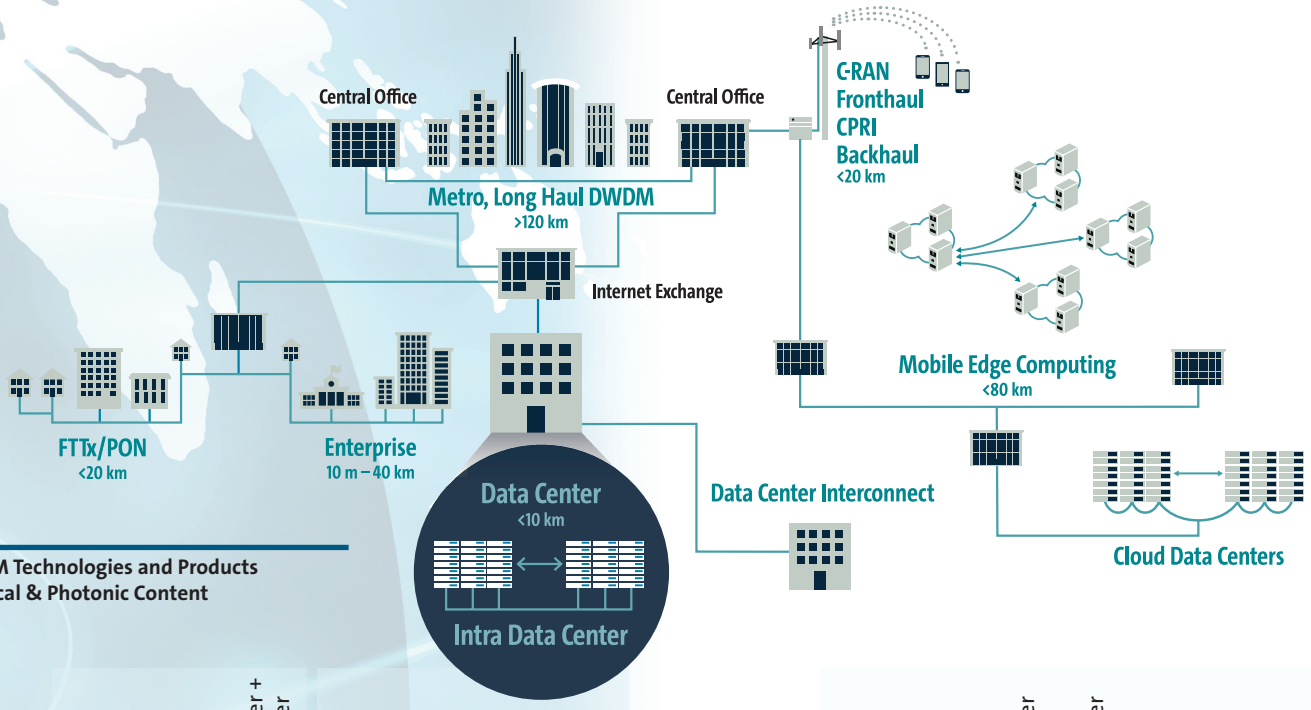
- > SiPh
- > InP
- > SAEFT™
- > CMOS
- > GaAs
- > SiGe

MACOM Markets

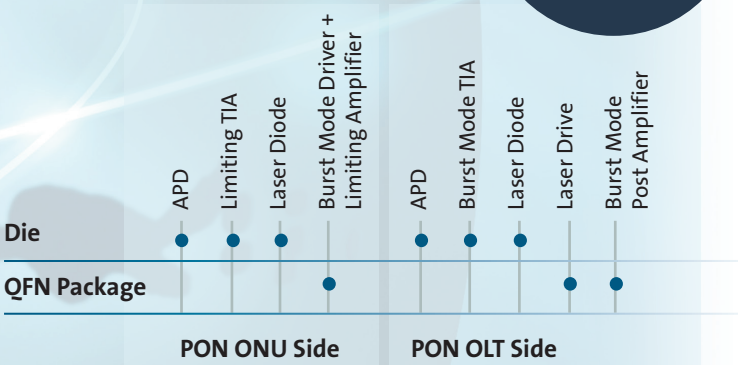


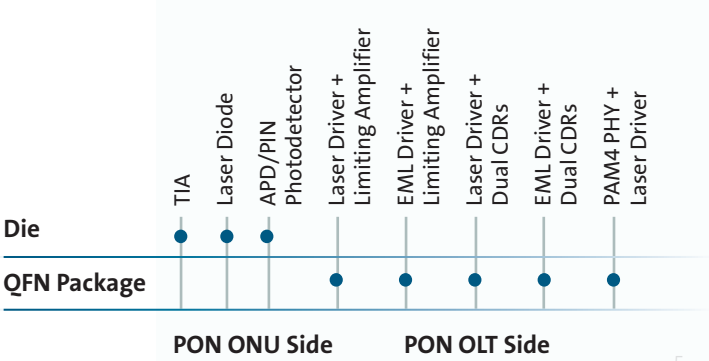


MACOM Technologies and Products in Optical & Photonic Content



MACOM Technologies and Products in Optical & Photonic Content





MACOM Optoelectronic & Photonic Technologies Creating 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 such as high speed modulator drivers, based on InP technology. *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.*

Self-Aligning Etched Facet (SAEFT™)

MACOM's lasers are attached to the silicon PIC using MACOM's patented Self-Aligning Etched Facet (SAEFT™) technology for automated precision assembly and alignment of lasers to silicon photonic waveguides. This self-aligning laser attach technology is enabled by MACOM's patented etched facet lasers and completely eliminates the costly manufacturing steps of actively aligning lasers to PLC multiplexers with Lenses, then fixing the Lenses in place with multiple epoxy steps, in the production of TOSA products. MACOM's L-PIC transmitters are shipped with lasers already attached to the silicon photonic circuit.

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 mmW markets, MACOM leads the way in applying SiGe BiCMOS technology to both commercial and military needs. We see SiGe as a high value, differentiating technology which we will continue to leverage in MACOM'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.*

Optoelectronics & Photonics

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

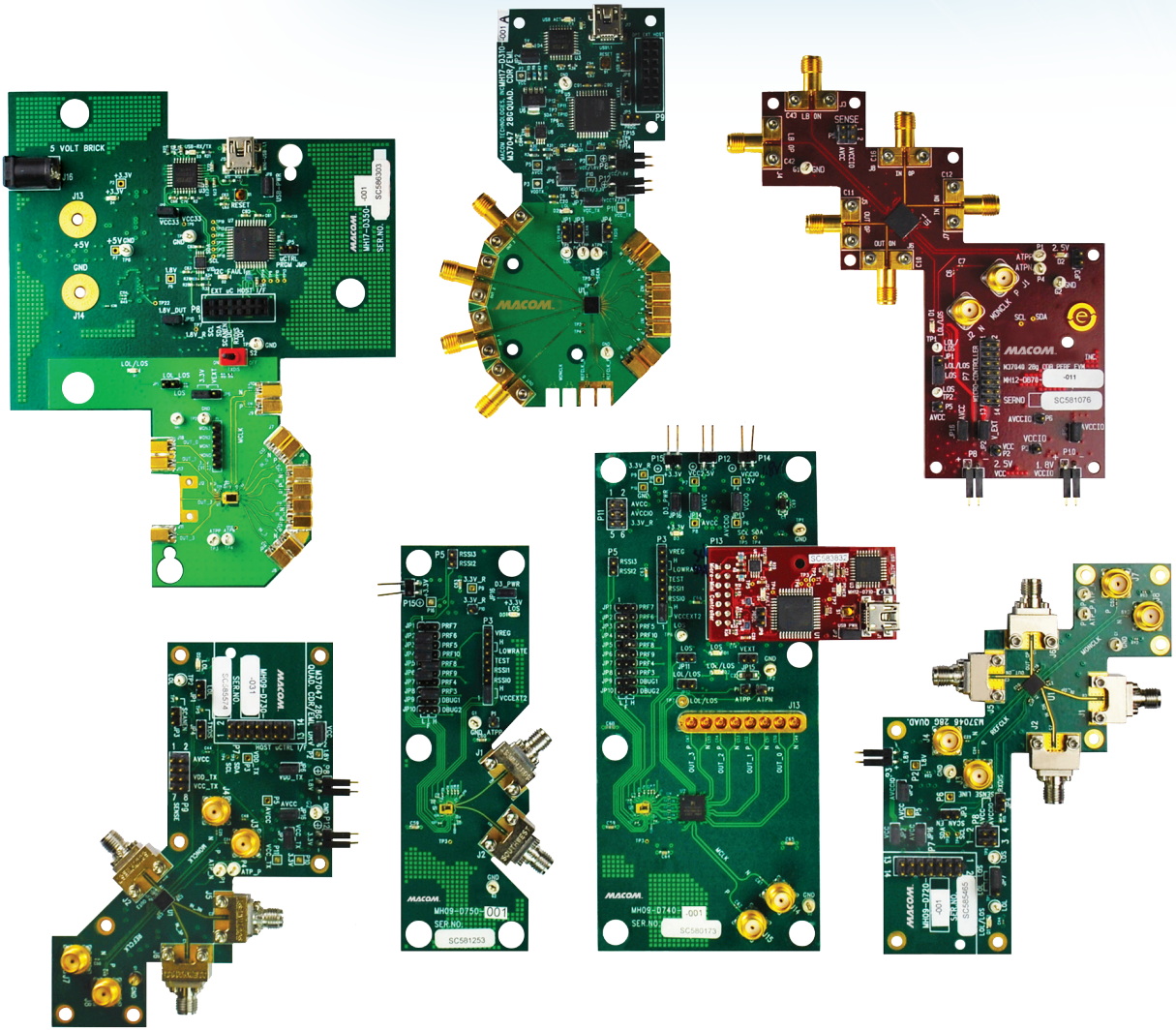
In addition to the support of our world-class application team, MACOM offers a number of custom reference design kits, Evaluation Modules (EVMs) and design guides which enhance the development of new products, reduce costs and optimize time-to-market.

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.

