LA Techniques Ltd

LA32-04-07
High Speed NRZ Driver Amplifier

The LA32-04-07 is a driver amplifier mainly intended for use as an NRZ optical modulator driver. It is able to support data rates up to 12 Gb/s with good pulse response and low jitter. Some of its key features are as follows.

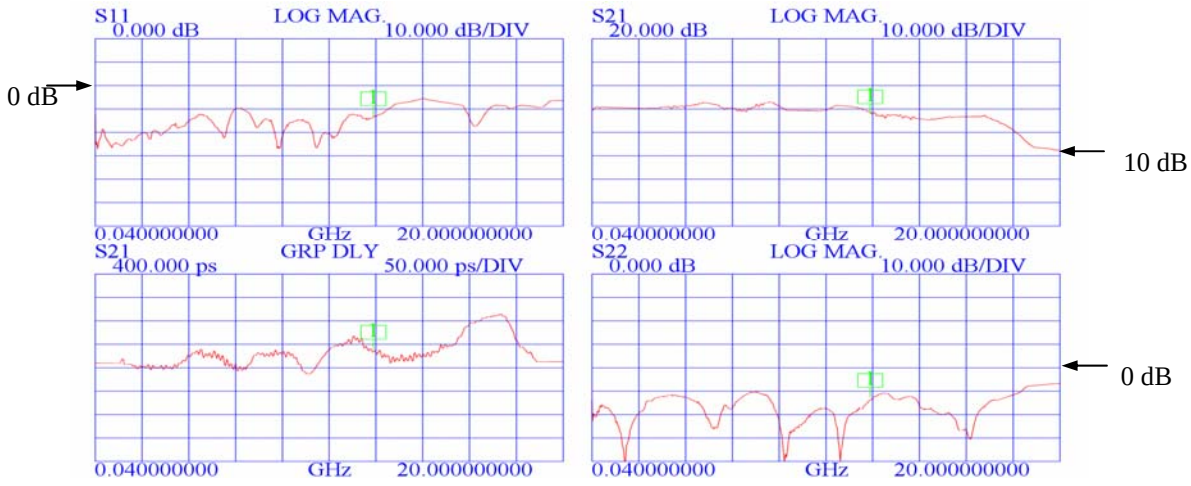
- 30 kHz - 15 GHz Bandwidth
- > 7 v_{pp} Eye Opening Output
- Low power dissipation (<4 W)
- Pulse symmetry adjustment
- Output level control
- Output level detector
- Bias-tee in output
- Hermetically sealed

Electrical Specification
(-5^{O}C to +70^{O}C Case Temperature)

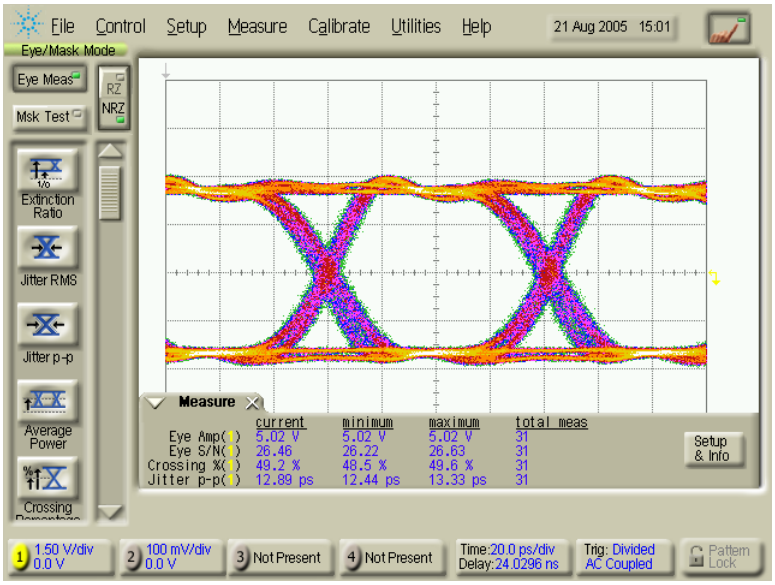
Parameter	Units	Min	Typ	Max
Bandwidth				
Low frequency 3 dB point	kHz	-	30	100
High frequency 3 dB point	GHz	12	15	-
Gain (mean, inverting)	dB	22	29	-
Gain ripple				
500 kHz - 10 GHz	dB	-	$\pm$2	-
Input range (no damage)	Vpp	-	-	1.5
Input return loss (f < 10 GHz)	-	8	12	-
Output return loss (f < 12 GHz)	-	8	12	-
Ouput voltage[2], V_{max}	V_{pp}	6.5	7.5	-
Output voltage range	V_{pp}	3.5	-	V_{max}
Output voltage control voltage	V	-10	-	0
Output with –10V control voltage	V_{pp}	-	2.0	3.5
Detector output (Vref-Vdet) range[4]	mV	-300	-	0
Detector output resistance[4]	kΩ	-	1	-
Pulse characteristics[1,2,3]				-
Rise / Fall time (10-90%)	ps	-	35	40
Pulse jitter	ps	-	-	12
Eye S/N	-	12	19	-
Pulse symmetry adjustment range[1,3]	%	45	-	55
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)[5]	V	+10.5	+11	+11.5
Supply current (positive)[1,2,3]	mA	-	280	380
Supply voltage (negative)[5]	V	-4.5	-5	-6
Supply current (negative)	mA	-	8	13
Operating case temperature	^{O}C	-5	-	+70

