

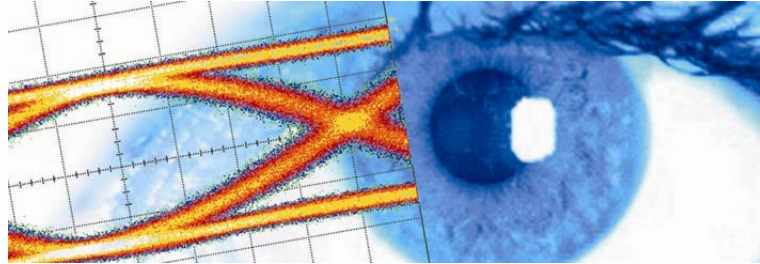


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Preliminary Datasheet

SHF 450 B

Buffer Amplifier



Description

The SHF 450B Buffer Amplifier is a limiting amplifier which operates at data rates up to 50 GBit/s and with clock signals up to 40 GHz for use in broadband test setups and telecom transmission systems. The AC-coupled differential inputs can be driven as well single ended by terminating the unused input.

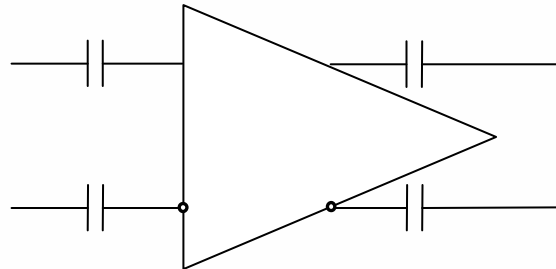
Applications

- Broadband test setups
- Telecom transmission systems prototyping

Features

- Supports data rates up to 50 GBit/s
- Supports clock frequencies up to 40 GHz
- Fast large signal rise and fall times: < 8 ps
- Low power consumption: 400 mW
- Supports single-ended and differential drive
- Output signal swing 1600 mV_{pp} differential
- Single –3.6 V power supply

Block diagram





Specifications

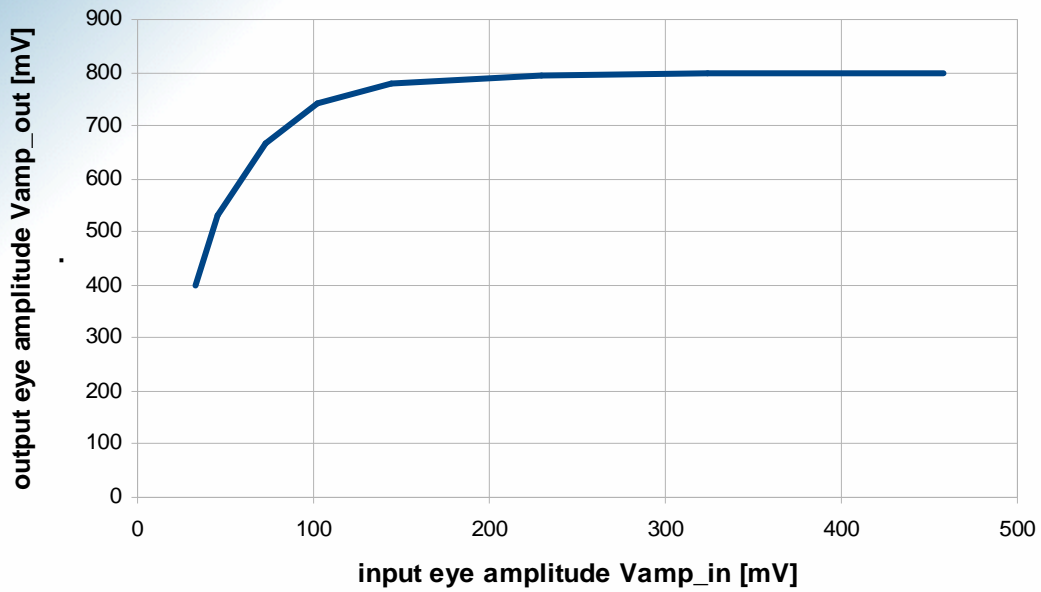
Parameter	Unit	Min.	Typ.	Max.	Conditions
Input parameters					
Data rate	GBit/s	1		50	
Eye amplitude	mV			1000	Single ended
Output parameters					
Eye amplitude	mV		800	1000	Single ended ¹
RMS Jitter	fs		700	900	Input RMS Jitter < 500 fs
Small signal gain	dB	20	23		Input amp. $V_{in_pp} < 50$ mV
Power requirements					
Negative supply voltage	V	-3.5		-5	
Negative supply current	mA		110	130	
Connectors					
Input connector					1.85 mm female
Output connector					1.85 mm female

¹ Please refer to the typical results on the following page.

