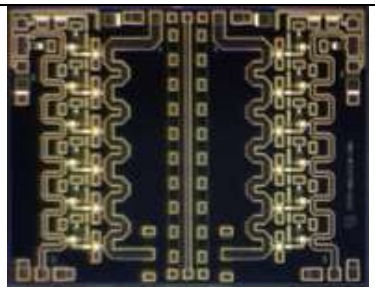
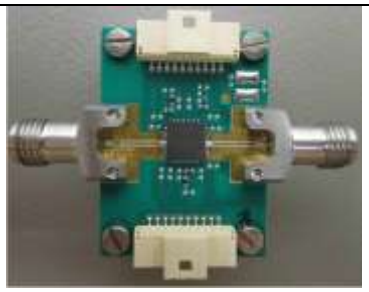
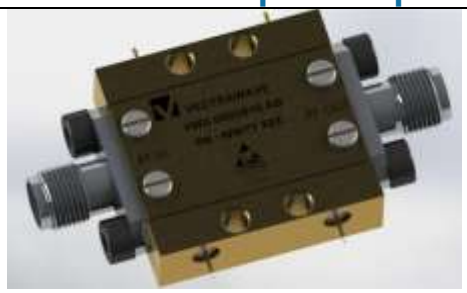
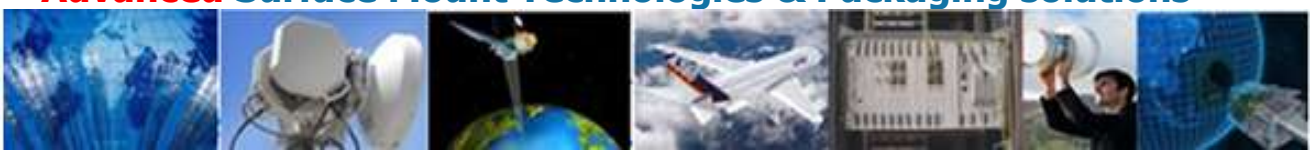
OPTICAL COMMUNICATION PRODUCTS & SUBSYSTEMS

"Providing integrated solution for PAM4 & 400 G Optical links"

	
Distributed MMIC Amplifier up to 50GHz	QFN Drivers up to 40GHz
	
30KHz to 40 GHz Driver Amplifier	Optical Receiver
	
Dual/Quad Driver for optical transmitter	Optical Switch/Amplifier

Advanced Surface Mount Technologies & Packaging solutions



Smart Amplifiers, Integrated Circuits, Systems

for Microwave, RF and Lightwave Equipements

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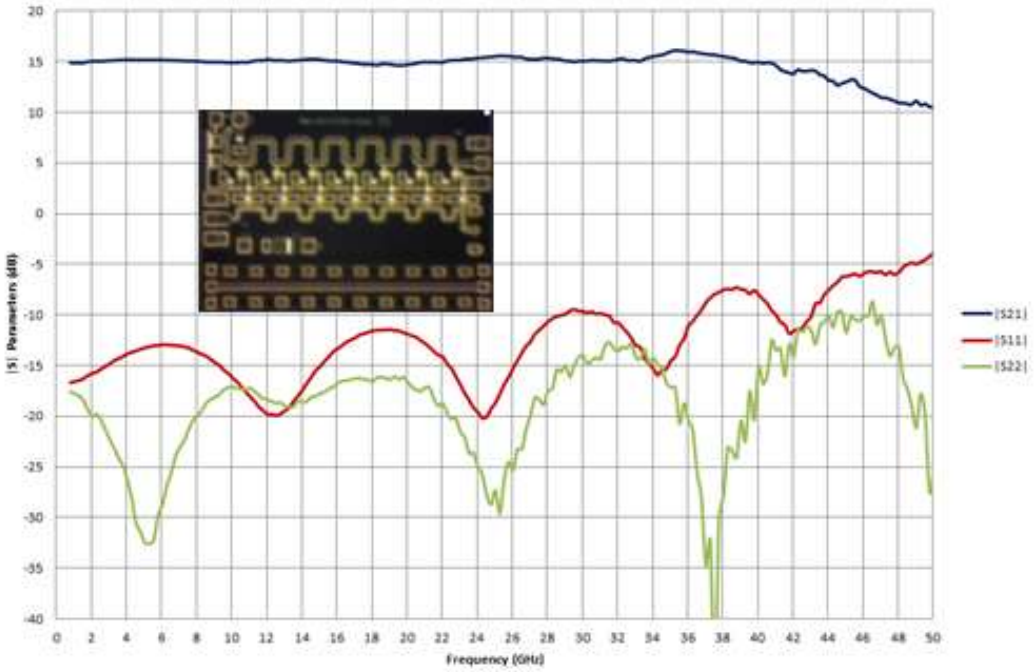
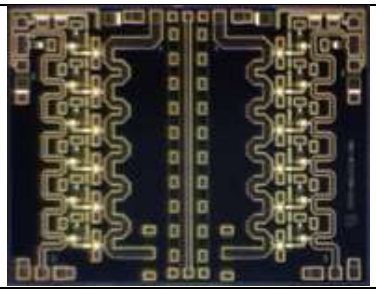
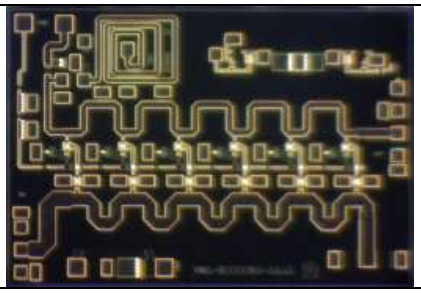
Distributed MMIC Amplifier up to 50 GHz



