

## Up to 40 Gbit/s 850nm VCSEL Transmitter Optical Subassembly (TOSA)



Sample image only. Actual product may vary

Product Code: T40-850

## Preliminary

### Product Description

The T40-850 transmitter optical subassembly (TOSA) combines an 850nm VCSEL and an optional driver IC integrated in a TO package coupled with a 50/125  $\mu\text{m}$  multimode fiber. The T40-850nm is designed for high speed data communication applications in optical transceiver modules. The device is configured for differential drive and a controlled impedance circuit is available for optimum performance.

### Features

- 28 Gbit/s and 40Gbit/s data rate
- 50/125  $\mu\text{m}$  multimode fiber
- FC /PC optical output connector
- Differential signal input
- Anritsu V electrical connector
- small size package
- low cost design
- LC receptacle

### Applications

- 28 Gbit/s short reach transceivers
- 40G / 100G short reach transceivers
- Proprietary optical interconnects
- Research and development

Parameter	Typical (PD chips)	Notes
Emission Wavelength	850 nm	
Data rate	up to 40 Gbit/s	
Supply Voltage	3.3V	
Power consumption	130mW	

All product specifications and descriptions are subject to change without notice.

Please contact our sales department for additional information and to receive a quotation: [sales@v-i-systems.com](mailto:sales@v-i-systems.com)

### Electro-optical characteristics (at T<sub>case</sub> = 25 °C)

Preliminary

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
VCSEL						
Peak emission wavelength	$\lambda$	P <sub>out</sub> = 0.5mW	840	850	860	nm
Case operating temperature	T <sub>op</sub>		-10		85	°C
RMS spectral width	$\Delta\lambda$	P <sub>out</sub> = 0.5mW			0.4	nm
$\lambda_p$ temperature coefficient	$\Delta\lambda_p$			0.06		nm/°C
Relative intensity noise	RIN	40 Gbit/s			130	dB/Hz
Rise/Fall time	T <sub>r</sub>	P <sub>out</sub> = 0.5mW		8		psec
	T <sub>f</sub>	40 Gbit/s		9		psec
		20-80%				
Threshold current	I <sub>th</sub>			0.7		mA
I <sub>th</sub> temp variation	$\Delta I_{th}$	T = -10 °C to 85 °C		+1.0	+2.0	mA
Laser forward voltage	V <sub>f</sub>	P <sub>out</sub> = 0.5mW		2.2		V

### Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Storage temperature	T <sub>st</sub>	-40	+90	°C
Lead solder temperature	T <sub>s</sub>		260° for 10 sec	°C
Laser forward current 85°C	I <sub>F</sub>		7	mA
Laser reverse voltage	V <sub>R, RD</sub>		-2	V
ESD (Human Body Model)	T <sub>r</sub>		Class 1	

All product specifications and descriptions are subject to change without notice.

Please contact our sales department for additional information and to receive a quotation: [sales@v-i-systems.com](mailto:sales@v-i-systems.com)

