

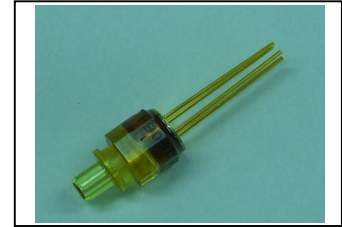


# TTR-1F43-127/-227

## Connectorized high speed VCSEL with monitor PD

### FEATURES:

- Pre-aligned LC-type receptacle for 50/125um multi-mode fiber communication.
- Design for small form factor transceivers.
- Data rate operation from DC to 2.5Gbps.
- Operation temperature range -10°C~ 85°C.
- Common cathode (-127), common anode (-227)



### ELECTRO-OPTICAL CHARACTERISTICS:

PARAMETERS	SYMBOL	MIN	TYP	MAX	UNIT	TEST CONDITIONS
Threshold Current	$I_{th}$		1.5	2.5	mA	
Forward Voltage	$V_F$	1.6	1.8	2.1	V	$I_F=6\text{ mA}$
Series Resistance	$R_s$	30	45	60	$\Omega$	$I_F=6\text{ mA}$
Slope Efficiency	$\eta$	0.05	0.08	0.12	mW/mA	$I_F=6\text{ mA}$
Wavelength	$\lambda_p$	830	850	860	nm	$I_F=6\text{ mA}^{(3)}$
Rise/Fall Time	tr/TF			0.15	ns	$I_F=6\text{ mA}$
Spectral width (RMS)	$\Delta\lambda$			0.85	nm	$I_F=6\text{ mA}$
Relative Intensity Noise	RIN		-130	-120	dB/Hz	$I@6\text{ mA}, f=1\text{ GHz}$
PD Monitor Current	$I_M$	200		800	$\mu\text{A}$	$V_R=5\text{ V}, P_{OC}=350\mu\text{W}^{(2)}$
PD Dark Current	$I_d$			20	nA	$V_r=5\text{ V}$
PD Capacitance	$C_M$		12		pF	$V_{rm}=0\text{ V}$

Notes:

1. All parameters except mentioned are measured at  $I_F=6\text{ mA}$ , 25°C, CW.

2.  $P_{oc}$ =Coupled Optical Power, be measured with a multi-mode 50/125  $\mu\text{ m}$  fiber and ambient temperature 25°C.

3. Minimum and Maximum values are valid over the entire ambient temperature range.

### THERMAL CHARACTERISTICS:

PARAMETERS	SYMBOL	MIN	TYP	MAX	UNIT	TEST CONDITIONS
$I_{th}$ Temperature Variation	$\Delta I_{th}$	-1.5		2	mA	$T_A=0\sim 70^\circ\text{C}$
$\eta$ Temperature Coefficient	$\Delta\eta/\Delta T$	-0.6	-0.25		%/°C	$T_A=0\sim 70^\circ\text{C}$ , $I_F=6\text{ mA}$
$\lambda_p$ Temperature Coefficient	$\Delta\lambda_p/\Delta T$		0.06		nm/°C	$T_A=0\sim 70^\circ\text{C}$ , $I_F=6\text{ mA}$

### ABSOLUTE MAXIMUM RATINGS:

PARAMETERS	MIN	MAX	UNIT	TEST CONDITIONS
Storage Temperature	-40	100	°C	
Operating Temperature	-10	85	°C	
Lead Solder Temperature		260	°C	10 seconds
Continuous Forward Current		20	mA	
Continuous Reverse Voltage		10	V	

#### Contact

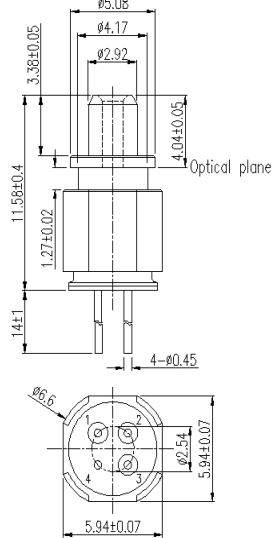
210 Sylvan Ave, Suite 25  
 Englewood Cliffs, NJ 07632  
 201-296-0145 / [info@vitextech.com](mailto:info@vitextech.com) / [www.vitextech.com](http://www.vitextech.com)



Rev 4.00  
 Vitex LLC reserves the right to make changes due to the improvement of process and package technology

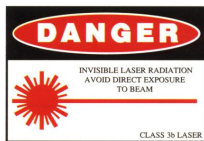
## OUTLINE DIMENSIONS:

• Unit: mm



## Pinout:

Pin Number	TTR-1F43-127	TTR-1F43-227
	Function	Function
1	VCSEL Anode	VCSEL Cathode
2	VCSEL Cathode/ PD Anode	VCSEL Anode/ PD Cathode
3	PD Cathode	PD Anode
4	Case	Case



## WARNING:

The VCSEL is a class 1M laser in the safety standard ANSI Z136.1 and should be treated as a potential eye hazard.

## Contact

210 Sylvan Ave, Suite 25  
 Englewood Cliffs, NJ 07632  
 201-296-0145 / [info@vitextech.com](mailto:info@vitextech.com) / [www.vitextech.com](http://www.vitextech.com)