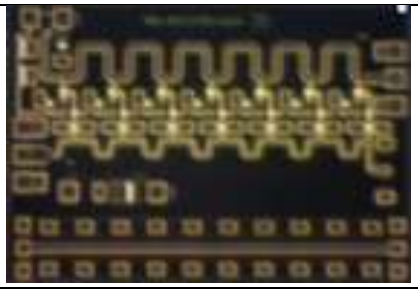
P/N	Function	Format	F min (GHz)	F max (GHz)	P Sat (dBm)	P Sat (W)	P 1dB (dBm)	Gain (dB)	Vdd (V)	Idd (mA)
VWA 50014 AA	MPA	Single Die	DC	28	23	0.2	21	17	9	200
VWA 50015 AA	LNA	Single Die	DC	35	16	0.04	15	10	8	80
VWA 50015 AB	LNA	Single Die	DC	31	20	0.1	19	14	8	100
VWA 50015 AC	LNA	Single Die	DC	35	16	0.04	15	10	8	80
VWA 50025 AA	LNA	Single Die	DC	44	15	0.03	14	10	8	90
VWA 5000056 AA	MPA	Single Die	1	20	**27**	0.5	24	**15**	8	290
VWA 5000065 AA	Laser Driver	Single Die	DC	13	16	0.04	15	10	5	150
VWA 5000050 AA	MPA	Single Die	DC	45	19	0.08	16	13	5	85
VWA 5000051 AA	MPA	Double Die	DC	45	19	0.08	16	13	5	85
VWA 5000052 AA	MPA	Single Die	DC	50	21	0.12	19	12	5	150
VWA 5000053 AA	**MPA (1)**	Double Die	DC	50	21	0.12	19	12	5	150
VWA 5000054 AA	**MPA (2)**	Single Die	DC	50	21	0.12	19	13	5	140
VWA 5000062 AA	**MPA (3)**	Single Die	DC	50	23	0.2	19	14	6	150



MPA (1)



MPA (2)



MPA (3)

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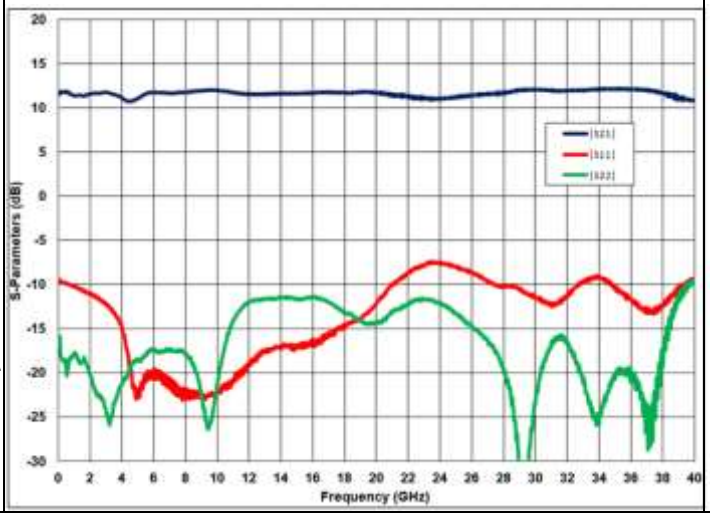
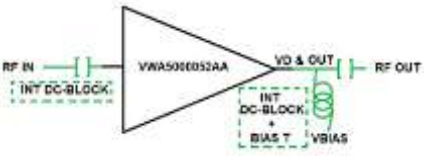
Evaluation board (EVB) for Chip & QFN up to 40GHz