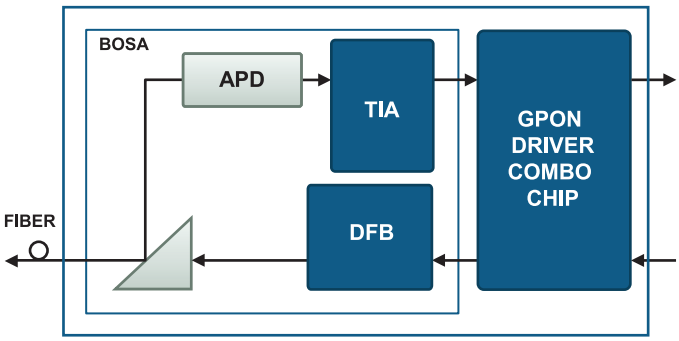
We package these offerings with our extensive GUI support as well. In addition to the EVM and the required software and user guide, schematics of circuit boards and modules, and supporting documents are provided.

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.

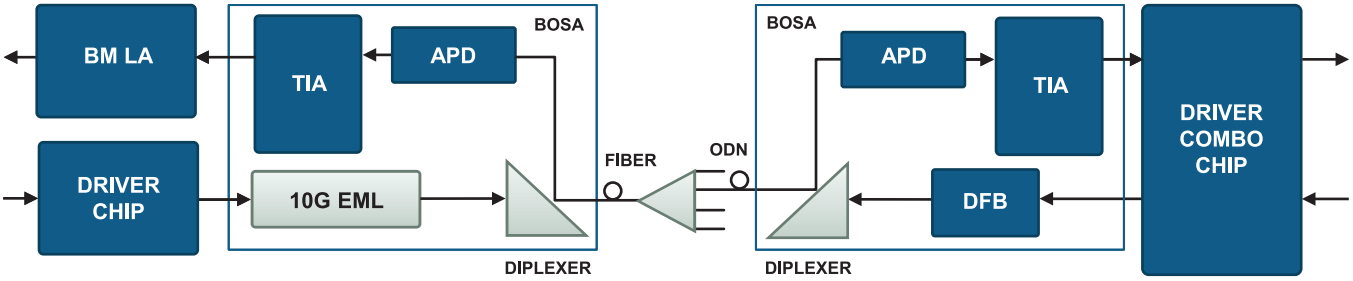
Contact the MACOM sales team to learn more.



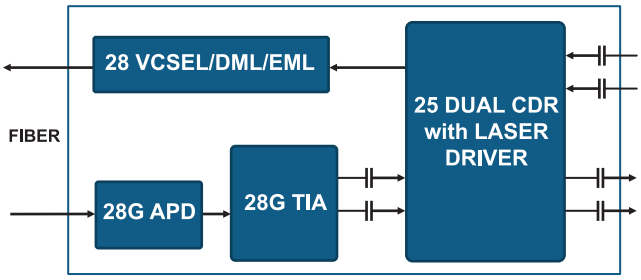
GPON ONU BOSA-on-Board A



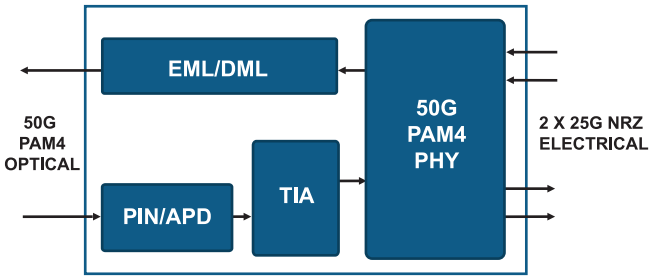
PON ONU/OLT B



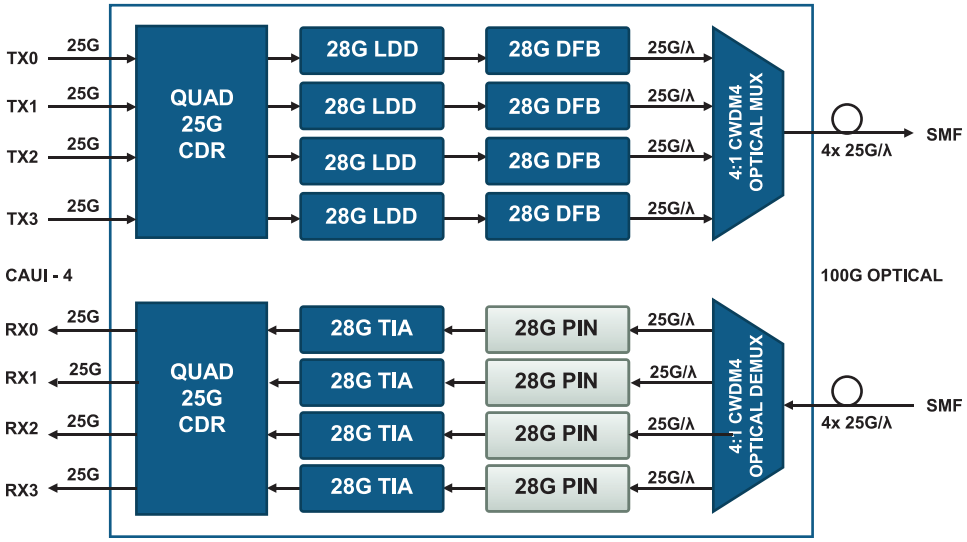
25G Chipset: SFP28 SR/LR/ER C



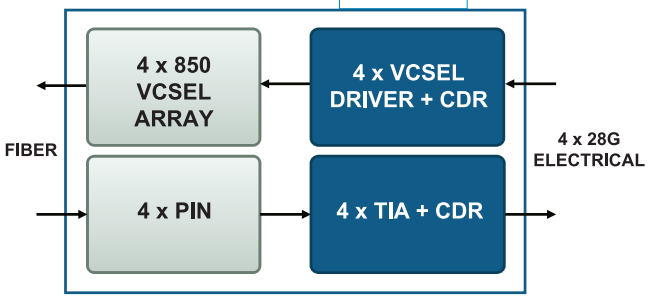
50 Gbps PAM4 FR/LR/ER E



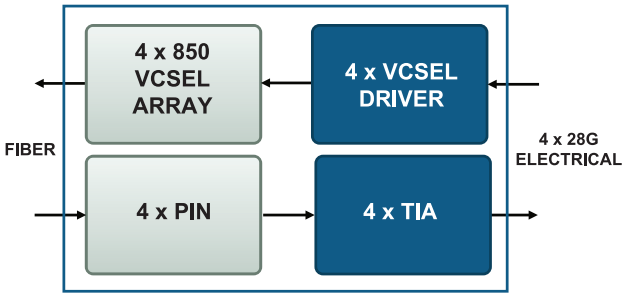
100G Chipset: CWDM4 Solution D



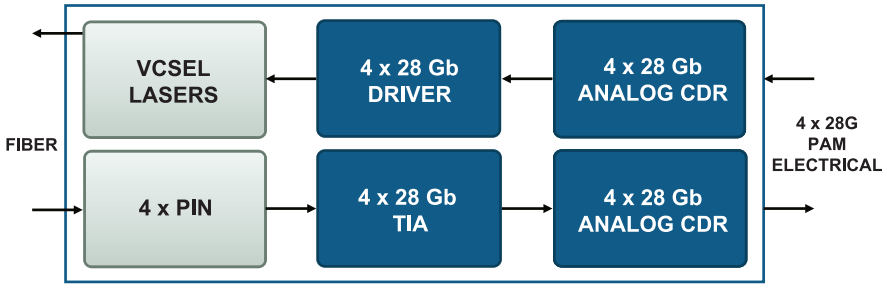
100G SR4 VCSEL Chipsets F



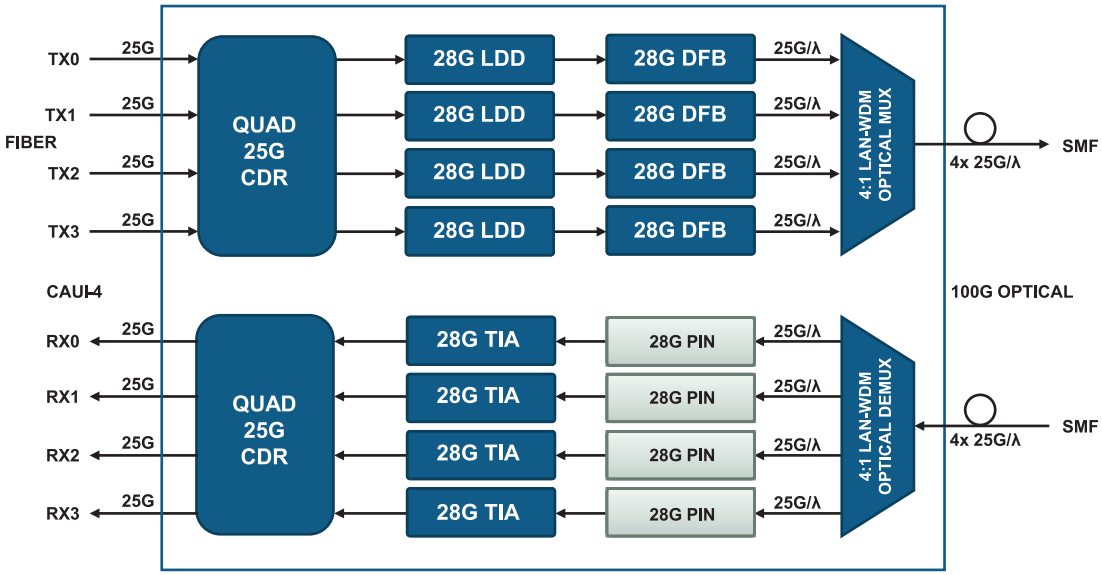
100G SR4 VCSEL Chipsets G



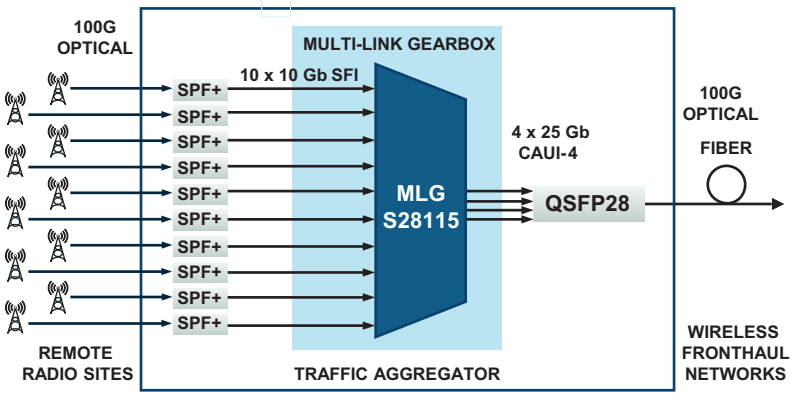
200/400G SR4 VCSEL Chipset H



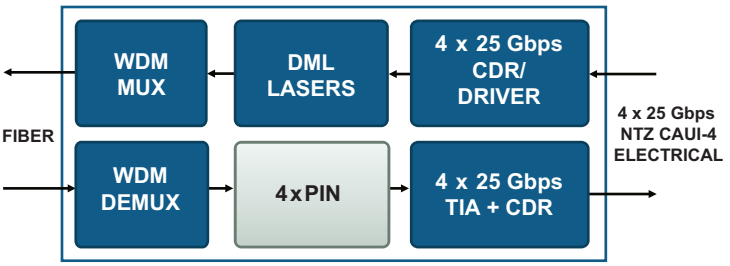
100G BASE-LR 4/ER 4 (QSFP28) I



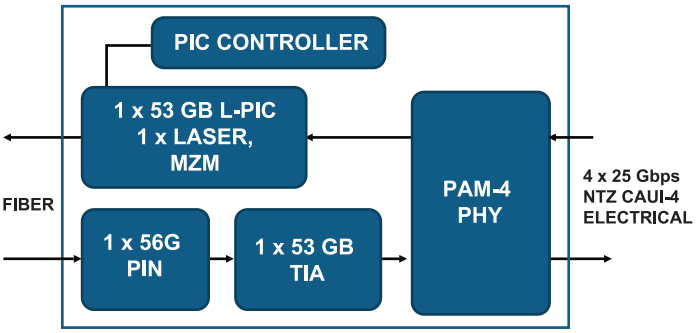
Wireless Fronthaul eCPRI Aggregation Solution Q