Notes: 1. 12 Gb/s 2^{23}-1 PRBS data
2. 0.7 v_{pp} input drive
3. Output set to 6 Vpp. Jitter excludes measured test signal jitter
4. Vdet and Vref pins require external biasing using 2 resistors network
5. Supply voltage sequence: -5V to be applied before +11V
6. Output taken to be Eye Amplitude on Agilent 86100A oscilloscope

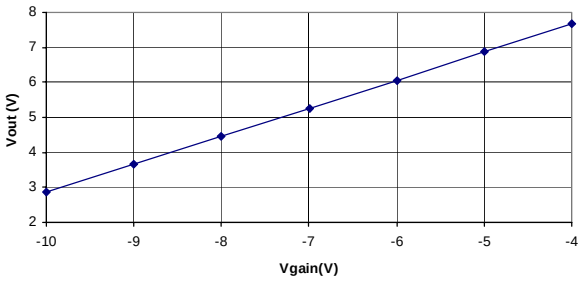
Small Signal Characteristics



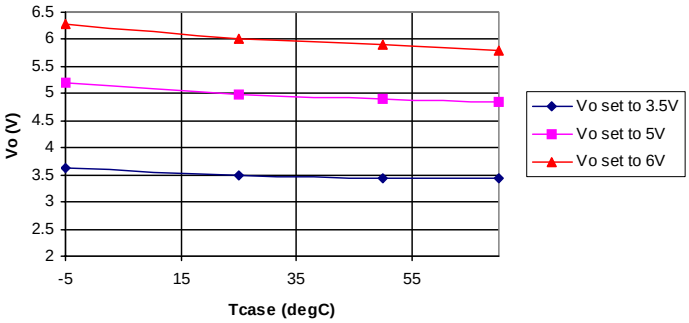
12 Gb/s 2^{31}-1 PRBS Eye Diagram
Mean Eye Opening set to 5V



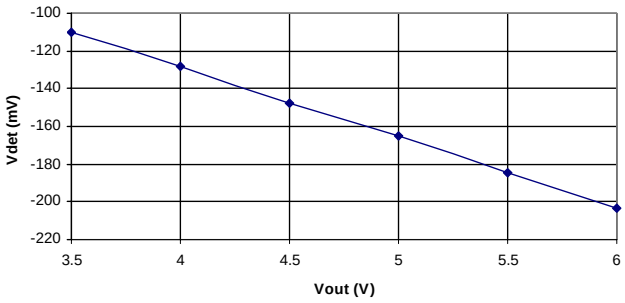
Variation of Eye Amplitude with Control Voltage