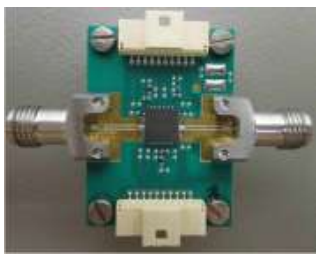
VWA 0000918 AA
EVB for
VWA 0000052 AA



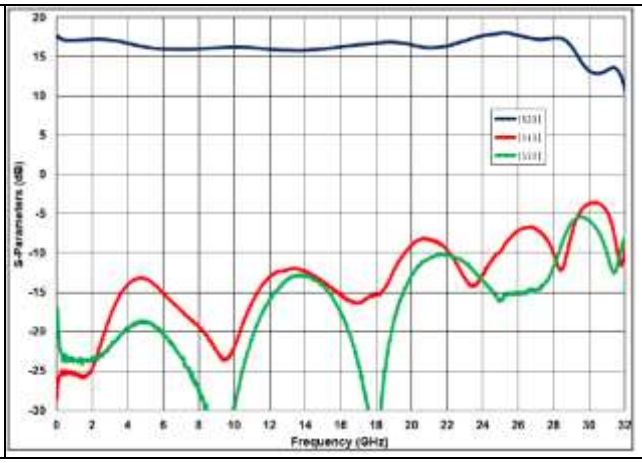


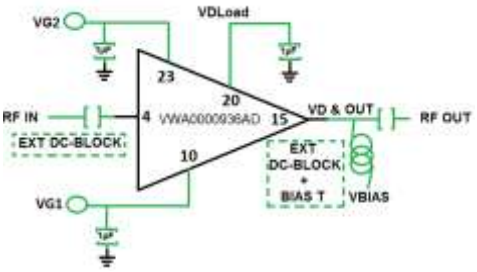
VWA 0000918 AA
include Bias Tee & DC Block

MMIC P/N	EVB Chip	QFN P/N	Size	EVB QFN
VWA 50014 AA	VWA 0000921 AA	VWA 0000936 AD	5X5 24L	VWA 0000957 AA
VWA 50015 AA	VWA 0000924 AA	Consult Factory		Consult Factory
VWA 50015 AB	VWA 0000925 AA	Consult Factory		Consult Factory
VWA 50015 AC	VWA 0000924 AA	Consult Factory		Consult Factory
VWA 50025 AA	VWA 0000922 AA	Consult Factory		Consult Factory
VWA 5000050 AA	VWA 0000927 AA	Consult Factory		Consult Factory
VWA 5000051 AA	VWA 0000928 AA	Consult Factory		Consult Factory
VWA 5000052 AA	VWA 0000918 AA	VWA 0000940 AA	4X4 24L	VWA0000958 AA
VWA 5000053 AA	VWA 0000926 AA	Consult Factory		Consult Factory
VWA 5000054 AA	VWA 0000919 AB	Consult Factory		Consult Factory
VWA 5000056 AA	VWA 0000923 AB	VWA 0000942 AA	5X5 24L	VWA 0000960 AA
VWA 5000062 AA	VWA 0000920 AB	Consult Factory		Consult Factory



