


Product family: VWA-15-VA-257

**5 Gb/s, 10,7 Gb/s RZ & 12,5 Gb/s NRZ
Driver Amplifier with 6 to 8 V_{pp} Output control
for LiNbO₃ (LN)
and Electro Absorption (EA) Modulators**

Description

The **VWA-15-VA-257** is a broadband dual stage GaAs MMIC amplifier module, which provides up to 25 dB gain from 55 kHz to 15 GHz and delivers +21 dBm of output power, with a single Voltage regulated Bias. The output voltage can be set between 4 to 8 V_{pp} in varying the Pin V_{ctl}.

Applications

Main applications include: Long Haul, Medium Haul, Metro Access, Test Bench, Test & Measurement.

This unit performs LN and EAM driver functions for 10.7 Gb/s RZ data rates and 2.5 Gb/s, 5 Gb/s, 9,958 Gb/s and from 10,7 Gb/s to 12.5 Gb/s for NRZ data rates. The driver amplifier has single-ended input and output, and SMA field replaceable RF connectors (male or female)

Typical Characteristics (25°C)

Electrical Parameters	Symbols	Min	Typ	Max	Units
High Frequency Response (-3 dB)	BW _{high}	15			GHz
Low Frequency Response (-3 dB)	BW _{Low}			55	kHz
Averaged Gain	G	25			dB
Input Return Loss (1 GHz–12 GHz)	S11		- 8		dB
Output Return Loss (1 GHz–12 GHz)	S22		-8		dB
Output Voltage max	V _{pp-max}	7	8		V
Output voltage control command	V _c	0		1,5	V
Bias Voltage	V _{bias}	+10	+12	+ 15	V
Power Dissipation	P		3,5		W
RMS Jitter (including E/O modulator)	RMS Jitter			2	ps

Environment Parameters	Symbols	Min	Typ	Max	Units
Operating temperature	T _{op}	-5		+70	°C
Storage temperature	T _{stg}	-40		+85	°C

Absolute maximum ratings

Maximum ratings	Symbols	Min	Typ	Max	Units
Supply Voltage	V _{bias max}			+15	V
Lead soldering temperature				250	°C

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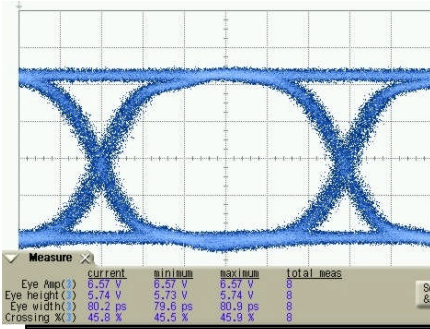
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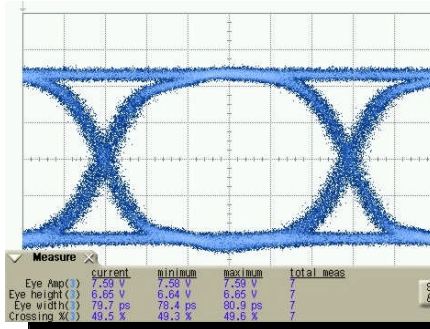
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Typical Eye diagram:

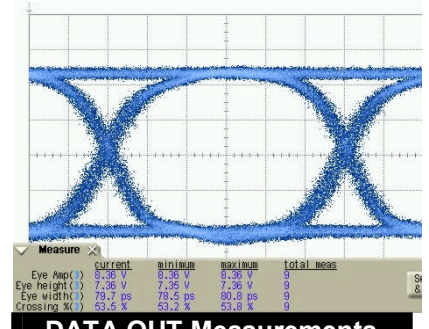


DATA OUT Measurements		
Vc =	0,29	V
Ibias	273,0	mA
Eye Amplitude:	6,57	Vpp
Eye Height:	5,74	Vpp
Eye Width:	80,3	ps
Rise Time:	28,0	ps
Fall Time:	30,6	ps
Jitter RMS:	2,4	ps
Jitter pp:	12,1	ps
Crossing %:	45,7	%
Jitter DRIVER		
Jitter RMS:	0,7	ps
Jitter pp:	3,9	ps

Data Out

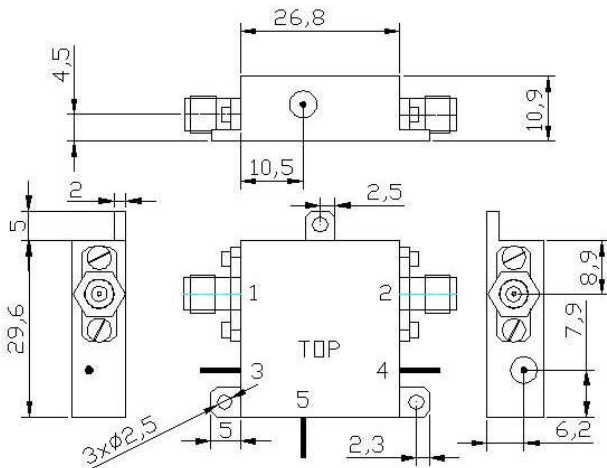


DATA OUT Measurements		
Vc =	1,69	V
Ibias	293,0	mA
Eye Amplitude:	7,58	Vpp
Eye Height:	6,64	Vpp
Eye Width:	79,7	ps
Rise Time:	32,8	ps
Fall Time:	30,2	ps
Jitter RMS:	2,5	ps
Jitter pp:	12,4	ps
Crossing %:	49,5	%
Jitter DRIVER		
Jitter RMS:	0,5	ps
Jitter pp:	4,8	ps



DATA OUT Measurements		
Vc =	3,00	V
Ibias	309,0	mA
Eye Amplitude:	8,36	Vpp
Eye Height:	7,36	Vpp
Eye Width:	79,6	ps
Rise Time:	34,5	ps
Fall Time:	30,0	ps
Jitter RMS:	2,4	ps
Jitter pp:	11,7	ps
Crossing %:	53,4	%
Jitter DRIVER		
Jitter RMS:	0,5	ps
Jitter pp:	2,1	ps

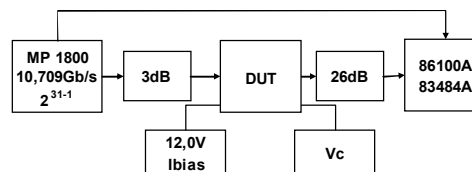
Mechanical characteristics



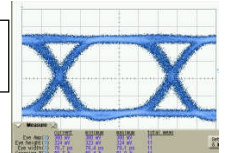
Handling

This product is sensitive to electrostatic discharge and should not be handled except at a static free workstation. Take precautions to prevent ESD; use wrist straps, grounded work surfaces and recognized anti-static techniques when handling the **VWA-15-VA-257** module.

Test Set



Data In



Pin Out

Pin Nb	Designation
1	Input
2	Output
3	Vbias
4	Ground
5	Vc



Care should be taken to avoid supply transient and over voltage. Over voltage above the maximum specified in absolute maximum rating section may cause permanent damage to the device.

Ordering information

Part number	Operating temp. °C	Connector In	Connector Out
VWA 00022 AA	-5 / + 70	SMA female	SMA female
VWA 00022 AB	-5 / + 70	SMA female	SMA male
VWA 00022 AC	-5 / + 70	SMA male	SMA female
VWA 00022 AD	-5 / + 70	SMA male	SMA male

Options on demand:

- Other packages upon request
- Heat sink



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