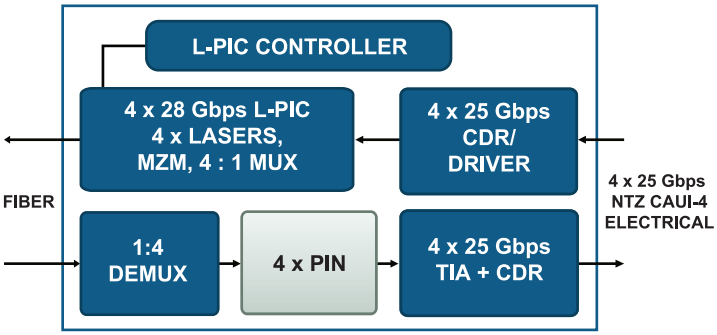
100G Gbps CWDM4 DML-Based Chipset J



100G Single Lambda K

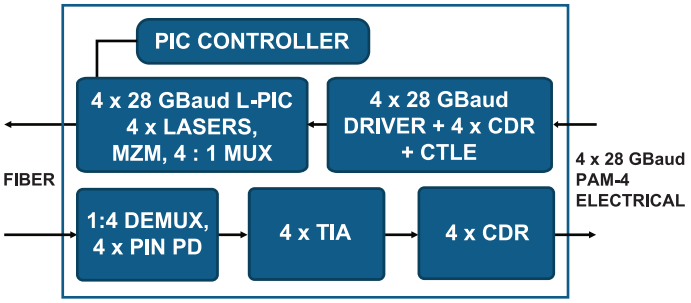


100G Gbps CWDM4 SiPh-Based Chipset J



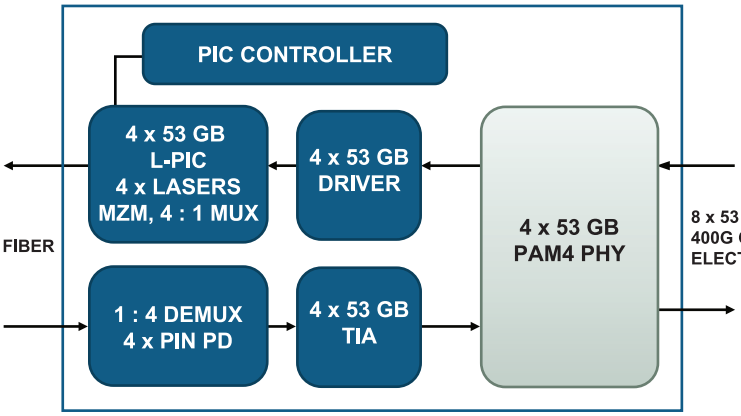
Optional Chip-on-Board (COB) Capable
Silicon Photonic 100G CWDM4 MSA compliant (four 25G data lanes)
Chipset provides automated PIC calibration and monitoring

200 Gbps SMF Chipset M

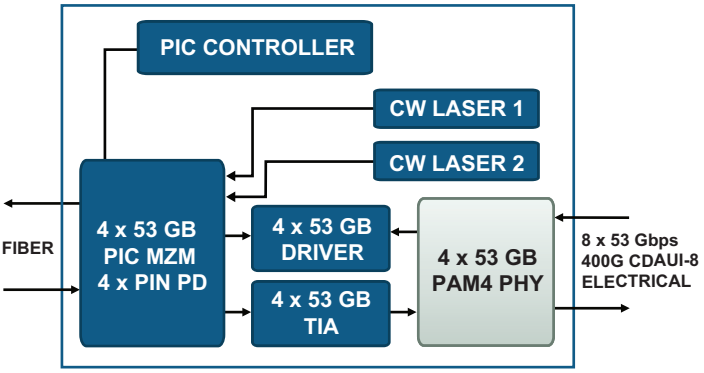


Silicon Photonic 100GBASE-DR/FR compliant (single 53 GBaud PAM4 data lane)
Chipset provides automated PIC calibration and monitoring and Build in Self Test (BiST)

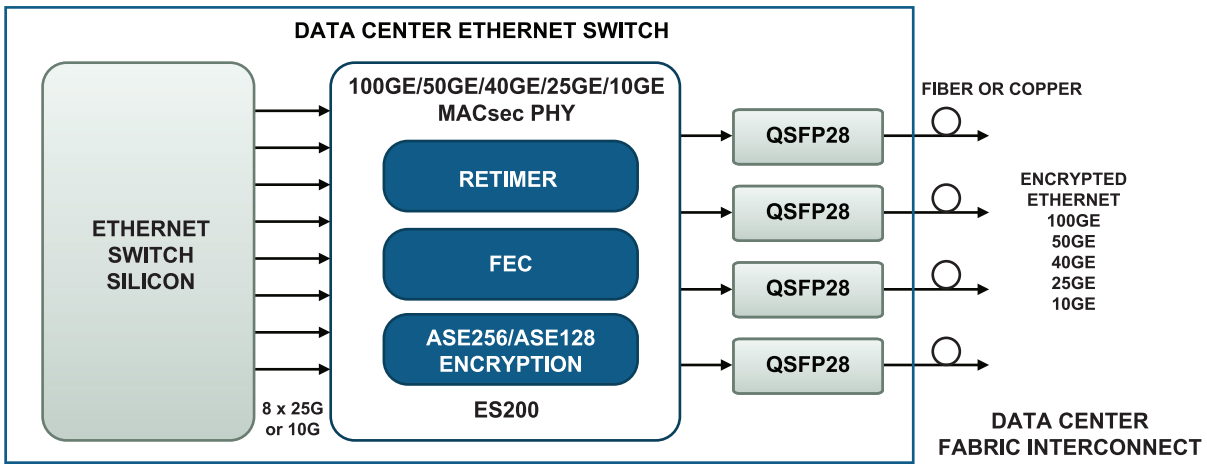
400G BASE-FR4/LR4 L1



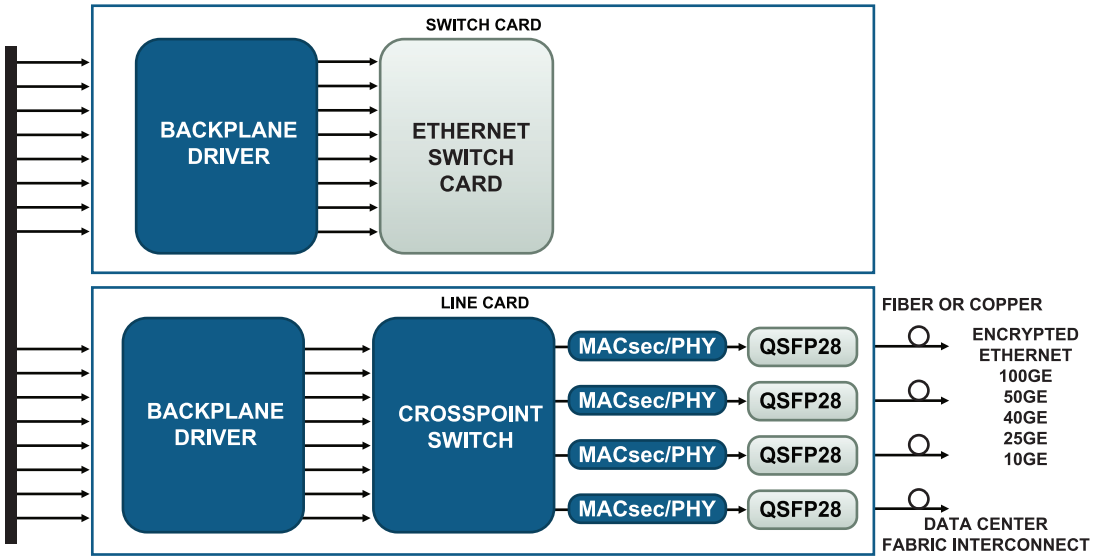
400G BASE-DR4 L2



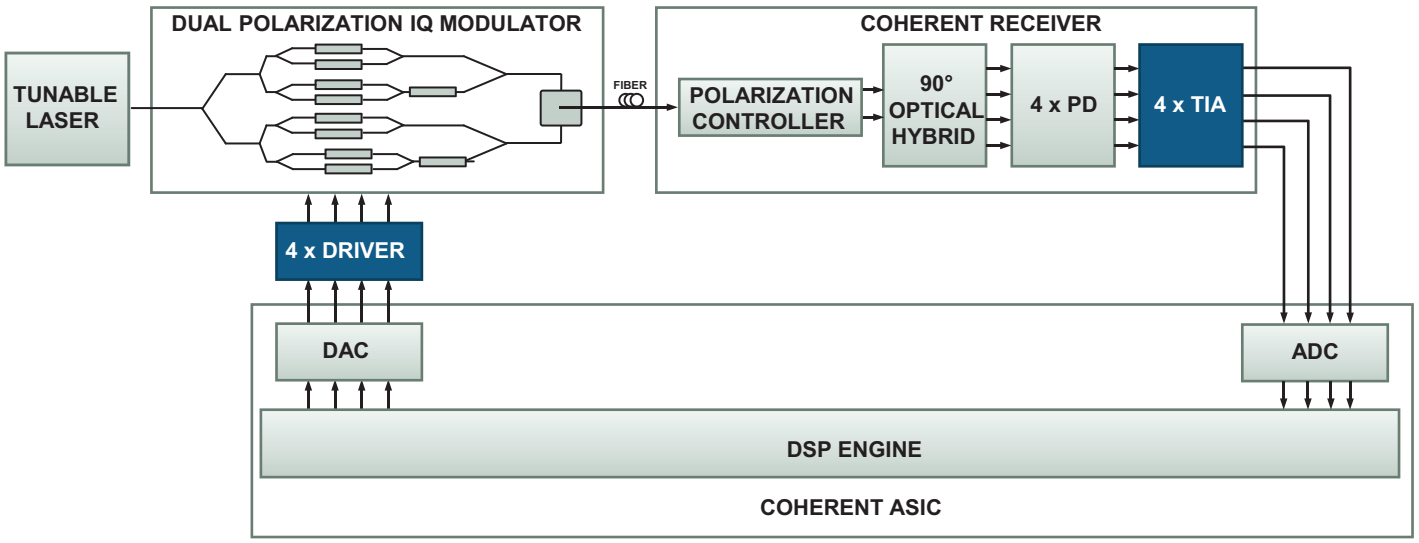
Data Center Switch Interconnect Security Solution N



