

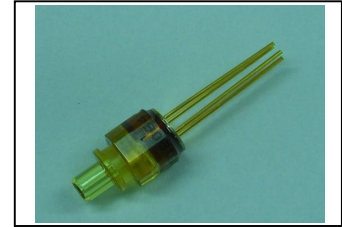


TTR-1F43-127/-227

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 | Ω | $I_F=6\text{ mA}$ |
| Slope Efficiency | η | 0.05 | 0.08 | 0.12 | mW/mA | $I_F=6\text{ mA}$ |
| Wavelength | λ_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 | μA | $V_R=5\text{ V}, P_{OC}=350\mu\text{W}^{(2)}$ |
| 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 | ΔI_{th} | -1.5 | | 2 | mA | $T_A=0\sim 70^\circ\text{C}$ |
| η Temperature Coefficient | $\Delta\eta/\Delta T$ | -0.6 | -0.25 | | %/°C | $T_A=0\sim 70^\circ\text{C}, I_F=6\text{ mA}$ |
| λ_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

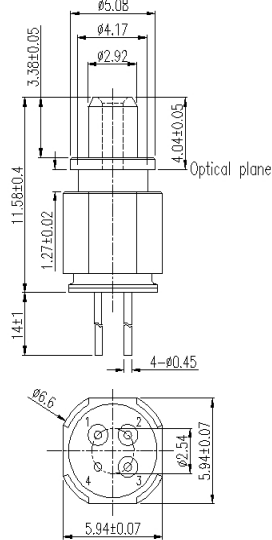
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Rev 4.00
 Vitex LLC reserves the right to make changes due to the improvement of process and package technology

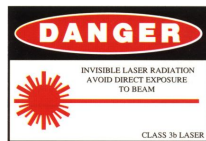
OUTLINE DIMENSIONS:

• 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

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