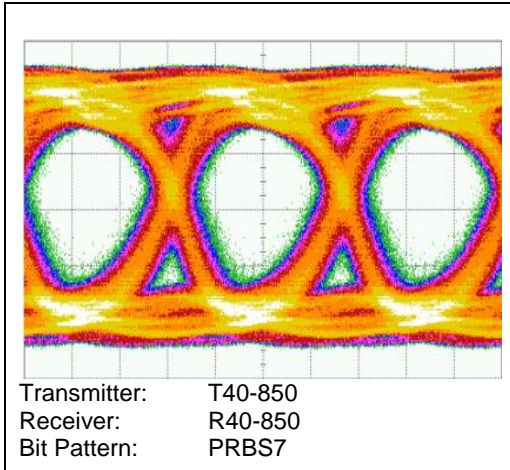
# Datasheet

## T40-850

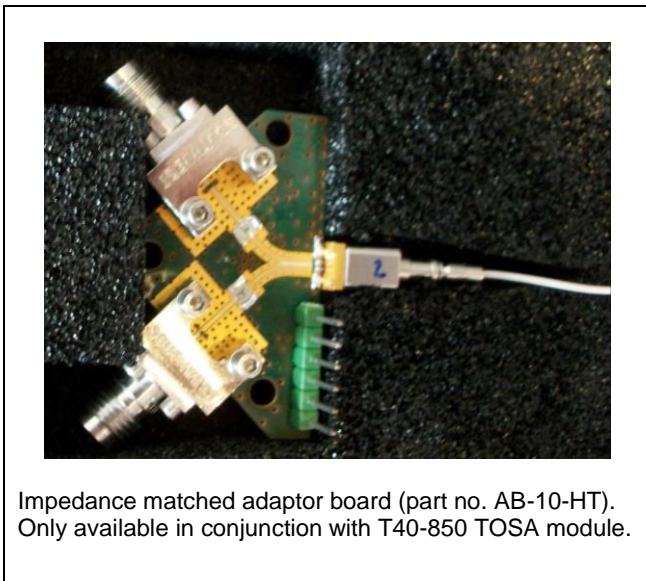


Vertically Integrated Systems

### Eye diagram at 40 Gbit/s



### Optional adaptor board



### Pin description for AB-10-HT adaptor board



Pin#	Signal	Description
1	Vcc	Power Supply for driver 3.3 V
2	--	not used
3	Xing	Crossing adjustment 0...3 V
4	Vmod	Amplitude adjustment 0...3 V
5	Vbias	Bias current control 0...3 V
6	--	not used

Ground is to be supplied by the RF connectors

All product specifications and descriptions are subject to change without notice.

Please contact our sales department for additional information and to receive a quotation: [sales@v-i-systems.com](mailto:sales@v-i-systems.com)

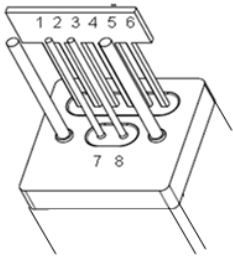
# Datasheet

## T40-850



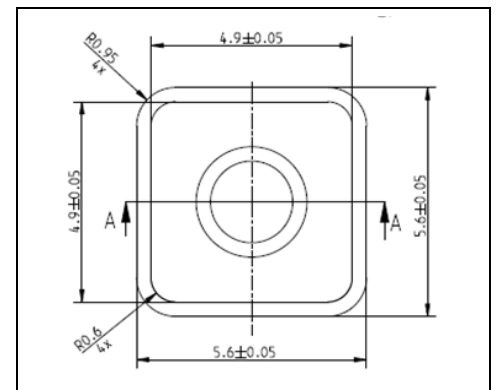
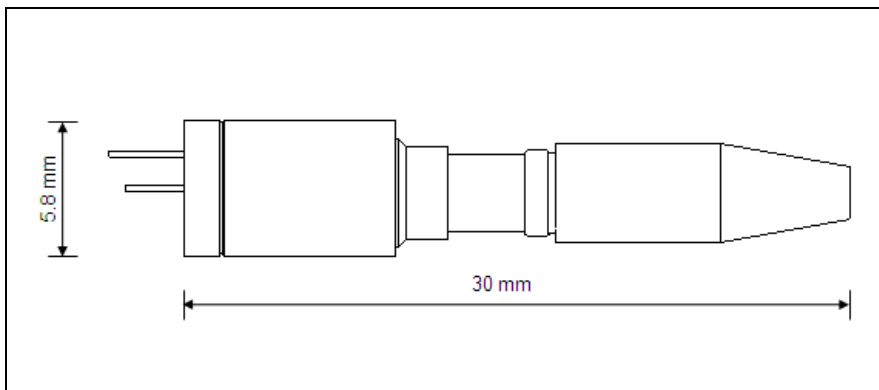
Vertically Integrated Systems

### Pin out



Pin#	Signal	Description
1	Vcc	Power Supply for driver 3.3 V
2	--	not used
3	Xing	Crossing adjustment 0...3 V
4	Vmod	Amplitude adjustment 0...3 V
5	Vbias	Bias current control 0...3 V
6	--	not used
7	IN 1	HF input (high)
8	IN 2	HF input (low)

### Dimensions



### VI Systems GmbH

Hardenbergstrasse 7  
10623 Berlin

Tel.: +49 30 3083143 30

Fax: +49 30 3083143 59

sales@v-i-systems.com

www.v-i-systems.com



www.facebook.com/VISystems

All product specifications and descriptions are subject to change without notice.

Please contact our sales department for additional information and to receive a quotation: sales@v-i-systems.com

[www.v-i-systems.com](http://www.v-i-systems.com)

VI Systems GmbH Hardenbergstrasse 7 D-10623 Berlin