

TTR-1D43-148/-248

Connectorized high speed VCSEL with monitor PD

FEATURES:

- Pre-aligned SC-type receptacle for 50/125um multi-mode fiber communication.
- Data rate operation from DC to 2.5Gbps.
- Wide Operation temperature range -40°C ~ 85°C.
- Common cathode(-148), common anode(-248).



ELECTRO-OPTICAL CHARACTERISTICS:

PARAMETERS	SYMBOL	MIN	TYP	MAX	UNIT	TEST CONDITIONS
Threshold Current	I_{th}		1.5	2.75	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 μm fiber and ambient temperature 25°C.

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

THERMAL CHARACTERISTICS:

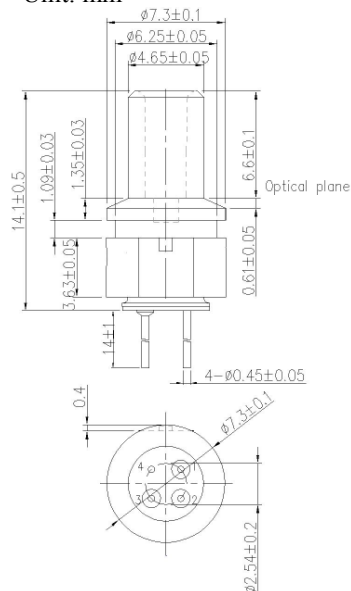
PARAMETERS	SYMBOL	MIN	TYP	MAX	UNIT	TEST CONDITIONS
I_{th} Temperature Variation	ΔI_{th}			2.0	mA	$T_A=0\sim 70^\circ\text{C}$
				2.0		$T_A=25\sim 85^\circ\text{C}$
			-0.6			$T_A=-40\sim 25^\circ\text{C}$
η Temperature Coefficient	$\Delta\eta/\Delta T$	-0.7	-0.5		%/°C	$T_A=25\sim 85^\circ\text{C}$
				0.35		$T_A=-40\sim 25^\circ\text{C}$
Series Resistance	R_s			65	Ω	$T_A=-40^\circ\text{C}, I_F=6\text{ mA}$
		30				$T_A=85^\circ\text{C}, I_F=6\text{ mA}$
PD Monitor Current Coefficient	ΔI_m			0.15	%/°C	$T_A=25\sim 85^\circ\text{C}$
				-0.15		$T_A=-40\sim 25^\circ\text{C}$
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	-40	85	°C	
Lead Solder Temperature		260	°C	10 seconds
Continuous Forward Current		20	mA	
Continuous Reverse Voltage		10	V	

OUTLINE DIMENSIONS:

• Unit: mm

**Pinout:**

Pin Number	TTR-1D43-148	TTR-1D43-248
	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.