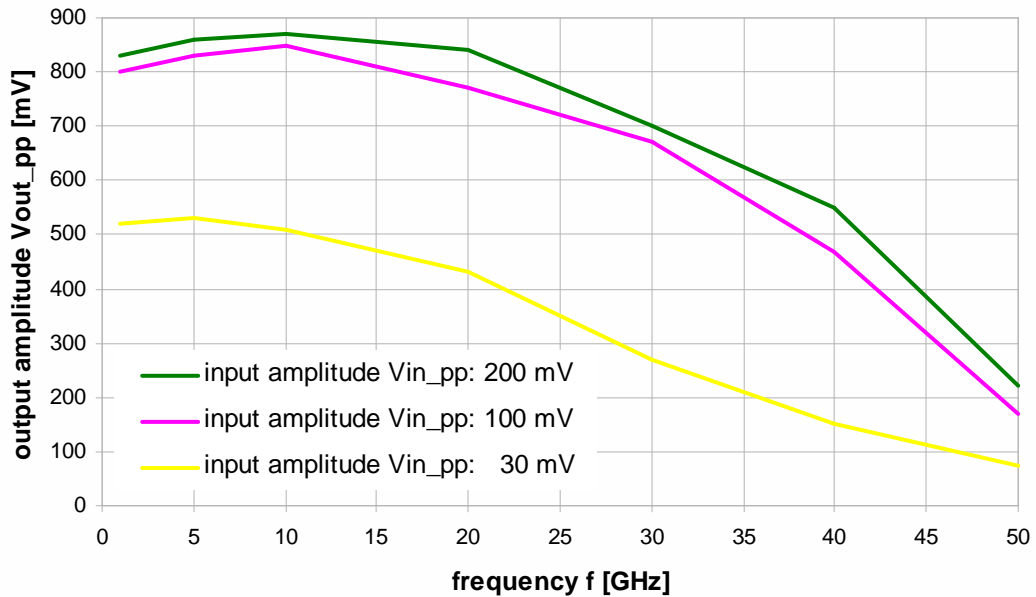


Typical Results

Compression of data signals in single ended drive

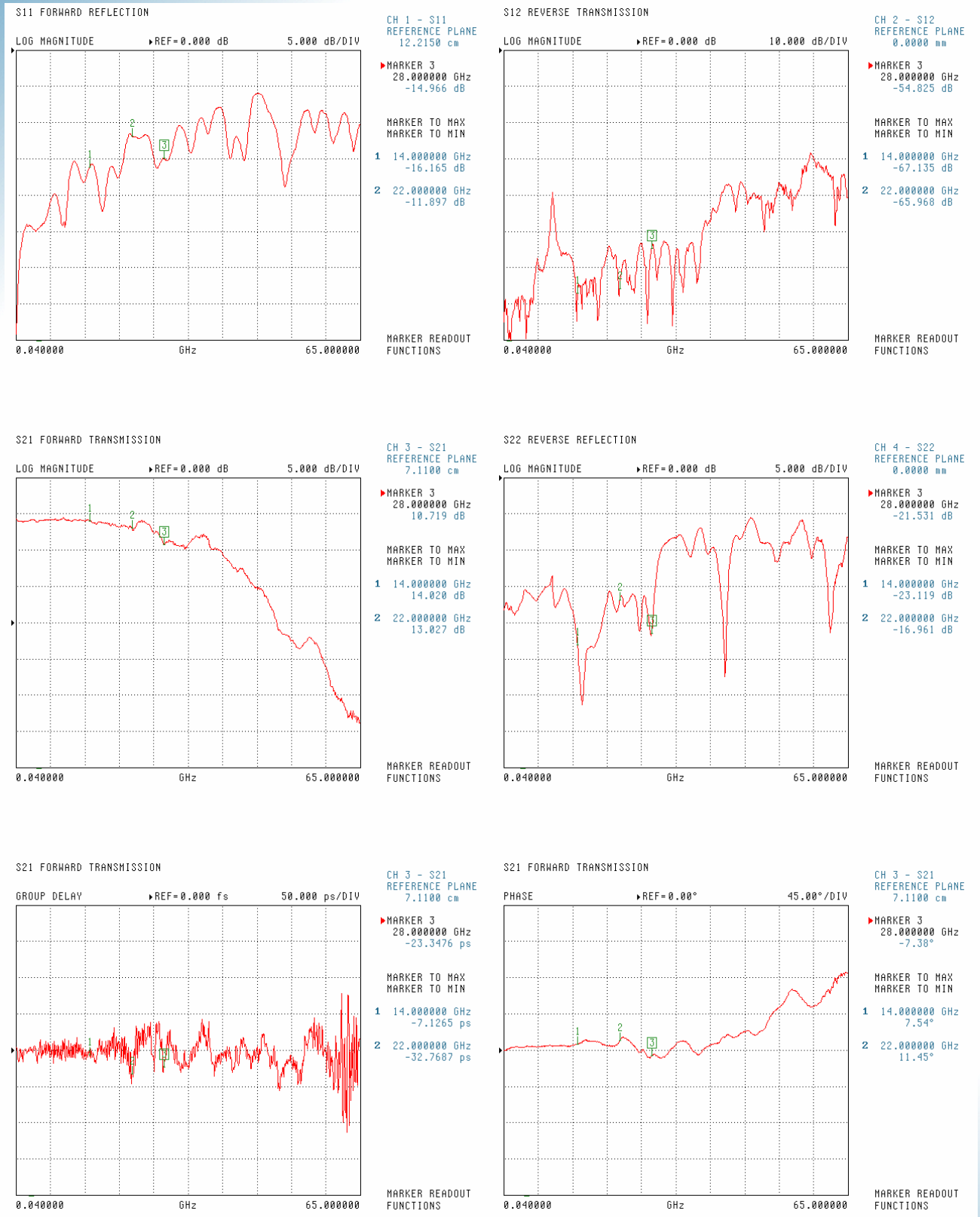


Output voltage vs. frequency in single ended drive (sinusoidal input)