Backplane Drivers O



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



Optoelectronics & Photonics

Lasers and Modulator Drivers

Part Number	Description	Block Diagram Key*	Max Data Rate (Gbps)	Supply Voltage (V)	Power Consumption (W)	Channels (#)	Max Output Mod Current (mA)	Max Output Bias Current (mA)	Package Type and Size (mm)
M02061	4.3 Gbps, 3.3 or 5 V Laser Driver	A	4.3	3.3, 5	0.11	1	100	100	QFN
M02077	Laser Driver/Limiting Amp	A	3.1	3.3	0.20	1	100	100	QFN 4 mm
M02090	2.5 Gbps, 3.3 V Burst Mode Laser Driver/ Limiting Amp	A	2.5	3.3	0.48	1	100	80	QFN 5 mm
M02095	1.25 Gbps, 3.3/5 V Laser Driver/Limiting Amp	A	1.25	3.3, 5	0.31	1	85	100	QFN 5 mm
M02096	4.3 Gbps, 3.3/5 V Laser Driver/Limiting Amp	A	4.3	3.3, 5	0.22	1	85	100	QFN 5 mm
M02097	500 Mbps, 3.3/5 V LED Driver/Limiting Amp	A	0.5	3.3, 5	0.12	1	120	10	QFN
M02098	Burst Mode Laser Driver/Limiting Amp	A	2.67	3.3	0.28	1	100	80	QFN 5 mm
M02099	Burst Mode Laser Driver/Limiting Amp + DDMI Controller and APD DC-DC Controller	A	3.1	3.3	0.22	1	100	100	QFN 4 mm
M02100	Burst Mode Laser Driver/Limiting Amp + DDMI Controller and APD DC-DC Controller & Amp, EEPROM	A	3.1	3.3	0.22	1	100	100	QFN 4 mm
M02172	11.3 Gbps EML Driver	—	11.3	3.3	0.28	1	2.5 (V)	180	QFN 5 mm
M02180	Burst Mode Laser Driver/Limiting Amp + R x CDR + DDMI Controller and APD DC-DC Controller & Amp; EEPROM	B	12.5	3.3	0.4	1	100	100	QFN 4.5 mm
M02193	12.5 Gbps Low Power Laser Driver and Limiting Amp with DC-DC Controller and EEPROM with Digital Diagnostics	—	12.5	3.3	0.31	1	100	100	QFN 4.5 mm
MALD-02101	3.1 Gbps Low Power Dual Closed Loop Burst Mode Laser Driver with Integrated Limiting Amp	A	3.1	3.3	0.23	1	100	100	QFN 4 mm
MALD-02103C	3.1 Gbps Low Power Dual Closed Loop Burst Mode Laser Driver with Integrated Limiting Amp	A	3.1	3.3	0.27	1	100	100	QFN 4 mm
MALD-37030	26 Gbps Multi-Rate Laser Driver with LIA/CDR	C	26.5	3.3	CONTACT MACOM	1	76	100	CONTACT MACOM
MALD-37031	28 Gbps Multi-Rate Laser Driver with LIA/CDR	C	28.1	3.3	CONTACT MACOM	1	76	100	CONTACT MACOM
MALD-37345B	Quad 28G VCSEL Driver with Input Equalizer	F, G	28	1.8, 3.3	0.5	4	12.8	15	Die 2 x 3 mm
MALD-02181	12.5G Burst Mode Laser and LIA+ DC-DC Controller, EEPROM and DDMI Controller	B	53	1.8, 3.3	0.44	4	12.8	15	QFN 4.5 mm
MALD-02182	12.5G Burst Mode Laser and LIA+ DC-DC Controller and DDMI Controller	B	12.5	3.3	0.33	1	100	100	QFN 4.5 mm
MALD-02183	12.5G Burst Mode Laser and LIA+ DC-DC Controller and DDMI Controller	B	12.5	3.3	0.33	1	100	100	QFN 4 mm
MALD-02194	12.5G Burst Mode Laser and LIA+ DDMI Controller	—	12.5	3.3	0.33	1	100	100	QFN 4.5 mm
MAOM-37032	Dual 28 Gbps CDR with Integrated EML Driver	C	26.5	1.8, 3.3	CONTACT MACOM	1		CONTACT MACOM	
MALD-37045	Four Channel 25G/28G CDR with Integrated VCSEL Driver	F	28	1.8, 3.3	0.7	4	—	—	Die 3 x 2 mm
MALD-37845	Four Channel Transmit and Four Channel Receive 25G/28G CDR with Integrated VCSEL Drivers and TIAs	F	28.1	1.8, 3.3	1.5	4 Tx & 4 Rx	—	—	Die 3.4 x 4 mm
MALD-38045	Quad 28 GBaud PAM4/NRZ VCSEL Driver with Integrated CDR	F	28	1.8, 3.3	1.1	4	—	—	Die 4 x 2 mm
MALD-38435	Quad 53G VCSEL Driver with Input Equalizer	H	28	1.8, 3.3	0.5	4	12.8	15	Die 2 x 3 mm
MALD-37145	Four Channel 25G/28G CDR with Integrated VCSEL Driver	F	28	1.8, 3.3	0.7	4	—	—	Die 3 x 2 mm
MALD-02184A	Tx CDR + Modulator Driver with Dual-Output Burst Mode Limiting Amplifier	B	11.3	3.3	0.66	1	—	—	QFN 5 mm

*Refer to Block Diagrams on pages 8 - 11

Lasers and Modulator Drivers *(continued)*

Part Number	Description	Block Diagram Key*	Max Data Rate (Gbps)	Supply Voltage (V)	Power Consumption (W)	Channels (#)	Max Output Mod Current (mA)	Max Output Bias Current (mA)	Package Type and Size (mm)
MALD-02186A	Tx CDR + Modulator Driver	B	11.3	3.3	0.66	1	—	—	QFN 5 mm

Lasers and Modulator Drivers: Client Side

Part Number	Description	Block Diagram Key*	Max Data Rate (Gbps)	Channels (#)	Min Input Voltage (mVpp)	Max Output Voltage (V)	Supply Voltage (V)	RF I/O Interface	Power Dissipation (W)	Package Type and Size (mm)
MAOM-003401	Quad Channel 28 Gbps Limiting EML Driver, Low Power	I	28	4	700	2	3	Differential/ Single-ended	0.2/ch	SMD 10 x 10 x 1.4
MAOM-002301- DIE	Single Channel 28 Gbps Direct, Modulated Laser Driver IC, Die	C, D, I	28	1	700˜1400	—	3	Differential/ Single-Ended	0.255	Die
MAOM-002304- DIE	Quad Channel 28 Gbps Direct Modulated Laser Driver IC, Die	D, I	28	4	700˜1400	—	3	Differential/ Single-Ended	0.255/ch	Die
MAOM-002311	Single Channel 28 Gbps Direct Modulated Laser Driver IC	D, E, I	28	1	800	—	3.3	Differential/ Differential	0.33/ch	LGA 4 x 4 x 1.33
MAOM-002326	Single Channel 28 Gbps Direct Modulated Laser Driver IC	D, E, I	28	1	800	—	3.3	Differential/ Differential	0.33/ch	LGA 4 x 4 x 1.33
MAOM-003119	Single Channel 28 GBaud Linear EML Driver		28	1	500	2	3.3	Differential/ Single-Ended	0.46/ch	SMD 4 x 6 x 0.98
MAOM-005321	Single Channel 56 GBaud Linear EML Driver		53/56	1	1000 (max)	1.8	3	Differential/ Single-Ended	0.4/ch	LGA 3 x 5 x 1.1
MAOM-005324	Single Channel 56 GBaud Linear DML/SiPh Driver	—	53/56	1	1000 (max)	3.6	3	Differential/ Differential	0.4/ch	LGA 3 x 5 x 1.1
MAOM-005411	Quad Channel 56 GBaud Linear EML Driver	L1, L2	53/56	4	1000 (max)	1.8	3	Differential/ Single-Ended	0.3/ch	SMD 7 x 7.2 x 1.3
MAOM-005421	Quad Channel 56 GBaud Linear EML Driver	L1, L2	53/56	4	1000 (max)	1.8	3.	Differential/ Single-Ended	0.4/ch	SMD 7 x 7.2 x 0.73
MAOM-005424	Quad Channel 56 GBaud Linear DML/SiPh Driver	L1, L2	53/56	4	1000 (max)	3.6	3	Differential/ Differential	0.4/ch	SMD 5 x 7 x 1.11