VWA 0000957 AA
EVB for QFN
VWA 0000936 AD





VWA 0000957 AA
External Bias Tee & DC Block

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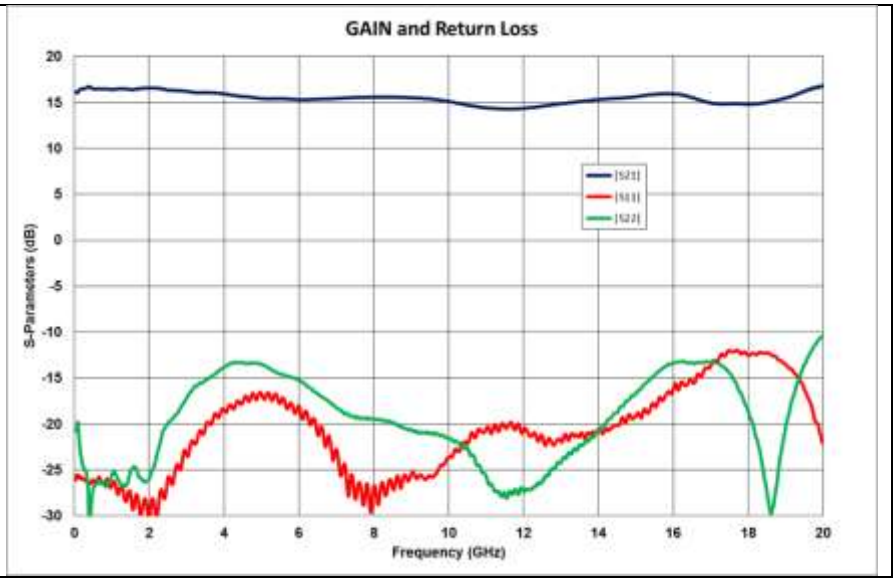
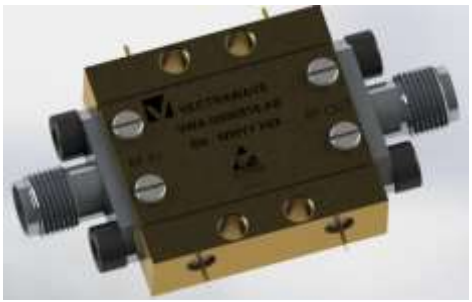
Driver Amplifier up to 40 GHz

VWA 0000964 AA

Size : 20,7 X 19 X 9,1mm

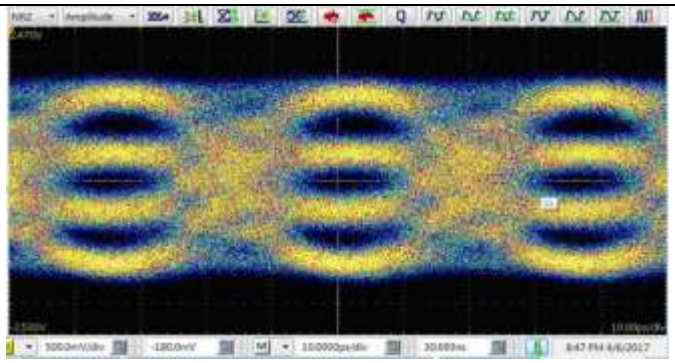


Part Number	Description	RF In/Out
VWA 0000964 AA	40KHz-20 GHz | 15dB Gain |NF= 2,5 to 4,5dB/ 23 dBm Psat - 8V/180mA - RF, Pulse & Data	SMA (F)
VWA 0000916 AA	40KHz-40 GHz | 20dB Gain | NF 5dB / Vout 4Vpp -6V/280mA - RF, Pulsed & Data com	K (F)

