

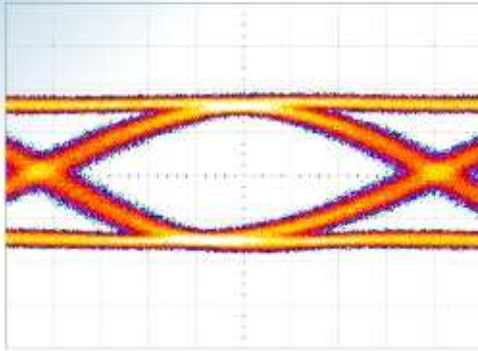


SHF Communication Technologies AG

Wilhelm-von-Siemens-Str. 23D • 12277 Berlin • Germany

Phone ++49 30 / 772 05 10 • Fax ++49 30 / 753 10 78

E-Mail: sales@shf.de • Web: <http://www.shf.de>



Datasheet

SHF 47100B

O/E Conversion Module





Description

The SHF 47100B is a module which converts optical signals with a bit rate up to 50 Gbps into electrical signals. Broadband RZ and NRZ operation is possible and the wide output dynamic range combined with excellent pulse behaviour makes the device ideal for OEM applications and optical system research. The compact design of the SHF 47100B broadband optical ASK receiver is well suited for system prototyping. Combined with the excellent output signal quality, the high conversion gain of 170 mV / mW offers very good optical sensitivity. The built-in power monitor output can be used to measure the optical input power of the receiver.

Features

- Broadband operation up to 50 Gbps
- High optical sensitivity
- Wide output dynamic range
- NRZ and RZ operation
- High output saturation suitable for 2R regeneration
- Ideal for OEM applications and optical system research
- Excellent pulse behaviour
- Unsurpassed high power handling capability
- High responsivity
- Built-in power monitor to measure the optical input power

Applications

- R&D for optical communication systems up to 50 Gbps
- Microwave photonics
- Characterization of high speed optical components

Options

- Various optical connectors at the input available on request. Please specify with the order
- The standard configuration is a single mode fiber at the input of approximately 1 m length and an FC/PC optical connector.



Specifications

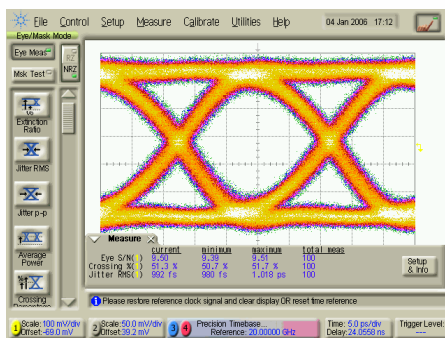
Parameter	Unit	Min.	Typ.	Max.	Conditions
Optical and Electrical					
Electrical Connector Type at the output			50 Ω		1,85 mm (V-compatible) male
Optical Connector Type at the Input					FC/PC, other types on request
Wavelength range		C and L band			
High frequency 3dB point	GHz	30			
Low frequency 3dB point	kHz			30	
Conversion gain	mV / mW	150	170		at 1550 nm
Optical return loss	dB	24	28		without optical connector
Optical PDL @ 1550 nm	dB		0.3	0.5	
Output electrical reflection (S22)	dB			-10	
Receiver sensitivity @ $2^{31}-1$ PRBS, measured at 40Gbps with BER of 10^{-9}	dBm		-7		measured with SHF 12100 BPG+ SHF 46210 TX and SHF 11100 EA
Input optical signal overload	mW			10	mean power
Output saturation voltage (peak-peak)	V		3		
Output rise and fall times (10-90 %)	ps		9		
Output timing jitter <RMS>	ps			0.8	measured on RZ signal (see below)
Power detector output conversion factor	mV / mW		400		NRZ
Absolute maximum ratings					
Optical input power	dBm			13	CW
General					
Power supply	V	5.2		10	
Supply current	A		0.3		
Power consumption	W	1.6			



Parameter	Unit	Min.	Typ.	Max.	Conditions
Operating temperature	°C	0		40	
Storage temperature	°C	-20		80	
Dimensions	mm				48x45x13.2 without connectors

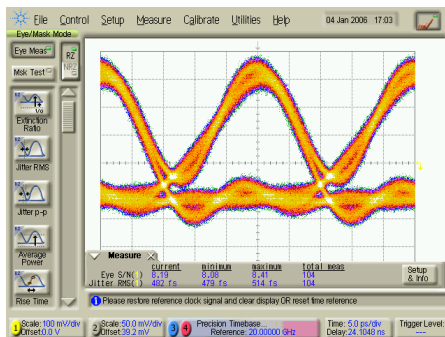
Output Waveforms

Pattern generated by SHF 12100 BPG and SHF 46210 TX to generate NRZ and RZ optical signals. Output detected by SHF 47100B and displayed on Agilent DCA 86100 A with 70 GHz sampling head. All patterns used are PRBS with a length of $2^{31}-1$.