Lasers and Modulator Drivers: Metro/Line Side

Part Number	Description	Block Diagram Key*	Max Baud Rate (Baud)	Channels (#)	Min Input Voltage (mVpp)	Max Output Voltage (V)	Supply Voltage (V)	RF I/O(V) Interface	Power Dissipation (W)	Package Type and Size (mm)
MAOM-002105	32 GBaud Limiting MZ Modulator Driver	P	32	1	350	8	6	Single-ended/ Single-ended	1.8	SMD 14.4 x 7 x 2.3
MAOM-003405	Quad Channel 32 GBaud Limiting MZ Modulator Driver	P	32	4	300/600 (max)	7	6.5	Differential/ Single-ended	0.95/ch @5 Vout	SMD 13 x 19 x 2.46
MAOM-003407	Quad Channel 32 GBaud Limiting MZ Modulator Driver	P	32	4	300 (max)	6	6.5	Differential/ Single-ended	1.6/ch	SMD 13 x 19 x 2.46
MAOM-03404A	4 x 32 GBaud Differential Limiting MZ Modulator Driver	P	32	4	300 (max)	5	3.3/4.5	Differential/ Differential	0.75/ch	SMD 9.1 x 14 x 2.29
MAOM-03409B	32 GBaud Linear Differential Modulator Driver IC	P	32	4	300 (max)	4	3.6/4.5	Differential/ Differential	0.75/ch	SMD 9.1 x 14 x 2.29
MAOM-03409D	32 GBaud Linear Differential Modulator Driver IC	P	32	4	700 (max)	4	3.6/4.5	Differential/ Single-ended	0.75/ch	SMD 9.1 x 14 x 2.29
MAOM-003417	Quad Channel 32 GBaud Linear Modulator Driver	P	32	4	700 (max)	4.5	3.3/5	Differential/ Single-ended	1.13/ch	SMD 9.1 x 14 x 2.29
MAOM-03417B	Quad Channel 32 GBaud Linear Modulator Driver	P	32	4	500 (max)	4.5	3.3/5	Differential/ Single-ended	1.15/ch	SMD 9.1 x 14 x 2.85
MAOM-03417L	Quad Channel Low Power Linear Modulator Driver	P	32	4	700 (max)	3.3	3.3	Differential/ Single-ended	0.6/ch	SMD 9.1 x 14 x 2.29
MAOM-003427	Quad Channel 46 GBaud Linear Modulator Driver	P	46	4	700 (max)	5	3.3/6	Differential/ Single-ended	1.8/ch	SMD 13 x 19 x 2.46
MAOM-006416	Quad Channel 64 GBaud MZ Modulator Driver	P	64	4	1100 (max)	4.5	3.3/5	Differential/ Single-ended	1.1/ch	SMD 14 x 9.1 x 2.85
MAOM-006418	Quad Channel 64 GBaud Linear Modulator Driver	P	64	4	1100 (max)	4.5	3.3/5	Differential/ Single-ended	1.1/ch	SMD 14 x 9.1 x 2.85

*Refer to Block Diagrams on pages 8 - 11

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Lasers and Modulator Drivers: Metro/Line Side *(continued)*

Part Number	Description	Block Diagram Key*	Max Baud Rate (Baud)	Channels (#)	Min Input Voltage (mVpp)	Max Output Voltage (V)	Supply Voltage (V)	RF I/O(V) Interface	Power Dissipation (W)	Package Type and Size (mm)
MAOM-006408	Quad Channel 64 GBaud Linear Modulator Driver Die	P	64	4	800 (max)	3	3.3	Differential/ Differential	0.4/ch	Die
MAOM-006409	Quad Channel 64 GBaud Linear Open Collector Modulator Driver Die	P	64	4	800 (max)	4	3.3	Differential/ Differential	0.65/ch	Die
MAOM-009408	Quad Channel 96 GBaud Linear Open Collector Modulator Driver Die	P	96	4	800 (max)	3	3.3	Differential/ Differential	0.54/ch	Die
MAOM-009409	Quad Channel 96 GBaud Linear Modulator Driver Die	P	96	4	800 (max)	4	3.3	Differential/ Differential	1.0/ch	Die

Transimpedance Amplifiers (TIAs): Coherent

Part Number	Description	Block Diagram Key*	Max Baud Rate (Baud)	Differential Transimpedance Gain (kOhms)	Small Signal Bandwidth (GHz)	Input Overload Current (mA)	Input Referred Noise (IRN, RMS nA) (nA)	Output Swing Voltage (mV)	Power Dissipation (W)	Supply Voltage (V)
MATA-006806	GBaud Dual Channel Linear TIA for 400G and 600G Coherent Receivers	P	64	6	45	3	16	700	0.315/ch	3.3
MATA-006406	GBaud Quad Channel Linear TIA for 400G and 600G Coherent Receivers	P	64	6	45	3	16	700	0.33/ch	3.3
MATA-009806	GBaud Dual Channel Linear TIA for 400G, 600G, and 800G Coherent Receivers	P	96	6	60	3	18	700	0.400/ch	3.3
MATA-009406	GBaud Quad Channel Linear TIA for 400G, 600G, and 800G Coherent Receivers	P	96	6	60	4	18	700	0.400/ch	3.3

Transimpedance Amplifiers (TIAs): Client Side

Part Number	Description	Block Diagram Key*	Max Data Rate (Gbps)	Differential Transimpedance Gain (kOhms)	Small Signal Bandwidth (GHz)	Input Overload Current (mA)	Input Referred Noise (IRN, RMS nA) (nA)	Output Swing Voltage (mV)	Power Consumption (W)	Supply Voltage (V)
M02006	155 Mbps AGC Prep-Amplifier	—	0.2	260	0.1	2.2	8	300	0.15	5
M02007	Low-Noise Transimpedance Amplifier with AGC	—	0.2	62	0.14	2.8	8	300	0.07	3.3
M02015	2.5 Gbps AGC Pre-Amplifier	—	2.5	9	1.4	4	290	140	0.096	3.3
M02016	1.25 Gbps AGC Pre-Amplifier	—	1.3	24	1 4	130	140	0.096	3.3	
M02020	4 Gbps CMOS Transimpedance Amplifier with AGC	—	4.3	3.6	3.4	4	550	140	0.145	3.3
M02025	100 Mbps to 3.125 Gbps Multi-Rate CMOS TIA with AGC	—	3.2	20	1.45	4	120	50	0.14	3.3
M02035	Burst Mode OLT TIA	B	2.5	3.6	1.7	1.5	250	—	—	—
M02036	2.5 Gbps Burst Mode G PON OLT TIA	B	1.3	3.8	0.8	2.5	170	—	—	—
M02038	1.3 Gbps Burst Mode CMOS TIA B 1.2	B	1.2	8.5	0.85	4	350	275	0.082	3.3
M03002	28 Gbps Transimpedance Amplifier	C, D, G, I	28	2.9	22	3.5		CONTACT MACOM		
MATA-02135	8.5/10/11.3 Gbps Limiting TIA	A, B	1	1.3	3.4	8.2	3	850	—	—
MATA-02238	10G EPON Burst Mode TIA with Rate Select	B	1	0.3	6	9	1.6	1000	—	—
MATA-02239	1.25G/2.5G/10.3 Gbps Burst Mode TIA with Rate Select	B	1	0.3	6	9	1.6	750	275	0.10
MATA-03003	28 Gbps Quad Channel	C, D, G, I	28	3.8	21	4			CONTACT MACOM	
MATA-03013	28 Gbps Quad Channel Transimpedance Amplifier	C, D, G, I	28	3.8	21	4	1400	—	—	—
MATA-03006	28G TIA with APD	I	28	3.8	21	4			CONTACT MACOM	
MATA-03106	28G TIA with APD	I	28	3.8	21	4	1400		CONTACT MACOM	

*Refer to Block Diagrams on pages 8 - 11

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MACOM

Power/Noise Optimized Family

Part Number	Description	Block Diagram Key*	Channels (#)	Wirebond or Flip Chip (um)	Pad Spacing	Pin or APD	Max Available Bandwidth (*) (nA)	Max Gain (dB/Ohms)	Noise at Gain (uA RMS)	Supply Current (mA @ 2.9V 3.3V)
MATA-03809	Power/Noise Optimized	E, K	1	Wirebond	N/A	PIN & APD	~19	~4500	1.5	71
MATA-05819	Power/Noise Optimized	E, K	1	Wirebond	N/A	PIN & APD	~35	~4500	1.5	71
MATA-38019	Bandwidth/Gain Optimized	E, K	1	Wirebond	750	PIN	~19	~4500	1.59	265
MATA-03819	Power/Noise Optimized	H, M	4	Wirebond	750	PIN	~30	~4500	1.5	265
MATA-03820	Power/Noise Optimized	H, M	4	Flip Chip	750	PIN	~30	~4500	1.5	265
MATA-03919	Power/Noise Optimized	H, M	4	Wirebond	750	APD	~30	~4500	1.5	265
MATA-03920	Power/Noise Optimized	H, M	4	Flip Chip	750	APD	~30	~4500	1.5	265
MATA-38134	Power/Noise Optimized	H, M	4	Wirebond	500	PIN	~30	~4500	1.5	265
MATA-38434	Power/Noise Optimized	H	4	Wirebond	250	PIN	~30	~4500	1.5	265

Bandwidth/Gain Optimized Family

MATA-05817	Bandwidth/Gain Optimized	K	1	Wirebond	N/A	PIN & APD	~45	~5400	1.59	73
MATA-05827	Bandwidth/Gain Optimized	K	1	Flip Chip	N/A	PIN & APD	~45	~5400	1.59	73
MATA-03821	Bandwidth/Gain Optimized	H, M	4	Wirebond	750	PIN	~40	~5400	1.59	274
MATA-03822	Bandwidth/Gain Optimized	H, M	4	Flip Chip	750	PIN	~40	~5400	1.59	274