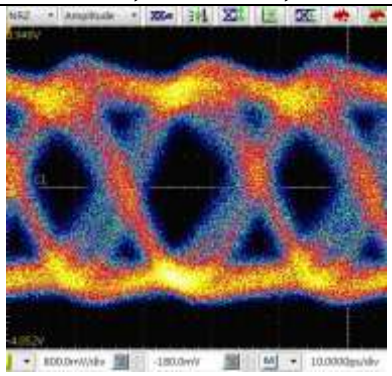


VWA 0000916 AA

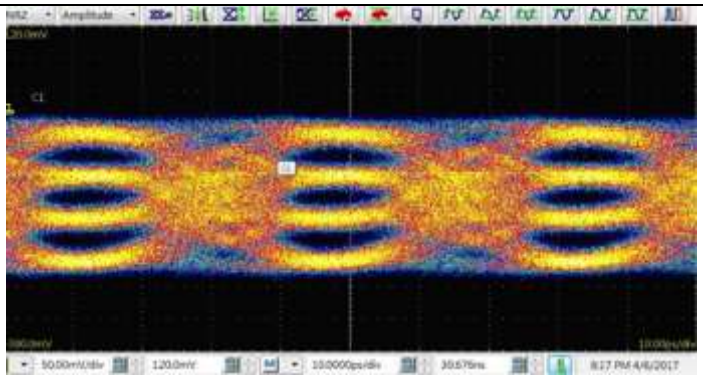
Size : 20,7 X 19 X 9,1mm



PAM 4 - 28 Gbps Output signal - 0,5V /Div



56 Gbps NRZ Output – 0,8V/Div



28 Gbps Input signal - 0,05V /Div

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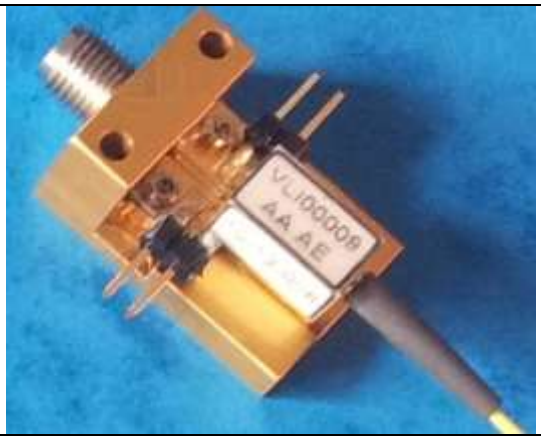
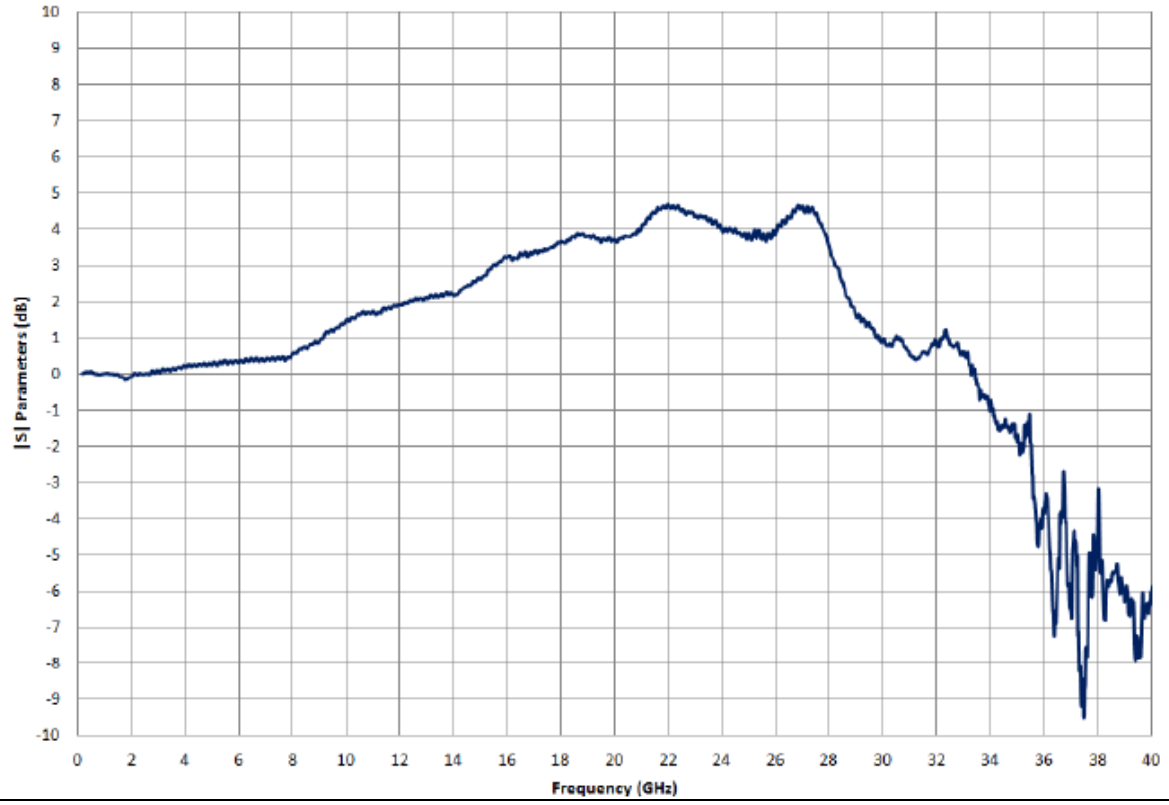
Optical Receiver up to 43 GHz