S-Parameters

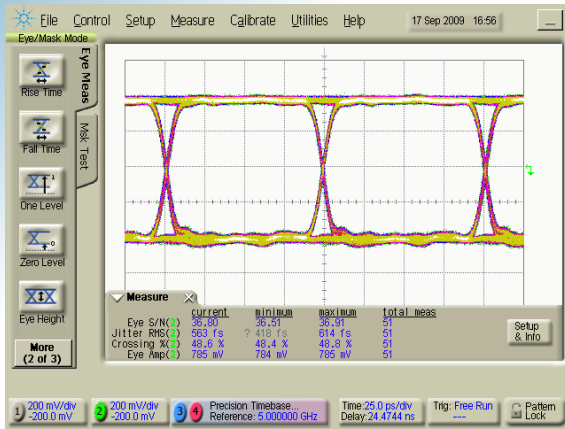


Aperture of Group Delay measurement: 105 MHz



Eye Diagrams

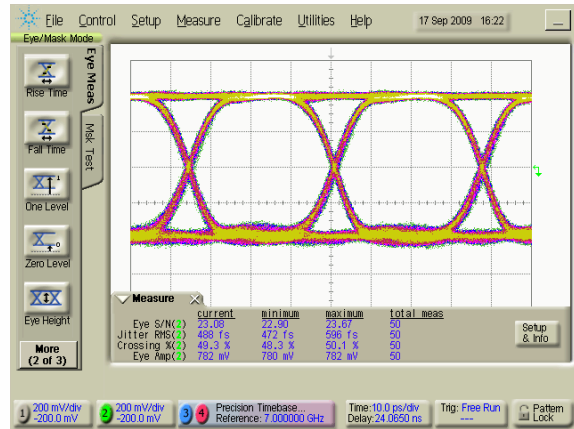
10 GBit/s



SN: 37
Jitter: 563fs

Eye Amp: 785mV
Crossing: 48.6%

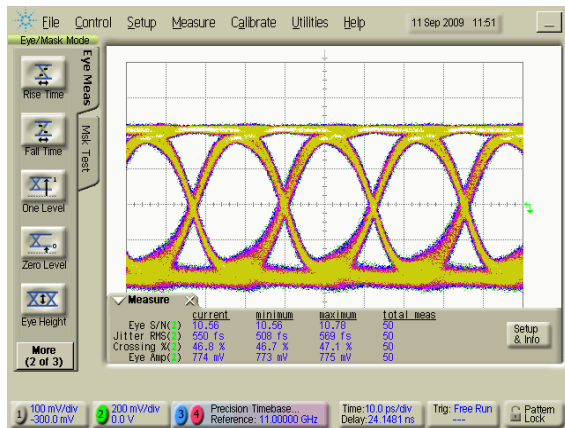
28 GBit/s



SN: 23
Jitter: 488fs

Eye Amp: 782mV