Clock & Data Recovery

Part Number	Description	Block Diagram Key*	Max Data Rate (Gbps)	Supply Voltage	Power Consumption (W)	Channels (#)	Package Type and Size
M21012	42 Mbps to 3.2 Gbps Quad Multi-Rate CDR	—	3.2	1.8 – 3.3	0.47	4 x 4	QFN 10 mm 72-pin
M21050	High-Performance Duplex Quad (octal) Multi-Rate Clock and Data Recovery	—	3.2	1.8 - 2.5	1	8 x 8	QFN 10 mm 72-pin
M37046	Quad 24G/26G TIA/LA with Integrated CDR	D, I	28	1.8	0.4	4	CSP 4 x 4.5 mm
M37047	Four Channel 25G/28G CDR with Integrated EML Driver	F	28	1.8, 3.3	1.2	4	CSP 4 x 4.5 mm
M37049	Four Channel 25G/28G CDR with Integrated Input Equalizer	F	28	1.8	0.4	4	CSP 4 x 4.5 mm
MALD-37059	Four Channel 25G/28G CDR with Integrated DML Driver	D, F, I	28	1.8, 3.3	1.8	4	BGA 5.5 x 6.5 mm
MALD-37045	Four Channel 25G/28G CDR with Integrated VCSEL Driver	D, F, I	28	1.8, 3.3	0.7	—	Die 3 x 2 mm
MALD-37845	Four Channel Transmit and Four Channel Receive 25G/28G CDR with Integrated VCSEL Drivers and TIAs	—	28.1	1.8, 3.3	1.5	4 Tx & 4 Rx	Die 3.4 x 4 mm
MALD-38045	Quad 28 GBaud PAM4/NRZ VCSEL Driver with Integrated CDR	F	28	1.8, 3.3	1.1	4	Die 4 x 2 mm
MALD-38435	Quad 53G VCSEL Driver with Input Equalizer	D, F, I	28	1.8, 3.3	0.5	4	Die 2 x 3 mm
MATA-37145	Four Channel 25G/28G CDR with Integrated VCSEL Driver	D, F, I	28	—	0.7	4	Die 2 x 3 mm
MALD-37445	Quad 25G/26G CDR/VCSEL Driver with Input Equalizer	F, G	28	1.8, 3.3	0.7	4	Die 3 x 2 mm
MALD-37645	Multi-Rate 28G VCSEL Driver/CDR with Input Equalizer	F, G	28	1.8	0.26	1	Die 2.3 x 1.4 mm
MAOM-37051A	Quad 25G/28G CDR with Integrated Equalization and EML Driver	F, G	28	1.8	1.1	4	SMT 7 x 11 mm
MAOM-037057	Quad 25G/28G CDR with Integrated Equalization and Amplifier, EML Driver	I	28	1.8	1.1	4	SMT 5.6 x 9.6 mm
MAOM-37447	Quad 25G/28G CDR with Adaptive and EML Driver Equalization	—	28	1.8	1.2	4	CSP 4 x 4.5 mm
MAOM-38053	Quad 4 x 28 GBaud PAM4 (56 Gbit) Transmit CDR	—	56	1.8	0.4	4	QFN 5.2 mm
MASC-38040	Quad 4 x 28 GBaud PAM4 (56 Gbit) Receiver CDR	—	56	1.8	0.4	4	QFN 5.2 mm
MASC-37028	Multi-Rate, Dual 28 Gbps CDR with Integrated Laser Driver	—	26.5	1.8, 3.3	—	2	LGA 5 mm
MASC-37029	Multi-Rate, Dual 28 Gbps CDR with Integrated Laser Driver	—	28.1	1.8 , 3.3	—	2	LGA 5 mm
MASC-37048	Four Channel 25G/28G CDR	—	28	1.8	0.4	4	CSP 4 x 4.5 mm

Clock & Data Recovery

Part Number	Description	Max Data Rate (Gbps)	Supply Voltage (V)	Power Consumption (W)	Channels (#)	Package Type and Size
MATA-37044	Four Channel 25G/28G CDR with Integrated TIA	28	1.8, 3.3	—	4	Die 3 x 2 mm

*Refer to Block Diagrams on pages 8 - 11

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Clock & Data Recovery *(continued)*

Part Number	Description	Max Data Rate (Gbps)	Supply Voltage (V)	Power Consumption (W)	Channels (#)	Package Type and Size
MATA-37144	Four Channel 25G/28G CDR with Integrated TIA	28	—	—	4	Die 2 x 3 mm
MATA-37244	Four Channel 25G/28G CDR with Integrated TIA/ Limiting Amplifier	28	1.8, 3.3	—	4	Die 2 x 3 mm
MATA-37442	Quad 24G/26G TIA/LA with Integrated CDR	26	1.8, 3.3	—	4	Die 3 x 2 mm
MATA-37444	Quad 24G/26G TIA/LA with Integrated CDR	26	1.8, 3.3	—	4	Die 3 x 2 mm
MATA-37644	Multi-Rate 28G CDR with TIA/LA Integrated	28	1.8	0.26	1	Die 2.3 x 1.4 mm
MATA-38044	Quad 28 GBaud Linear TIA with Integrated CDR	28	1.8, 3.3	1.5	4	Die 4 x 2 mm

Optical Post Amplifiers

Part Number	Description	Block Diagram Key*	Max Data Rate (Gbps)	Supply Voltage (V)	Power Consumption (W)	Channels (#)	Input Sensitivity (mVpp)(mV)	Output Swing Voltage (V)	Package Type and Size
M02142	11.3 Gbps Limiting Amplifier	A	11.3	3.3	0.191	1	3	680	3 mm QFN

LED/Laser Drivers for Display

Part Number	Description	Current Per Channel (A)	Max Current (A)	Channels (#)	Programmable Internal PWM Generator (Y/N)	Input Integrated PMIC (Y/N)	Automatic Power Control (Y/N)	Electronic Laser Despeckle (Y/N)
M08886	High-Performance RGB LED/Laser Driver with Despeckle Technology for LCD/LCoS/TI DLP® Projection Displays	2A	4A	3	Yes	No	Yes	Yes
M08888	High-Performance 2A RGB LED/Laser Driver for LCD/LCoS/TI DLP® Projection Displays	2A	6A	3	Yes	No	Yes	No
M08889	High-Performance 2A RGB LED/Laser Driver with Integrated Buck-Boost Converter for LCD/LCoS/TI DLP® Projection Displays	2A	2A	3	Yes	Yes	Yes	No
M08890	3-Channel 2A LED/Laser Driver for Panel Based Projectors	2A	6A	3	Yes	No	No	No
M08898	4-Channel 2A LED/Laser Driver for Panel Based Projectors	2A	8A	4	Yes	No	No	No
M08980	LED Driver and PMIC and Stepper Motor Driver for TI DLP® Displays	1.2A	1.2A	3	No	Yes	No	No
M09000	LED Driver and PMIC for TI DLP® Displays in QFN Package	1.2A	1.2A	3	No	Yes	No	No
M09001	LED Driver and PMIC for TI DLP® Displays	1.2A	1.2A	3	No	Yes	No	No

Photonic Devices

10G Fabry-Perot Lasers

Part Number	Description	Block Diagram Key*	Max Data Rate (Gbps)	Wavelength (nm)	Temp Options (°C)	Package Type and Size (um)
131F-10I-LCT11-S	10G Hi-BW 1310 nm FP LD Applications: Optical Ethernet, Fibre Channel	A	10	1310	-40 to 85	Die 250 x 250 x 100
131F-10I-LT5K1C-S	10G Hi-BW 1310 nm FP TO-Can Applications: Telecom, Optical Ethernet, Wireless	A	10	1310	-40 to 85	TO-Can TO-56

25G Fabry-Perot Lasers

Part Number	Description	Block Diagram Key*	Max Data Rate (Gbps)	Wavelength (nm)	Temp Options (°C)	Package Type and Size (um)
MAOD-131F25IL1T0	1310 nm FP Laser, Die on Tape, 25 Gbps Applications: 5G Fronthaul LR-Lite	C	25	1310	-40 to 95	Die 250 x 250 x 100
MAOD-131F25I-T5R50	1310 nm FP Laser, TO-Can, 25 Gbps Applications: 5G Fronthaul LR-Lite	C	25	1310	-40 to 85	TO-Can TO-56

*Refer to Block Diagrams on pages 8 - 11

Photonic Devices

25G Distributed Feedback Lasers

Part Number	Description	Block Diagram Key*	Max Data Rate (Gbps)	Wavelength (nm)	Temp Options (°C)	Package Type and Size (um)
127D-02I-VT5AB	1270 nm Edge Emitting Narrow Farfield DFB Laser Applications: XG-PON	A, B	2.5	1270	-40 to 85 (FL+7.5 mm) in Hermetic TO-56 package	Aspherical Lens cap
127D-02I-VCT11	1270 nm Edge Emitting Narrow Farfield DFB Laser Applications: NG-PON	A, B	2.5	1270	-40 to 85	Die 265 x 250 x 100
131D-02E-VCT11-50x	Die, Laser, 2.5G DFB NFF, Small Size, Chip on Tape Applications: PON, Access, Optical Ethernet, SDH	A, B	2.5	1310	-20 to 85	Die 265 x 250 x 100
131D-02E-VT5TB-50x	TO, Laser, 2.5G DFB NFF, 2 mm Ball Lens (6.6 mm FL), Pinout Type B Applications: PON, Access, Optical Ethernet, SDH	A, B	2.5	1310	-20 to 85	TO-Can TO-56
MAOD-127D02IL1T0	1270 nm Edge Emitting Narrow Farfield High Reflection Tolerance DFB Laser Applications: XG-PON	A, B	2.5	1270	-40 to 95	Die 265 x 250 x 100

10G Distributed Feedback Lasers

Part Number	Description and Applications	Block Diagram Key*	Max Data Rate (Gbps)	Wavelength (nm)	Temp Options (°C)	Package Type and Size (um)
127D-10I-VCT11-503	Die, 1270 nm Edge Emitting Narrow Farfield DFB Laser Applications: XGS-PON	A, B	10	1270	-40 to 95	Die 265 x 250 x 100
127D-10I-VT5AC	TO, 1270nm Edge Emitting Narrow Farfield DFB Laser Applications: XGS-PON	A, B	10	1270	-40 to 85 (FL+7.5 mm) in Hermetic TO-56	Aspherical Lens cap
127D-10I-VT5CC	TO, 1270nm Edge Emitting Narrow Farfield DFB Laser Applications: XGS-PON	A, B	10	1270	-40 to 85 (FL+10.1 mm) in Hermetic TO-56	Aspherical Lens cap
127D-10I-VCT11-504	10G Hi-BW 1270 nm CWDM DFB LD (WL -3.5/+2.5 nm) Applications: Data Center, 40G QSFP Module, Optical Ethernet, Fibre Channel, Fronthaul	B	10	1270	-40 to 95	Die 265 x 250 x 100
127D-10I-VT5AC-504	10G Hi-BW 1270 nm DFB LD TO-Can Applications: Mobile Fronthaul/Backhaul, Optical Ethernet	B	10	1270	-40 to 85	TO-Can TO-56
129D-10I-VCT11-504	Die, Laser, 10G DFB, 1290 -3.5 nm/+2.5 nm, Chip on Tape Applications: Data Center, 40G QSFP Module, Optical Ethernet, Fibre Channel	B	10	1290	-40 to 95	Die
131D-10I-VCT11-504	10G Hi-BW 1310 nm CWDM DFB LD (WL -3.5/+2.5 nm) Applications: Data Center, 40G QSFP Module, Optical Ethernet, Fibre Channel, Fronthaul	B	10	1310	-40 to 95	Die 265 x 250 x 100
131D-10I-VT5RC-504	TO, Laser, 10G DFB NFF, 2 mm Ball Lens, WL= ±10 nm, Pinout Type C Applications: Optical Ethernet, Fibre Channel, SFP Module, Data Center, Fronthaul	B, Q	10	1310	-40 to 85	TO-Can TO-56
133D-10I-VCT11-504	Die, Laser, 10G DFB NFF, 1330 -3.5 nm/+2.5 nm, Chip on Tape Applications: Data Center, 40G QSFP Module, Optical Ethernet, Fibre Channel, Fronthaul	B, Q	10	1330	-40 to 95	Die 265 x 250 x 100
133D-10I-VT5AC-504	TO, Laser, 10G DFB NFF, 1330 ±10 nm, Asph Lens, Pinout Type C Applications: Mobile Fronthaul/Backhaul, Optical Ethernet	B, Q	10	1330	-40 to 85	TO-Can TO-56