Optical Receiver with K connector



Optical Receiver with coplanar PIN



VLI A 0000898 AA (40KHz to 30 GHz ORX – 50 Ohm Loaded) - Normalized IS21I

VWA P/N	Specification
VLI 0000XXX	30KHz to 18 GHz – 0.7 A/W Ultra Wide Band Optical Receiver (50 Ohm Loaded)
VLI 0000899	30KHz to 30 GHz - 0,5A/W Ultra Wide Band Optical Receiver (50 Ohm Loaded)
VLI 0000YYY	100KHz to 40 GHz – 0.4 A/W Ultra-Wide Band Optical Receiver (50 Ohm Loaded)

Possibility of integrating TIA pending of package

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Clock phase shifter Drivers Ordering information:

RF Signal Processing		
Code	**Function**	**Package**
VWA 00020 AB	8-12 GHz,600° Phase shift,7Vpp output PSD	SMD
VWA 00060 AB	9.9-11.5 GHz->19.8-23 Ghz, 800° Phase shift,4Vpp output PSD	SMD
VWA 00066 AA	9.9-11.5 GHz->19.8-23 Ghz, 600° Phase shift,8Vpp output PSD	SMD
VWA 00039 AB	8-12 GHz,600° Phase shift,7Vpp output PSD	EVB
VWA 00061 AB	9.9-11.5 GHz->19.8-23 Ghz, 800° Phase shift,4Vpp output PSD	EVB
VWA 00064 AB	9.9-11.5 GHz->19.8-23 Ghz, 600° Phase shift,8Vpp output PSD	EVB
VWA 00045 AD	10.7 GHz-> 21.4Ghz(X3), Phase control 6 bit (5.6°), 2Vpp output PSD	Module
VWA 00054 AD	10.7 GHz-> 21.4GHz(X2)-42.8GHz, Phase control 6 bit (5.6°), 2Vpp output PSD	Module
VWA 00047 AA	21-22 GHz->42-44 GHz, 2.8Vpp, K connectors, Active Frequency Double FDF	Module
VWA 00053 AA	10-11 GHz->20-22 GHz, 2.8Vpp, K connectors, Active Frequency Double FDF	Module

10G/20G/30G/40G Data Coders ordering information:

High Speed Logic & Data Coders		
Code	**Function**	**Package**
VWA 50001 AA	40 Gbps, 800 mVpp, NRZ to RZ-DPSK coder	Die
VWA 50002 AA	40 Gbps, 800 mVpp, D - FF Gate	Die
VWA 50023 AA	40 Gbps, 800 mVpp, Differential Coder	Die
VWA 50024 AA	40 Gbps, 800 mVpp, NRZ to RZ Coder	Die
VWA 50029 AA	40 Gbps, 800 mVpp Duobinary Coder	Die
VWA 50030 AA	40 Gbps, 800 mVpp Differential Limiter Amplifier	Die
VWA 00055 AA	30 Gbps, 800 mVpp, NRZ to RZ-DPSK coder	QFN
VWA 00056 AA	30 Gbps, 800 mVpp, D - FF Gate	QFN
VWA 00057 AA	30 Gbps, 800 mVpp, Differential Limiter Amplifier	QFN
VWA 00058 AA	30 Gbps, 800 mVpp Duobinary Coder	QFN
VWA 00059 AA	30 Gbps, 800 mVpp, NRZ to RZ Coder	QFN
VWA 00074 AB	30 Gbps, 800 mVpp, Differential Coder	QFN
VWA 00077 AB	30 Gbps, 800 mVpp, GPPO connectors, NRZ to RZ-DPSK coder	EVB
VWA 00088 AB	30 Gbps, 800 mVpp, GPPO Connectors, D - FF Gate	EVB
VWA 00094 AB	30 Gbps, 800 mVpp, GPPO Connectors, Duobinary Coder	EVB
VWA 00095 AB	30 Gbps, 800 mVpp, GPPO Connectors, NRZ to RZ Coder	EVB
VWA 00078 AB	30 Gbps, 800 mVpp, GPPO Connectors, Differential Coder	EVB

