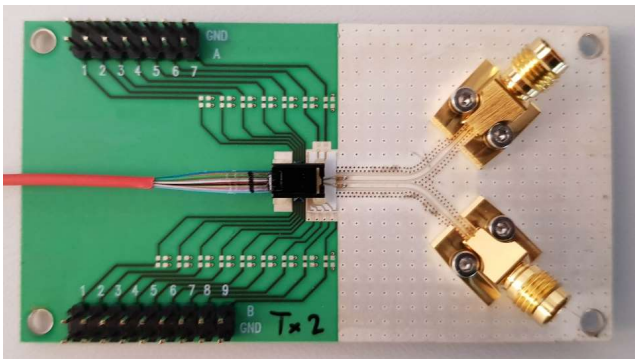
Datasheet
R56-850TB

Vertically Integrated Systems

Up to 56 Gbit/s NRZ
800-1550 nm
Single channel optical receiver

Product Code:
R56-850TB



Sample image only. Actual product may vary.

Engineering Samples
Preliminary datasheet

Product Description

The R56-850TB optical receiver module utilizes a PIN photodetector and limiting transimpedance amplifier (TIA) assembled onto a high speed adaptor board with differential electrical signal output. The multi mode fiber coupled module with FC/PC connector input is designed for short reach ultrahigh-speed data communication applications of up to 56Gbit/s using NRZ modulation.

PD version installed: **D40-SWDM-C1** High-Speed Photo-Diode (dataseet)
IC version installed: **T56-250C** High Speed TIA chip (up to 56 Gb/s NRZ) (datasheet)

Features
- Up to 56 Gbit/s (NRZ modulation)
- 50/125 um fiber coupled testboard
- 1.85 mm electrical RF connectors
- FC/PC optical connector

Applications
- CEI-56G-NRZ (XSR/USR/MR/LR)
- Proprietary optical interconnects
- Research and development

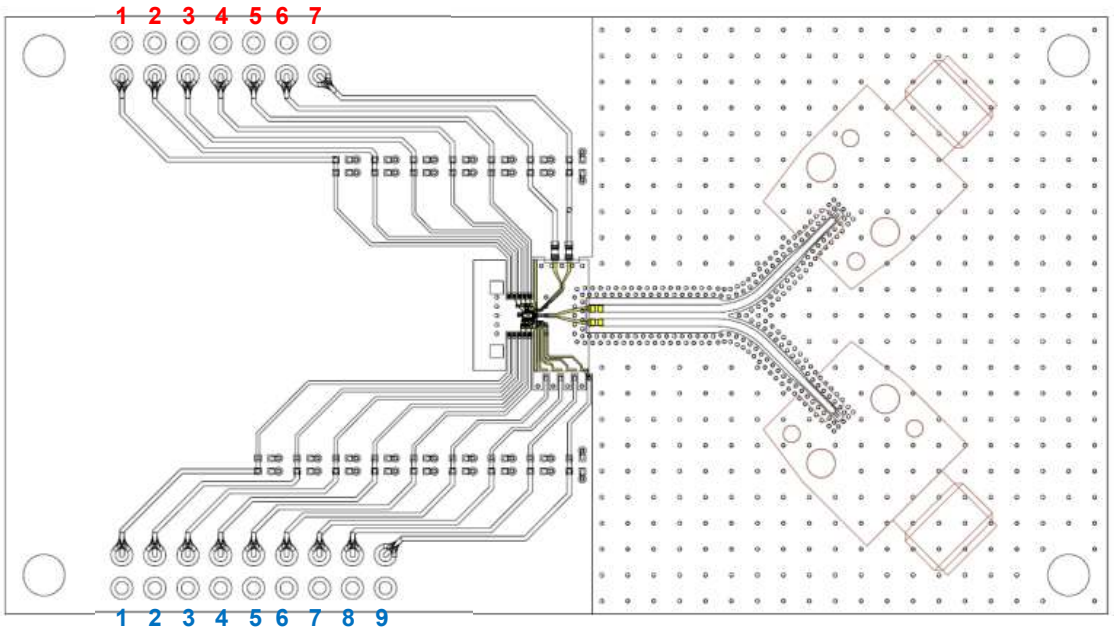
Parameter	Typical	Notes
Operating Wavelength	800 ~ 1550 nm	
Data rate	up to 56 Gbit/s	NRZ
Rise time (20% to 80%)	~ 6 ps	
Maximum power consumption	280 mW	

Electro-Optical Specifications (T = 0 to 85°C)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Wavelength responsivity	λ		800	850	1550	nm
Case operating temperature	T_{op}		-10		85	°C
Supply voltage	V_{cc}		3.3		3.4	V
Supply current	I_{cc}		34	45	61	mA
Low frequency cuttoff					70	kHz
Sensitivity (OMA)	S			-13	-12	dBm
Output resistance	R_o			100		Ω
Output voltage	V_{out}	differential		1		Vpp

PIN configuration

Pin	Name
1	Not used
2	Bias
3	NoXing
4	Mod
5	Xing
6	Not used
7	Not used
1	Not used
2	Vcc
3	BW/PE
4	Vcc
5	Vcc
6	Not used
7	Not used
8	Not used
9	Not used