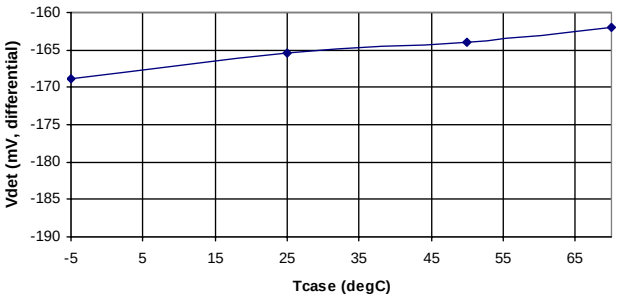
Output Amplitude vs Temperature



Detector Output (differential) vs Output Voltage

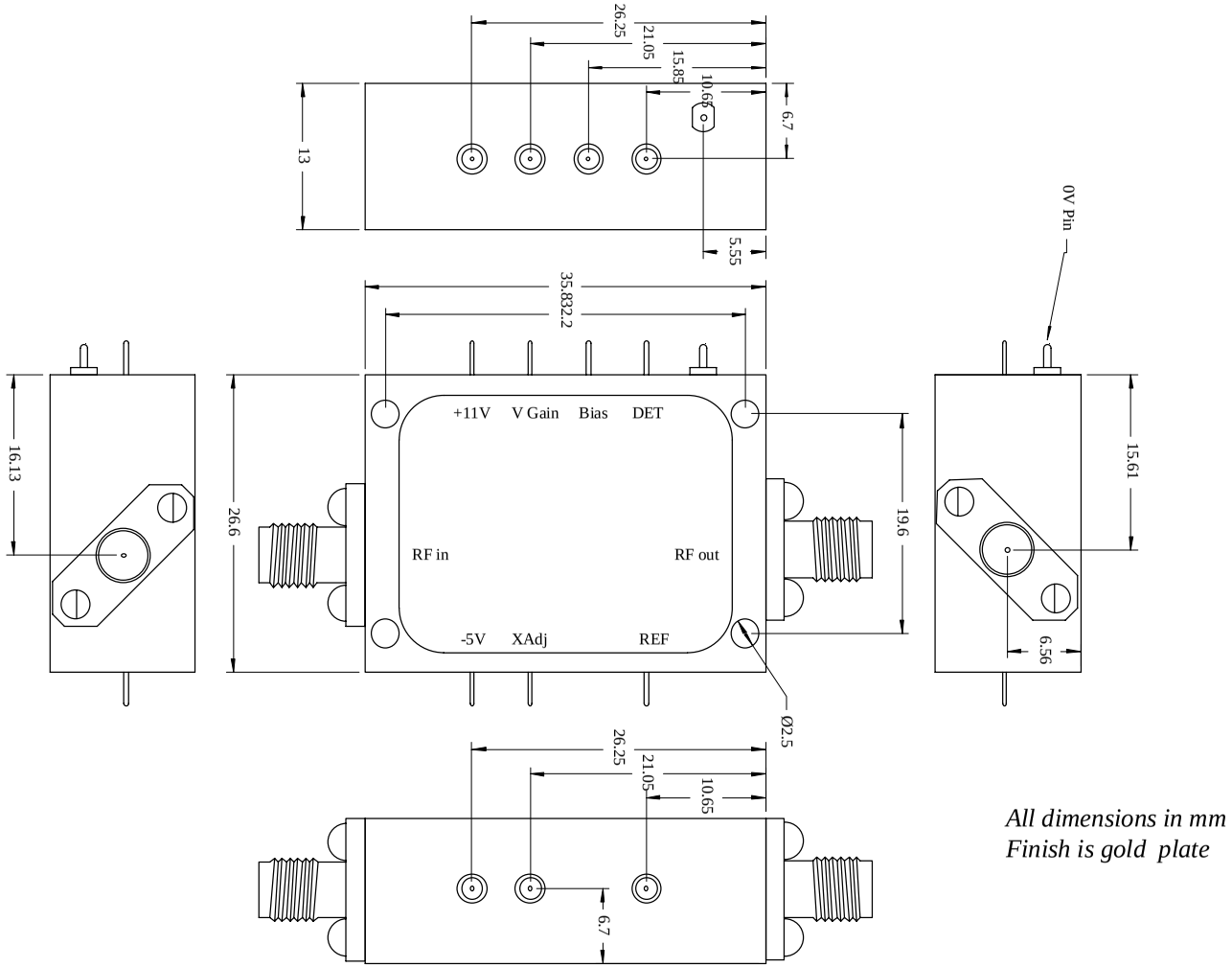


Detector Output (differential) vs Temperature (Vo set: 5V)



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^{O}C



All dimensions in mm
Finish is gold plate

Manufactured in the UK
Specification subject to change without notification

Contact

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