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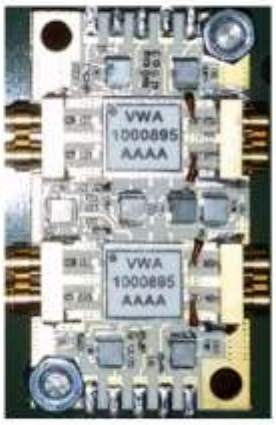
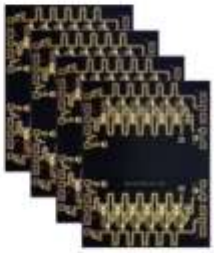
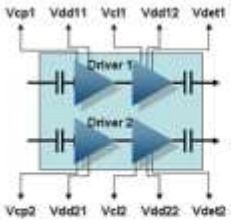
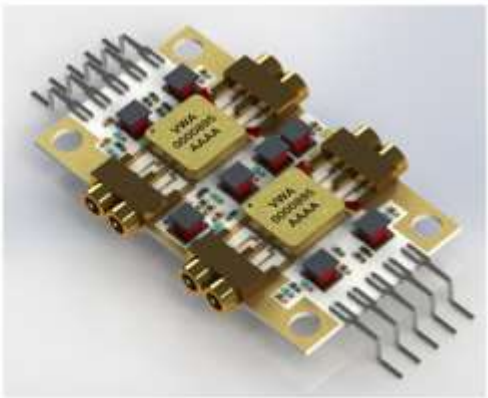
DUAL & QUAD DRIVER for 100G to 400G

VWA_5000051_AAAA: Double Amplifier MMIC 1
VWA_5000053_AAAA: Double Amplifier MMIC 2
VWA_0000895_AAAA: Double Driver_QFN 8X8
VWA_1000045_AAAA: GPPO Quad Driver Module



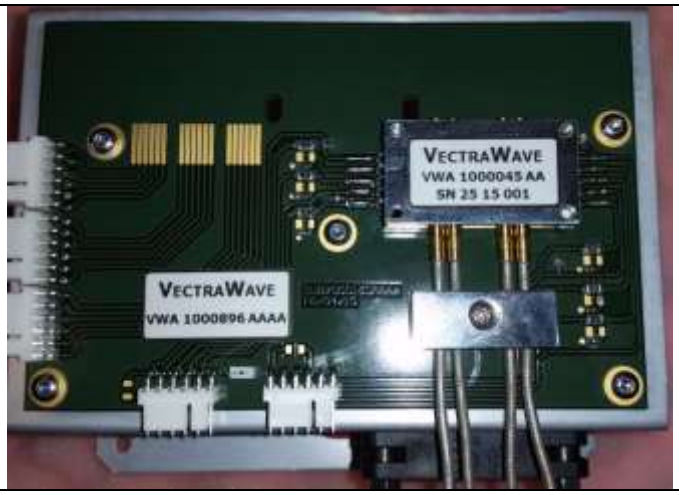


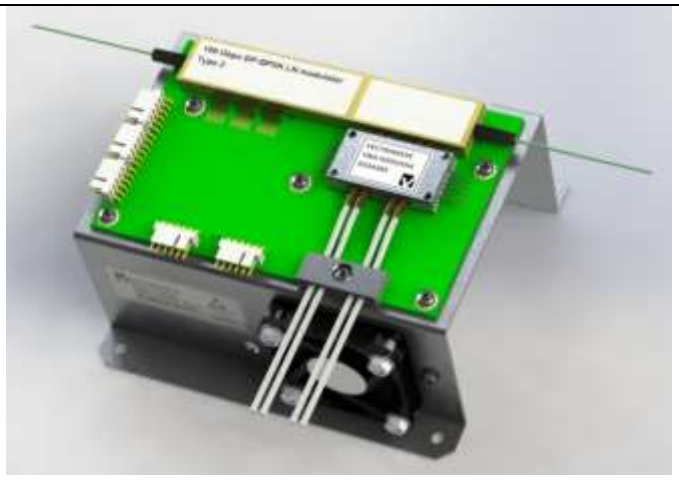




VectraWave

VWA_1000896_AAAA: Quad Driver Evaluation Board for OEM





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QUAD SOA DRIVER VWA 0000905 AA for Optical Packet Switching

