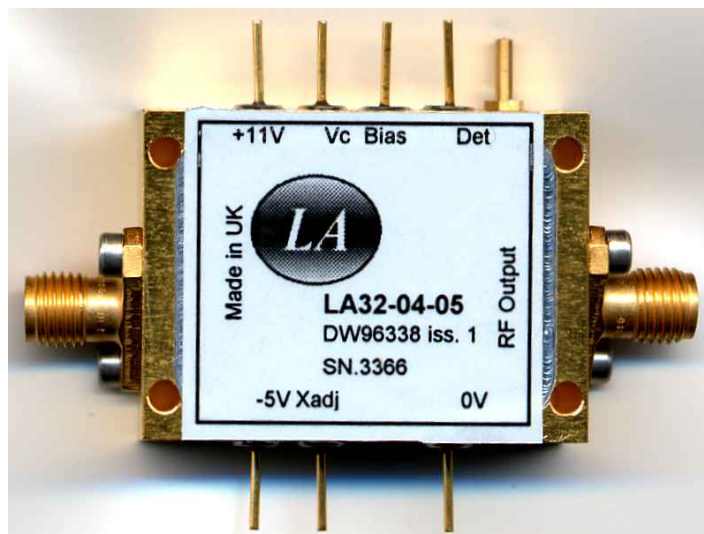




## *LA Techniques Ltd*

### **LA32-04-05 High Speed RZ Driver Amplifier**



The LA32-04-05 is a driver amplifier mainly intended for use as an RZ optical modulator driver. It is able to support data rates beyond 11 Gb/s with good pulse response and low jitter. Some of its key features are as follows.

- 30 kHz - 15 GHz Bandwidth
- $> 7 v_{pp}$  Eye Opening Output
- Low power dissipation ( $< 4$  W)
- Pulse symmetry adjustment
- Output level control
- Output level detector
- Bias tee in output
- Hermetically sealed

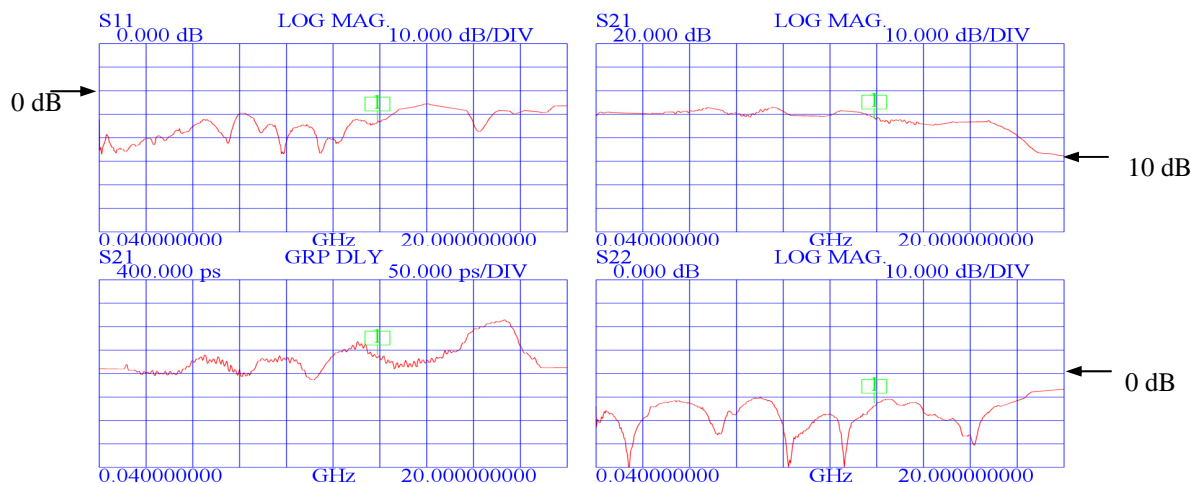
# Electrical Specification

(-5<sup>o</sup>C to +70<sup>o</sup>C Case Temperature)