Crossing: 49.3%

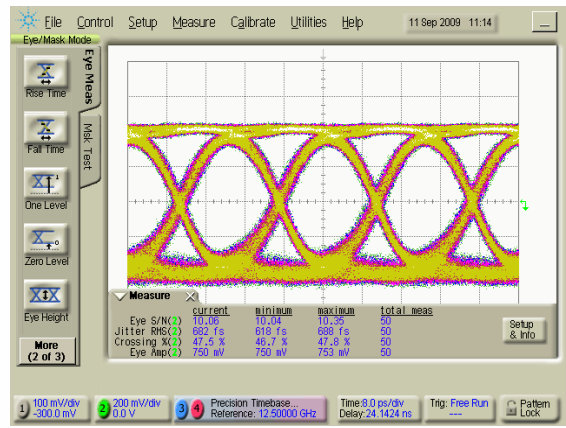
40 GBit/s



SN: 11
Jitter: 550fs

Eye Amp: 774mV
Crossing: 46.8%

50 GBit/s



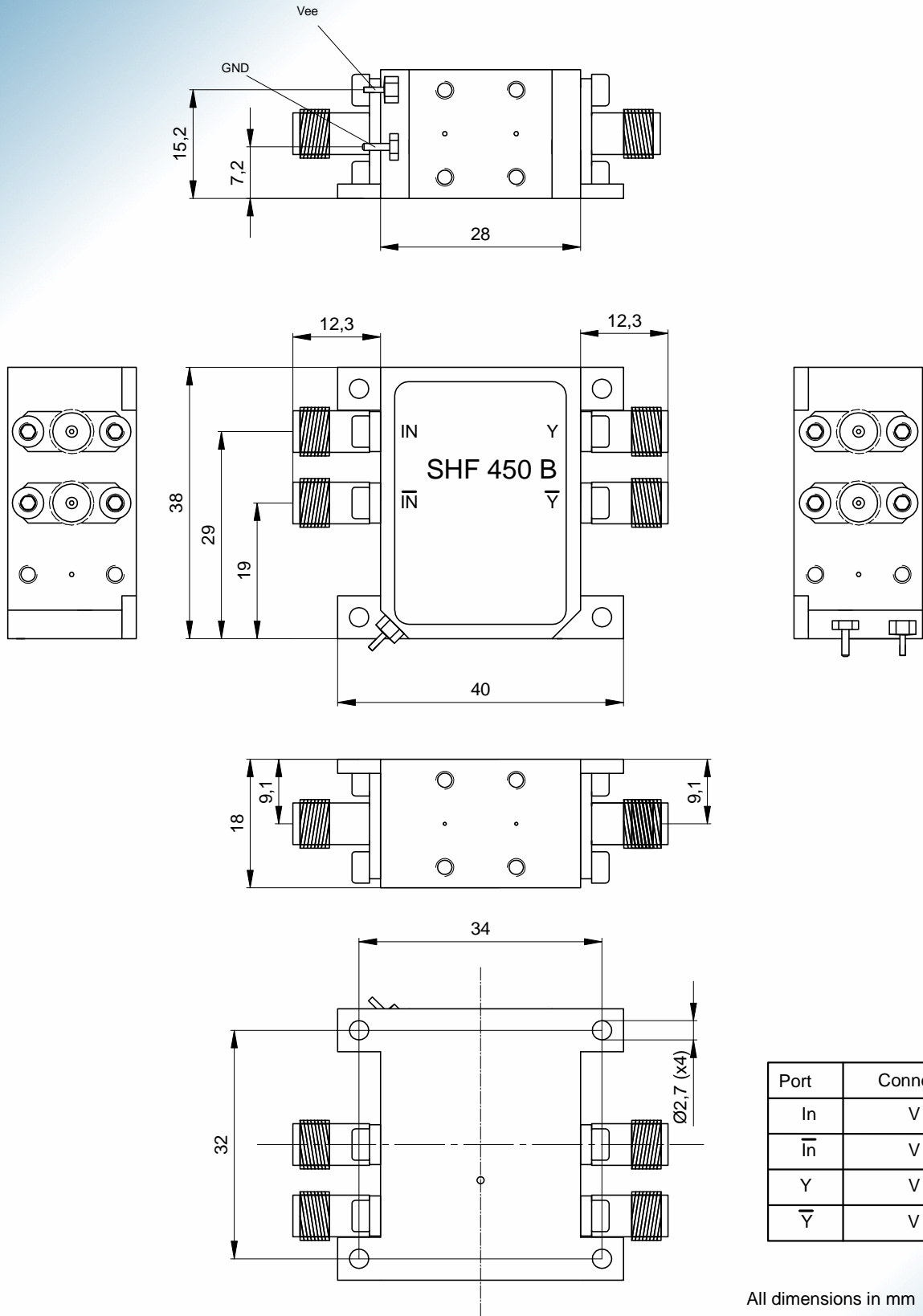
SN: 10
Jitter: 682fs

Eye Amp: 750mV
Crossing: 47.5%

Input eye amplitude: 300 mV, single ended



Mechanical drawing



All dimensions in mm