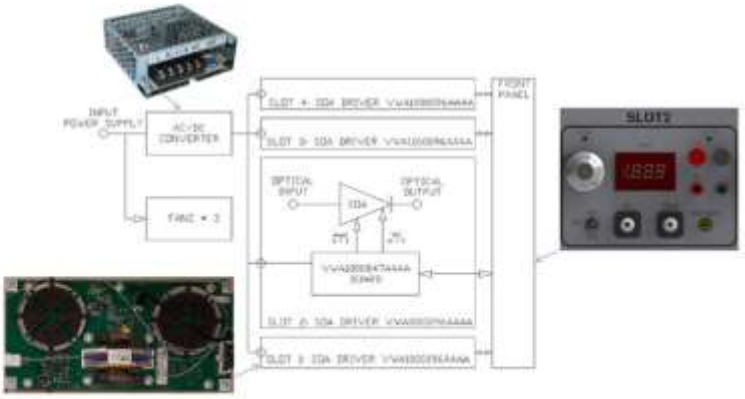
Main Features:

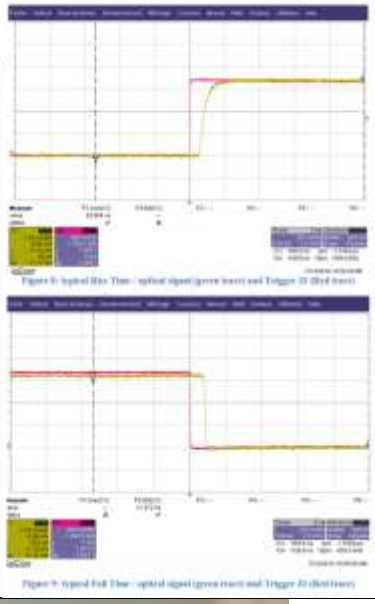
- 2U 19" Rackable
- Power Supply typ. 220V/50Hz
- LVTTL inputs to control pulse (SMB connector)
- Optical I/O FC/APC
- ZIF connectors to connect SOA/BOA (Easy maintenance)

Applications:

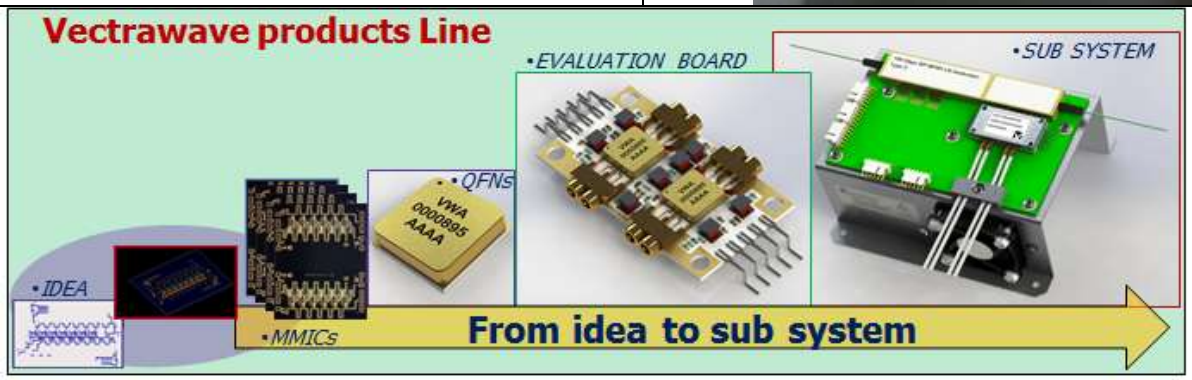
- Optical burst switching
- Optical Time Domain Multiplexing
- SOA/BOA evaluation test

Functional Block Diagram:





Packaging of "100G to 400G Subsystems" in BGA Package, on specific Requirement



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