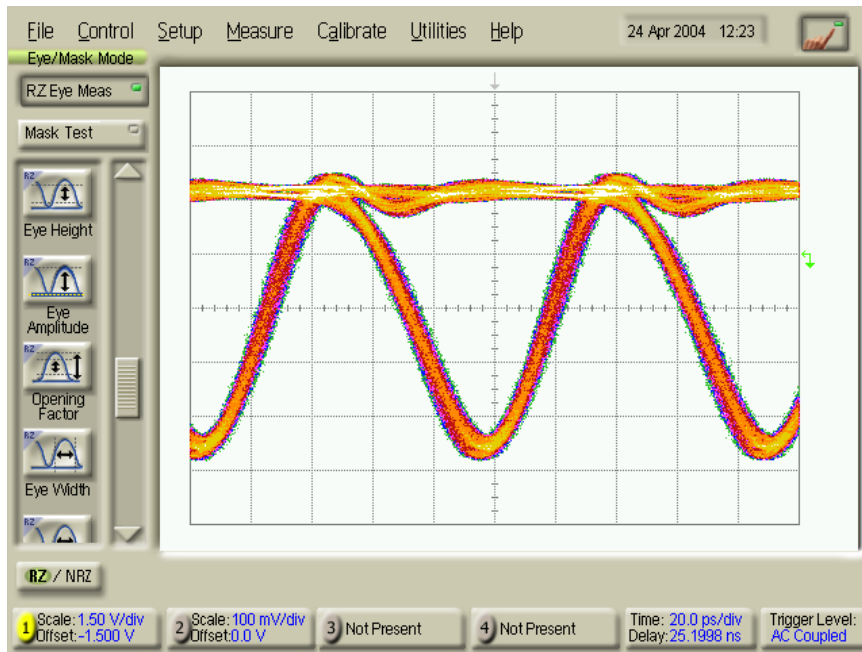
Parameter	Units	Min	Typ	Max
Bandwidth				
Low frequency 3 dB point	kHz	-	30	100
High frequency 3 dB point	GHz	12	15	-
Gain (mean, inverting)	dB	22	29	-
Gain ripple				
500 kHz - 10 GHz	dB	-	±2	-
Input range (no damage)	V <sub>pp</sub>	-	-	1.5
Input return loss (f < 10 GHz)	-	9	12	-
Output return loss (f < 12 GHz)	-	9	12	-
Output voltage <sup>2</sup> , V <sub>max</sub>	V <sub>pp</sub>	6.5	7.5	-
Output voltage range	V <sub>pp</sub>	4	-	V <sub>max</sub>
Output voltage control voltage	V	-15	-	0
Output with -11V control voltage <sup>4</sup>	V <sub>pp</sub>	-	3.0	4.0
Detector output (100 kΩ load) range	V	0	-	3.0
Detector output (100 kΩ load) <sup>1</sup>	V	1.2	1.5	1.8
Detector output resistance	kΩ	-	15	30
Pulse characteristics <sup>1,2,3</sup>				
Half height pulse width	ps	42	51	55
Half height pulse jitter	ps	-	-	8
Eye S/N	-	12	18	-
Pulse symmetry adjustment range <sup>1,3</sup>	ps	-5	-	+5
Symmetry control voltage range	V	-5	-	+5
RF Output bias-T				
dc path resistance	kΩ	-	1.0	2
maximum voltage	V	-10	-	+15
Supply voltage (positive) <sup>5</sup>	V	+10.5	+11	+11.5
Supply current (positive) <sup>1,2,3</sup>	mA	-	220	300
Supply voltage (negative) <sup>5</sup>	V	-4.5	-5	-6
Supply current (negative)	mA	-	8	13
Operating case temperature	°C	-5	-	+70