25G Distributed Feedback Lasers

Part Number	Description and Applications	Block Diagram Key*	Max Data Rate (Gbps)	Wavelength (nm)	Temp Options (°C)	Package Type and Size (um)
MAOD-xxxD25B-LCT7	Die, Laser, 25G DFB, 1295, 1300, 1305, 1309, Chip on Tape Applications: Data Center, 100G Base-LR4	C, I	25	1295, 1300, 1305, 1309	50	Die 200 x 250 x 100
MAOD-1xxD25E-LCT3	Die, Laser, 25G DFB, 1271, 1291, 1311, 1331, 1351, 1371 Applications: 5G Fronthaul CWDM6	—	25	1271, 1291, 1311, 1331, 1351, 1371	-40 to 95	Die 200 x 250 x 100
MAOD-1xxD25G-LCT2	Die, Laser, 25G DFB, 1271, 1291 ,1311 ,1331 ,1351, 1371 Applications: 5G Fronthaul CWDM6, 100G CWDM4	—	25	1271, 1291, 1311, 1331, 1351, 1371	-5 to 85	Die 200 x 250 x 100
MAOD-xxxD25B-LCT0	Die, Laser, 25G DFB Applications: 5G Fronthaul MWDM12	—	25	1267.5, 1274.5, 1287.5, 1294.5, 1307.5, 1314.5, 1327.5, 1334.5, 1347.5, 1354.5, 1367.5, 1374.5	50	Die 200 x 250 x 100

*Refer to Block Diagrams on pages 8 - 11

Photonic Devices

25G Distributed Feedback Lasers *(continued)*

Part Number	Description and Applications	Block Diagram Key*	Max Data Rate (Gbps)	Wavelength (nm)	Temp Options (°C)	Package Type and Size (um)
MAOD-xxxD25B-LCT1	Die, Laser, 25G DFB Applications: 5G Fronthaul LWDM12	—	25	1290 – 1320	50	Die 200 x 250 x 100

Photodiodes: APD

Part Number	Description and Applications	Block Diagram Key*	Model	Bandwidth (GHz)	Wavelength (nm)	Responsivity (A/W)	Sensitivity (dBm)	Capacitance (f F)	Package Type
32444-01	10G APD, Backside Illuminated, Integrated Lens Option Standard and Enhanced Sensitivity, Die and Chip on Carrier Options Applications: 10G PON OLT/ONU	B	APD10B	12	1250 – 1650	0.8	-32^	105	Die
32447-01			APD10B/Lens	12	1250 – 1650	0.8	-32^	105	Die
32445-01			APD10B/CoC	12	1250 – 1650	0.8	-32^	105	CoC
32448-01			APD10B/Lens/CoC	12	1250 – 1650	0.8	-32^	105	CoC
32444-02			APD10B-ES	12	1250 – 1650	0.8	-30^	90	Die
32447-02			APD10B-ES/Lens	12	1250 – 1650	0.8	-30^	90	Die
32445-02			APD10B-ES/CoC	12	1250 – 1650	0.8	-30^	90	CoC
32448-02			APD10B-ES/Lens/CoC	12	1250 – 1650	0.8	-30^	90	CoC
MARP-FSAPD10A	10G APD, Frontside Illuminated Applications: 10G PON OLT/ONU	B	FSAPD10A	10	1250 – 1650	0.8	-30^	90	Die
MARP-FSAPD10B		B	FSAPD10B	10	1250 – 1650	0.8	-31^	90	Die
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	APD28A	20	1250 – 1650	0.8	-22	50	Die
32411-03			APD28A/CoC	20	1250 – 1650	0.8	-22	50	CoC
32411-04			APD28A/CoC2	20	1250 – 1650	0.8	-22	50	CoC
32392-03			APD28A/Lens	20	1250 – 1650	0.8	-22	50	CoC
32412-03			APD28A/Lens/CoC	20	1250 – 1650	0.8	-22	50	CoC
32412-04			APD28A/Lens/CoC2	20	1250 – 1650	0.8	-22	50	CoC
32411-07			APD28A/QCoC	20	1250 – 1650	0.8	-22	50	CoC
32411-08			APD28A/QCoC2	20	1250 – 1650	0.8	-22	50	CoC
32411-05			APD28A/Lens/QCoc	20	1250 – 1650	0.8	-22	50	CoC
32411-06			APD28A/Lens/QCoc2	20	1250 – 1650	0.8	-22	50	CoC

Photodiodes: PIN

Part Number	Description and Applications	Block Diagram Key*	Model	Bandwidth (GHz)	Wavelength (nm)	Responsivity (A/W)	Sensitivity (dBm)	Capacitance (f F)	Package Type
32437-01	56G PIN, Backside Illuminated, Die and Carrier Options Applications: 100G PAM4, 200G/400G/800G Data Center	E, K, M	BSP56B/16/Lens	35	1200 – 1650	0.88	—	50	Die
32439-01			BSP56B/16/Lens/CoC	35	1200 – 1650	0.88	—	50	CoC
32439-06			BSP56B/16/Lens/CoC2	35	1200 – 1650	0.88	—	50	CoC

Network Connectivity

OTN: Framer/Mapper/FEC

Part Number	Description	Max Data Rate (Gbps)	Switch Matrix Size I/O Matrix	Supply Voltage (V)	Channels (#)	Embedded CDR (Y/N)	Embedded SerDes (Y/N)	Package Type and Size (mm)
S10123	10G OTN Framer/Mapper/FEC	11.3	1 x 1	2.5, 1.8, 1.2	1	Yes	Yes	FCBGA 19 mm 324-pin
S10124	10G OTN Framer/Mapper/FEC	11.3	1 x 2	2.5, 1.8, 1.2	1	Yes	Yes	FCBGA 25 mm 576-pin
S10126	10G OTN Framer/Mapper/FEC	11.3	1 x 1	2.5, 1.8, 1.2	1	Yes	Yes	FCBGA 19 mm 324-pin
S12312	24 x 10G/40G/100G OTN & MACsec	11.2	24 x 24	1.8, 1.5, 1.2, 0.9	24	Yes	Yes	FCBGA 42.5 mm 1680-pin
S12411	12 x 10G/40G/100G OTN & MACsec	28.0	12 x 12	1.8, 1.5, 1.2, 0.9	12	Yes	Yes	FCBGA 29 mm 783-pin
S12412	24 x 10G/40G/100G OTN & MACsec	27.96	24 x 24	1.8, 1.5, 1.2, 0.9	24	Yes	Yes	FCBGA 42.5 mm 1680-pin
S20101	PQ20T: 2 x 10G OTN Framer/Mapper/FEC	11.19	2 x 2	2.5, 1.2, 0.9	4	Yes	Yes	FCBGA 35 mm 1155-pin
S40101	PQ40T: 4 x 10G/40G OTN Framer/Mapper/FEC	11.19	4 x 4	2.5, 1.2, 0.9	4	Yes	Yes	FCBGA 35 mm 1155-pin
S50101	PQ50: 5 x 10G/40G OTN Framer/Mapper/FEC	11.19	5 x 5	2.5, 1.2, 0.9	5	Yes	Yes	FCBGA 35 mm 1155-pin
S60101	PQ60T: 6 x 10G/40G OTN Framer/Mapper/FEC	11.19	6 x 6	2.5, 1.2, 0.9	6	Yes	Yes	FCBGA 35 mm 1155-pin

*Refer to Block Diagrams on pages 8 - 11

Network Connectivity

Ethernet MACsec PHY

Part Number	Description	Block Diagram Key*	Max Data Rate (Gbps)	Switch Matrix Size I/O Matrix	Supply Voltage (V)	Channels (#)	Embedded CDR (Y/N)	Embedded SerDes (Y/N)	Package Type and Size (mm)
S12611	12 x 10G/40G/100G MACsec	N	27.96	12 x 12	1.8, 1.5, 1.2, 0.9	12	Yes	Yes	FCBGA 29 mm 783-pin
S12612	12 x 10G/40G/100G OTN & MACSsec	N	27.96	24 x 24	1.8, 1.5, 1.2, 0.9	24	Yes	Yes	FCBGA 42.5 mm 1680-pin
S20020	Dual 100G/50G/40G/50G/25G/MACsec PHY	N	26.56	8 x 8	1.8, 0.9	8	Yes	Yes	HFCBGA 17 mm 256-pin

Ethernet PHY

Part Number	Description	Block Diagram Key*	Max Data Rate (Gbps)	Switch Matrix Size I/O Matrix	Supply Voltage (V)	Channels (#)	Embedded CDR (Y/N)	Embedded SerDes (Y/N)	Package Type and Size (mm)
MATP-05025	PRISM-50: 2 x 25G NRZ to 1 x 26 GBaud PAM4 PHY with Integrated Laser Driver	E	53.125	1 x 1	1.8, 1.0, 0.75	1	Yes	Yes	HFCBGA 10 mm 177-pin
MATP-10025	PRISM: 4 x 25G NRZ to 1 x 53 GBaud PAM4 PHY with FEC and Integrated Laser Driver	K	106.25	1 x 1	1.8, 1.0, 0.75	1	Yes	Yes	HFCBGA 10 mm 177-pin
QT2025	10GE Serial to XAUI PHY for 10GBASE-LRM, LR, SR, 10GBASE-KR (SFP+ and Serial Backplane)	—	10.52	1 x 1	1.8, 1.2	1	Yes	Yes	PBGA 13 mm 144-pin
QT2225	Dual 10GE Serial to XAUI PHY for 10GBASE-LRM, LR, SR, 10G BASE-KR (SFP+ and Serial Backplane)	—	10.52	2 x 2	1.8, 1.2	2	Yes	Yes	BGA 23 mm 484-pin
S28115	100 Gbps Multi-Link Gearbo x (MLG) Supporting 10 x 10GE	Q	28.0	10 x 10	2.5, 1.2, 0.9	10	Yes	Yes	HFCBGA 19 mm 324-pin

