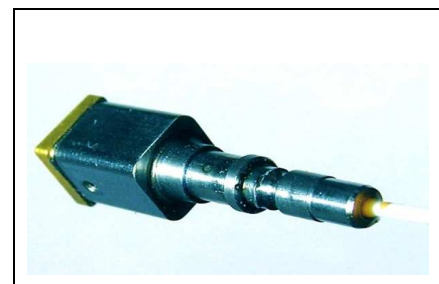


## Up to 40 Gbit/s 850nm VCSEL Transmitter Optical Subassembly (TOSA)



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	

### Electro-optical characteristics (at $T_{\text{case}} = 25\text{ }^{\circ}\text{C}$ )

Preliminary

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
VCSEL						
Peak emission wavelength	$\lambda$	$P_{\text{out}} = 0.5\text{mW}$	840	850	860	nm

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



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Case operating temperature	$T_{op}$	-10	85	°C	
RMS spectral width	$\Delta\lambda$	$P_{out} = 0.5mW$	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	$T_r$	$P_{out} = 0.5mW$	8	psec	
	$T_f$	40 Gbit/s	9	psec	
		20-80%			
Threshold current	$I_{th}$		0.7	mA	
$I_{th}$ temp variation	$\Delta I_{th}$	T = -10 °C to 85 °C	+1.0	+2.0	mA
Laser forward voltage	$V_f$	$P_{out} = 0.5mW$	2.2	V	

### Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Storage temperature	$T_{st}$	-40	+90	°C
Lead solder temperature	$T_s$		260° for 10 sec	°C
Laser forward current 85°C	$I_F$		7	mA
Laser reverse voltage	$V_{RRD}$		-2	V
ESD (Human Body Model)	$T_r$		Class 1	

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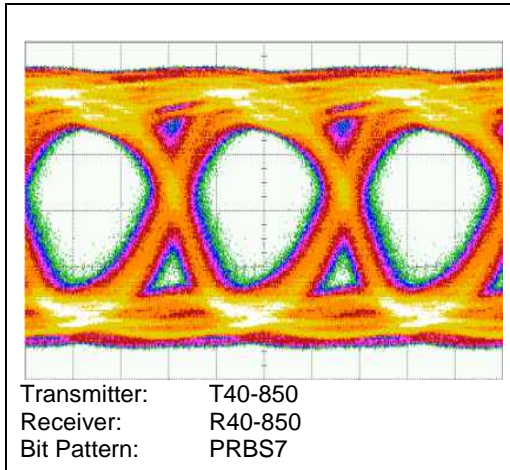
# Datasheet

## T40-850

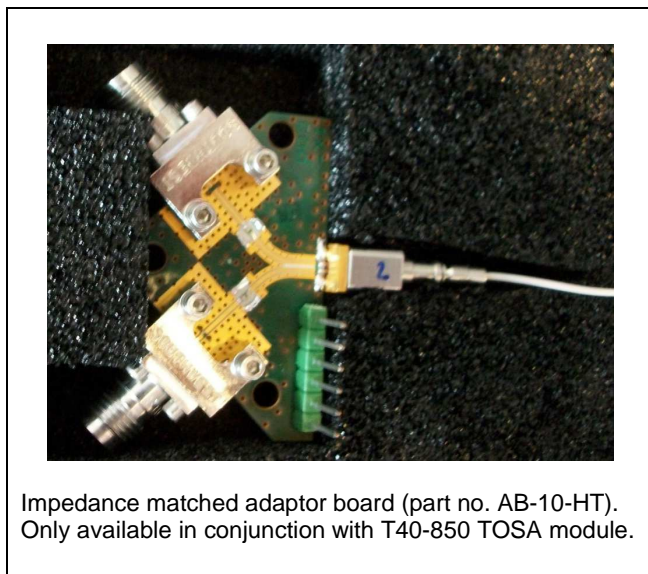


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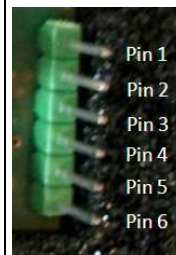
### Eye diagram at 40 Gbit/s



### 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

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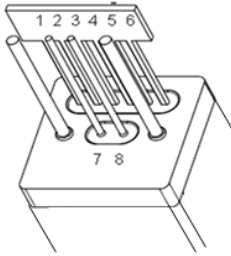
# Datasheet

## T40-850



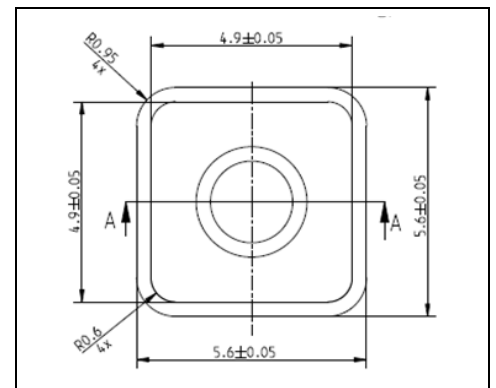
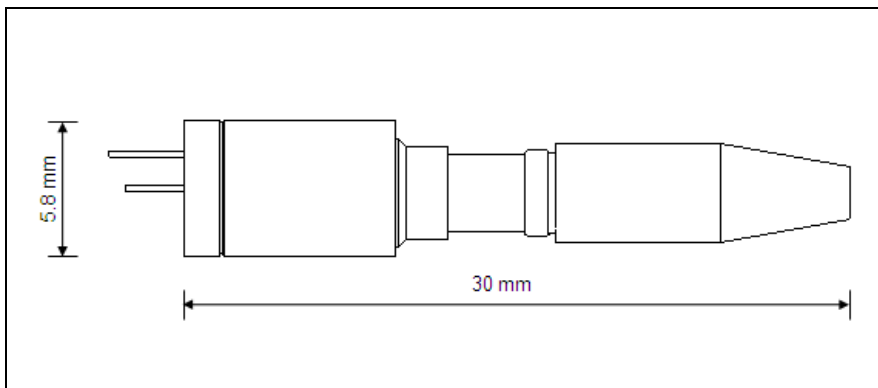
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### Pin out



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



LASER RADIATION. DO NOT VIEW  
DIRECTLY WITH OPTICAL  
INSTRUMENTS  
CLASS 1M LASER PRODUCT

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Product

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