- Notes:**
- 10.7 Gb/s 2<sup>23</sup>-1 PRBS data, V<sub>xadj</sub> left unconnected
  - 0.5 v<sub>pp</sub> input drive, Mean Eye Opening (MEO), 47ps pulse width
  - Output MEO = 6 V<sub>pp</sub>. Jitter excludes measured test signal jitter
  - T<sub>case</sub> = 25<sup>o</sup>C
  - Supply voltage sequence: -5V to be applied before +11V
  - MEO taken to be Eye Amplitude on Agilent 86100A oscilloscope

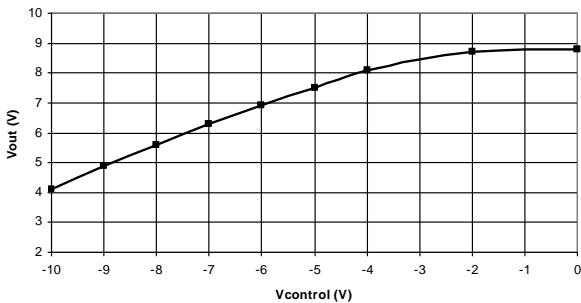
## Small Signal Characteristics



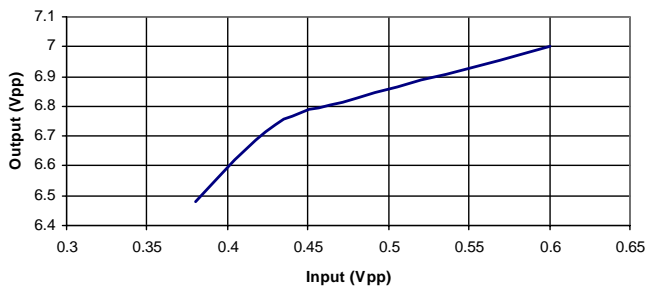
## 10.7 Gb/s RZ Eye Diagram Mean Eye Opening set to 7V



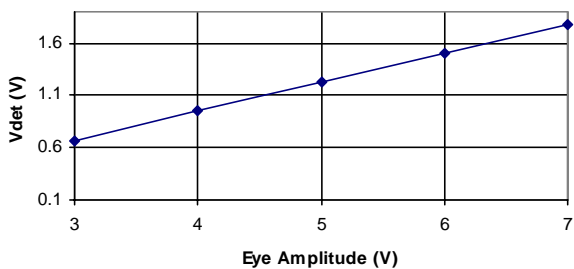
Variation of Eye Opening with Control Voltage



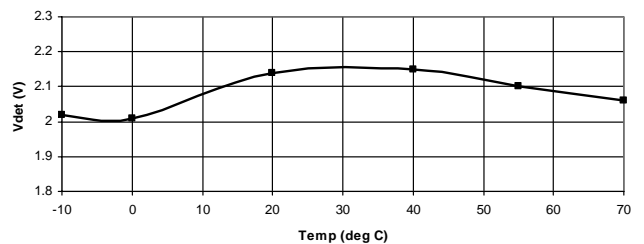
Output Variation with Input Level  
Vc set for 7V Output with 0.6V Input