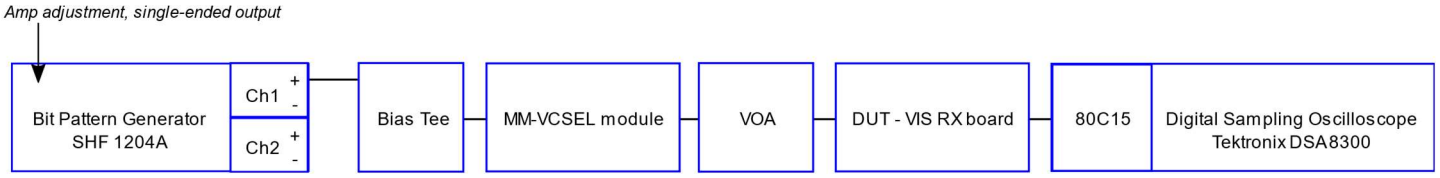


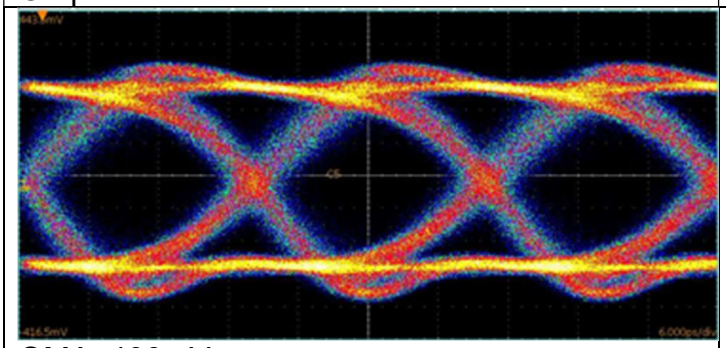
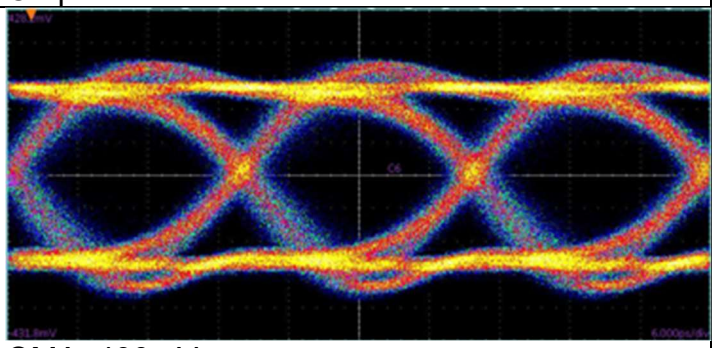
Exemplary voltages and currents:

RX version	*Vcc*	*Vmod*	*Vbias*	*Vxing*	*Vno_xing*	*Vbw*	*Input*
	2.9V (~80mA)	*2.6V (~1mA)*	*3V (~1mA)*	*1.6V (<1mA)*	*Open*	*Grounded*	*2mW*

Exemplary performance

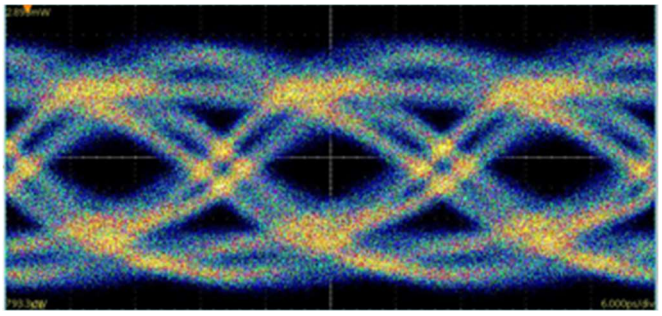
Test setup MM-VCSEL module as TX:



Output 1	Output2
	
OMA: 490mV	OMA: 490mV

Performance of the Transmitter used in the tests:

Transmitter: VIS VM100-850M
Receiver: Tektronix DSA 8300 with 80C15 32GHz optical sampling module



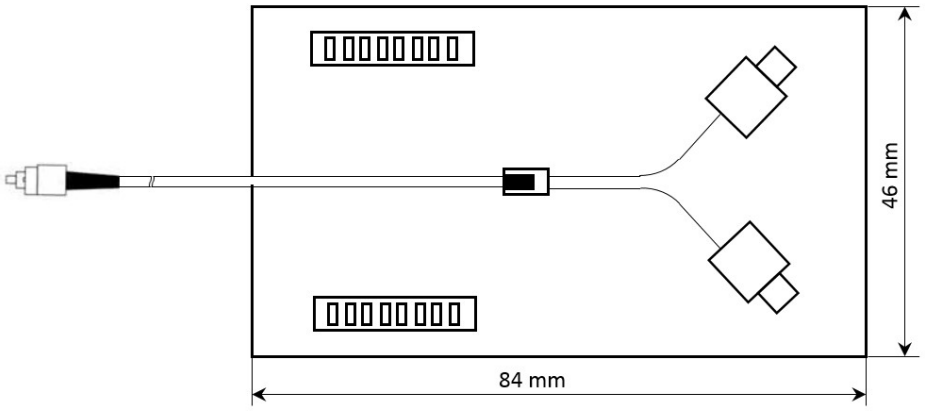
50 Gbit/s 10mA 500mVpp w/o equalization

Absolute Maximum Ratings

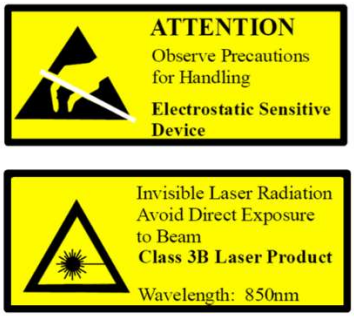
Parameter	Symbol	Condition	Min	Typ	Max	Unit
Storage temperature	T_{St}		-10		+50	°C
Incident optical power	P_{in}				+5	dBm
Power supply voltage	V_P				4.0	V

Stress in excess of any of the individual Absolute Maximum Ratings can cause immediate irreversible damage to the component even if all other parameters are within the electro-optical specifications. Exposure to any of the Absolute Maximum Ratings for extended periods can adversely affect the reliability of these chips.

Dimensions



RoHS Compliant



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