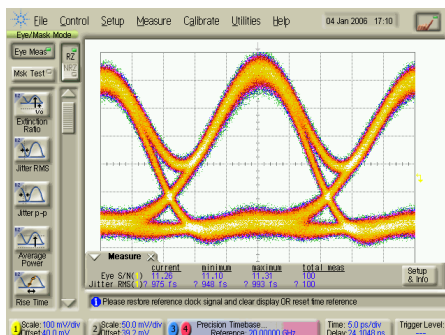
NRZ output signal

40 GBit/s , $2^{31}-1$ pattern length



RZ output signal

40 GBit/s , $2^{31}-1$ pattern length

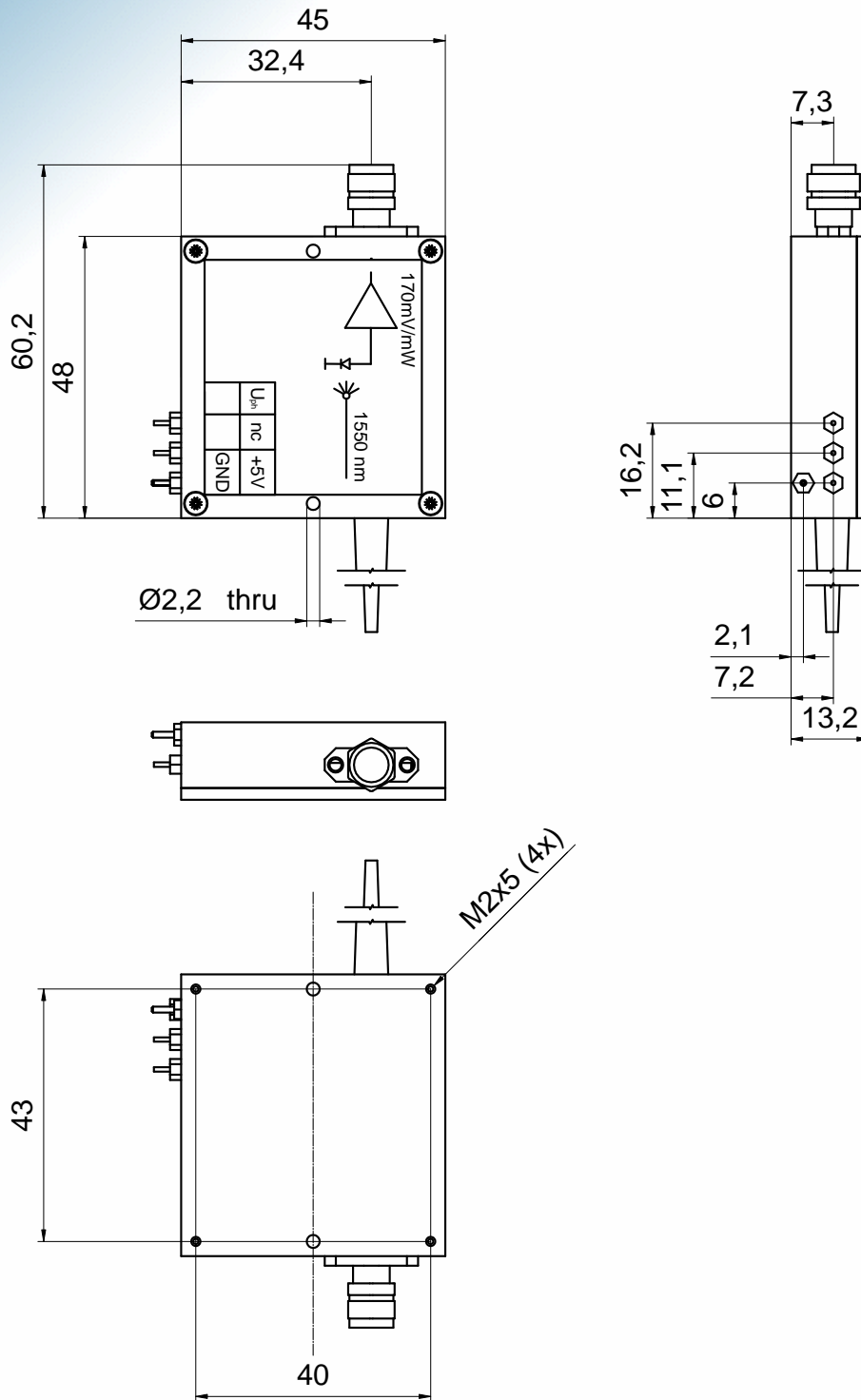


CS-RZ output signal

40 GBit/s , $2^{31}-1$ pattern length



Module Outline



All dimensions imm