Vdet Variation with Mean Eye Opening

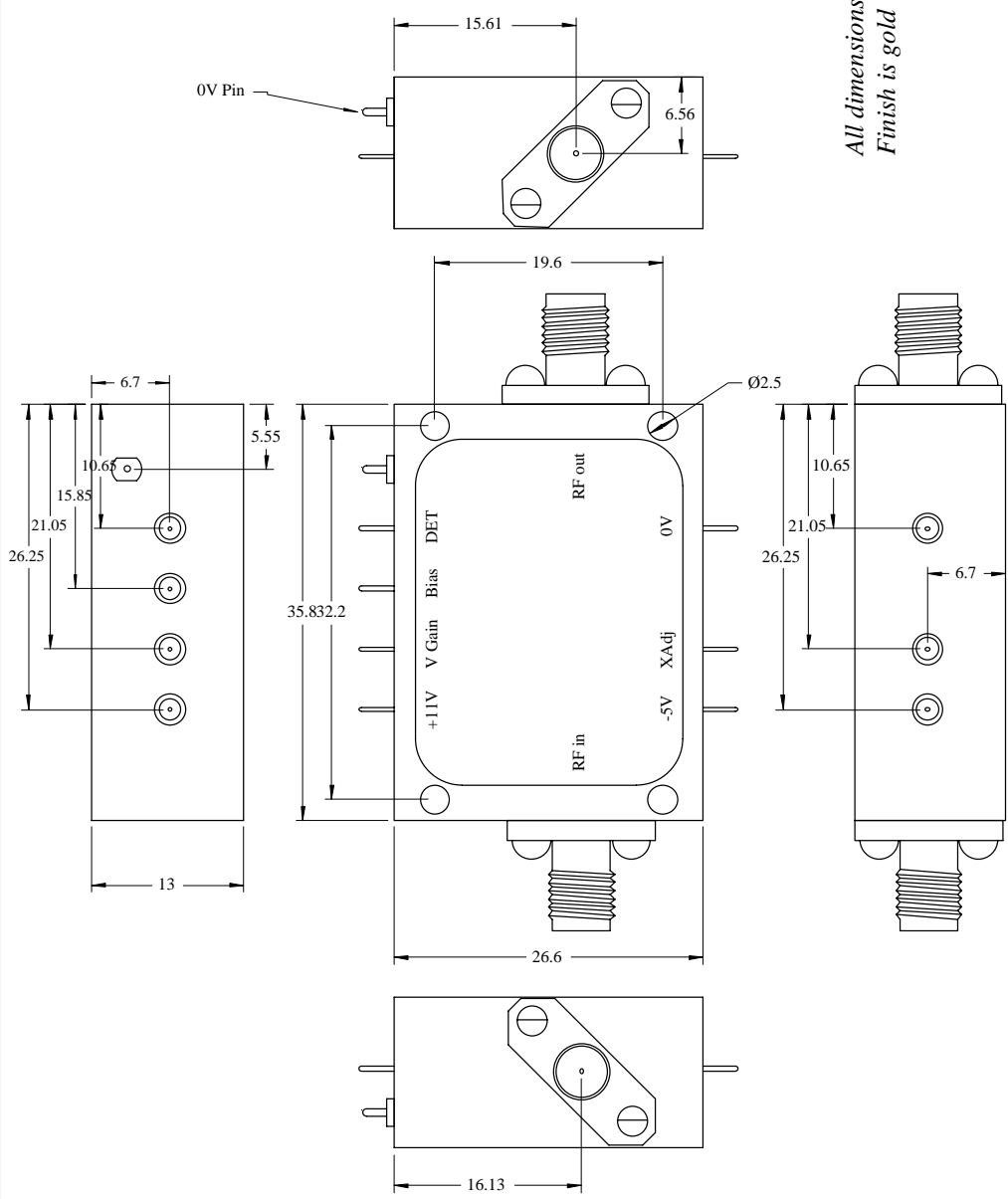


Vdet Variation with Temperature  
(MEO set to 6.5V)



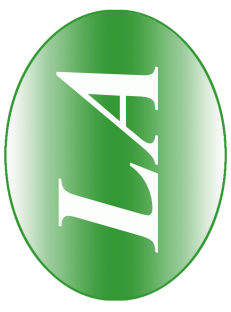
### Absolute Maximum Ratings

Parameter	Specification	Parameter	Specification
Input Level (RF)	1.5 Vpp	Symmetry voltage (Xadj pin)	-6V to +6V
dc Level on any RF port	±15V	Bias voltage (Bias pin)	-10V to +15V
Supply voltage (+11V pin)	-2V to +12V	Bias pin current	±8 mA
Supply voltage (-5V pin)	-6V to +2V	dc Level on detector (Det pin)	±15V
Control voltage (Vc pin)	-16V to 0V	Storage temperature	-40 to +100°C



*All dimensions in mm  
Finish is gold plate*

*Contact*



*Manufactured in the UK  
Specification subject to change without notification*

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