Ethernet Embedded Processors

Part Number	Description	Clock Frequency (GHz)	DDR3 + ECC	10/100/100 Ethernet	Typical Power (W)	USB 2.0 with PHY	Package Type and Size (mm)
APM86190	Single Core Power™ Processor	800 MHz – 1.2	64b/32b	2 GbE: 2 RGMII	Single Core 5.49 W @ 1 GHz	3	FC-PBGA 27 x 27
APM86290	Dual Core Power™ Processor	800 MHz – 1.2	64b/32b	2 GbE: 2 RGM11	Dual Core 7.06 W @ 1 GHz	3	FC-PBGA 27 x 27
APM86391	Single Core Power™ Processor	600 MHz – 1	32b	2 GbE: 2 RGMII	Single Core 4.09 W @ 1 GHz	3	FC-PBGA 27 x 27
APM86392	Dual Core Power™ Processor	600 MHz – 1	32b	2 GbE: 2 RGMII	Dual Core 5 W @ 1 GHz	3	FC-PBGA 27 x 27
APM86691	Single Core Power™ Processor	800 MHz – 1.2	64b/32b	4 GbE: 2 RGMII, up to 4 SGMII	Single Core 5.49 W @ 1 GHz	3	FC-PBGA 27 x 27
APM86692	Dual Core Power™ Processor	800 MHz – 1.2	64b/32b	4 GbE: 2 RGMII, up to 4 SGMII	Dual Core 7.06 W @ 1 GHz	3	FC-PBGA 27 x 27
APM86491	Single Core Power™ Processor	800 MHz – 1	16b/32b	2 GbE: 2 RGMII	3.65 W @ 1 GHz	2 (USB 3.0)	WB-PBGA 19 x 19
APM86791	Single Core Power™ Processor	800 MHz – 1	16b/32b	4 GbE: 2 RGMII,	3.65 W @ 1 GHz	2	WB-PBGA 9 x 19

Test & Measurement Receivers

Part Number	Description	Type	Bandwidth (GHz)	Wavelength (nM)	Sensitivity (dBm)	Responsivity (A/W)	Gain (V/W)
11059-02	AD-40APDir-FC	APD Instrument	12	1250 – 1650	-27	—	3500
11058-02P	AD-40xr-FC	XR Instrument	12	700 – 1650	-19	—	400
11001-03	D-15-FC	VIS-ir Instrument	30	400 – 1700	—	0.2	—
11212-01P	D-32xr-FC	XR Instrument	28	800 – 1650	—	0.77	—
11057-02	D-8ir-FC	IR Instrument	50	950 – 1650	—	0.7	—
11012-05P	DG-15ir-FC	IR Instrument	20	950 – 1650	—	0.6	—
11206-01	DG-32xr-FC	XR Instrument	28	800 – 1650	—	0.77	—
11204-01	DGM-32xr-FC	XR Photodetector	28	800 – 1600	—	0.77	—
11204-05	DGM-32xr-DMD	XR Photodetector	28	800 – 1600	—	0.77	—
11204-06	DGM-32xr-SC	XR Photodetector	28	800 – 1600	—	0.77	—
11069-02	P-18A/3K/Z50/FC	IR Photodetector	19	1200 – 1650	—	0.9	—
11112-04	P-40HPA/8V/Z50/AC/SC	IR Photodetector	40	1200 – 1650	—	0.65	—
11113-04	P-40HPA/8V/Z50/DC/SC	IR Photodetector	40	1200 – 1650	—	0.65	—
11113-05	P-40HPA/8V/Z50/DC/FC	IR Photodetector	40	1200 – 1650	—	0.65	—
11088-05	P-50A/8V/Z50/DC/FC	IR Photodetector	50	1200 – 1650	—	0.5	—
11238-01	P-50C/8V/Z50/DC/FC	IR Photodetector	50	1200 – 1650	—	0.7	—
11241-01P	P-70A/8V/Z50/FC	IR Photodetector	70	1200 – 1650	—	0.5	—
11104-05	PT-10SFA/17LP/DC/SC	IR Photodetector	8.5	1200 – 1650	-20	1	700

*Refer to Block Diagrams on pages 8 - 11

Network Connectivity

Test & Measurement Receivers *(continued)*

Part Number	Description	Type	Bandwidth (GHz)	Wavelength (nM)	Sensitivity (dBm)	Responsivity (A/W)	Gain (V/W)
11044-16	PT-12B/8SMA/TDC/FC	XR Photodetector	9.5	750 – 1650	-20	0.55	450
11245-01-PPR	PT-28F/8XLMD/DC/FC/SM	IR Photodetector	30	1200 – 1650	—	0.75	95
11237-01P-PPR	PT-28F/10GDPPO/DC/FC	XR Photodetector	30	1200 – 1650	—	0.75	95
11174-04	PT-40G/8LDGPPO/AC/LC/B1	IR Photodetector	35	1200 – 1650	-11	0.65	4200
11174-05	PT-40G/8XLMD/AC/LC	IR Photodetector	35	1200 – 1650	-11	0.65	4200
11174-06	PT-40G/8XLMD/AC/FC/B1	IR Photodetector	35	1200 – 1650	-11	0.65	4200
11174-07	PT-40G/8XLMD/AC/FC	IR Photodetector	35	1200 – 1650	-11	0.65	4200
11243-01	PT-50A/8V/DC/FC	IR Photodetector	50	1200 – 1650	—	0.55	105
11000-03	PX-D7-FC	VIS-ir Instrument	60	400 – 900	—	0.03	—
MARP-PT28E-02-PPR	PT-28E/V2/12XLMD/AC/FC	IR Photodetector	25 – 35	1200 – 1650	-7	0.78	100-2700
11153-02	AT-10SFA/17LP/AC/MM/FCs	APD Receiver	8.5	1250 – 1650	-28	0.8	1240
11233-01	AT-10SFH/17LP/AC/MM/FC	APD Receiver	10.5	1250 – 1650	-28.5	0.7	12000
11219-03	AT-2.5A/5MMLC/8FPC	APD ROSA	2	1200 – 1600	-35	0.7	—
11215-01P	AT-2.5SFB/17LP/AC/MM/FC	APD Receiver	1.7	1250 – 1650	-33	0.7	7100
11226-01	AT-2.5SFB/ER/17LP/AC/MM/FC	APD Receiver	1.7	1250 – 1650	-3.4	0.7	14000
11132-03	PT-15SFA/17LP/AC/LC	PIN Receiver	12.5	1200 – 1650	-16.5	0.75	700
MARP-AT12C-01-PPR	AT-12C/5MMLC/8FPC	APD ROSA	10	1200 – 1600	-28	0.8	28000

*Refer to Block Diagrams on pages 8 - 11

Package Guide

Photonics

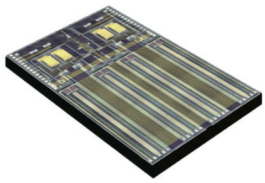
Die

Detectors

Lasers

TO-CAN TO56, TO46

L-PIC Silicon Photonic Die



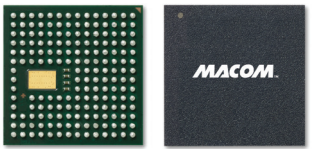
Yahara

QT2225

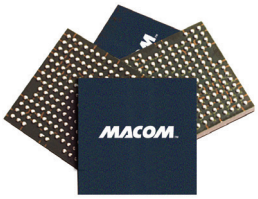
ES200

X240

MATP-10025/MATP-05025



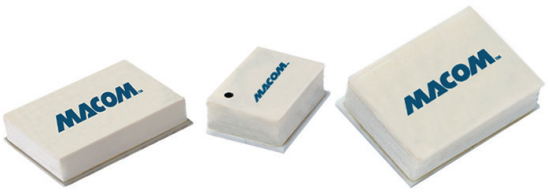
QT:



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

Notes

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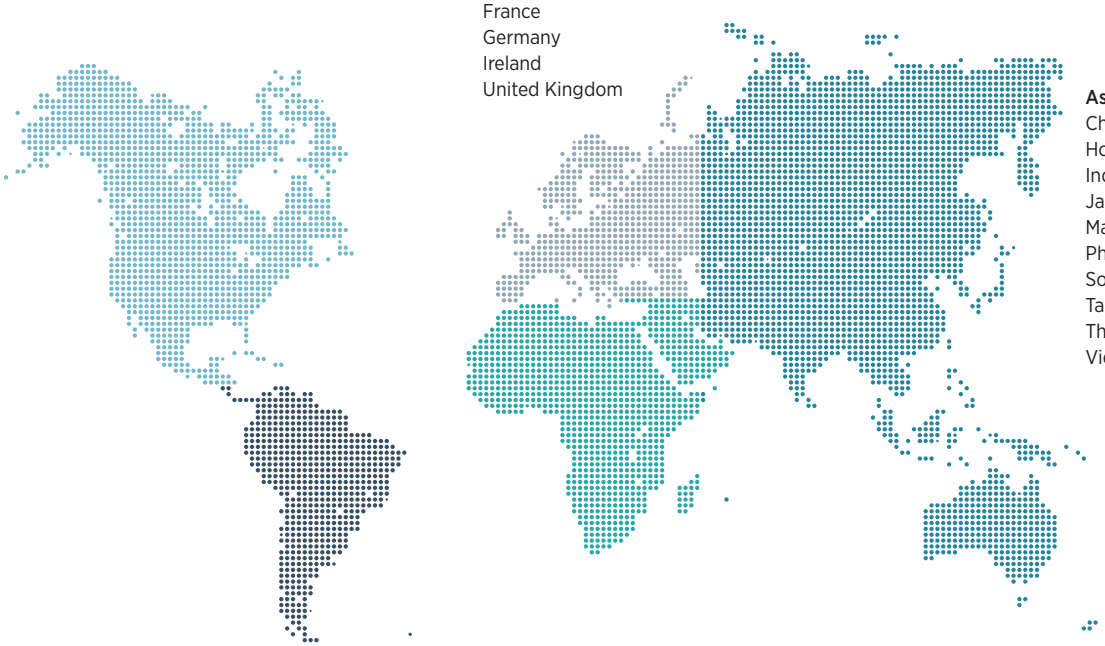

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