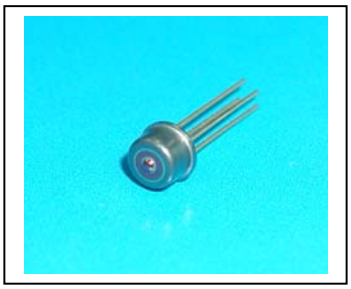
TMC-5A41-147/-247

High speed VCSEL TO-46 metal can with monitor PD



FEATURES:

- Industry TO-46 package of cap lens for multi-mode fiber communication.
- Packaged with attenuating coating and monitoring PD.
- High coupling efficiency for multi-mode fibers.
- High performance of noise and jitter characteristics.
- Design for 1.25/2.5Gbps data rate operation.
- Wide operation temperature range -40℃~85℃
- Common cathode (-147) or common anode (-247).

ELECTRO-OPTICAL CHARACTERISTICS:

PARAMETERS	SYMBOL	MIN	TYP	MAX	UNIT	TEST CONDITIONS(1)
Threshold Current	I_{th}		2	2.75	mA	
Slope Efficiency	η	0.08	0.12	0.16	mW/mA	I_F=6 mA
Wavelength	λ_P	830	850	860	nm	I_F=6 mA(2)
Forward Voltage	V_F	1.6	1.8	2.1	V	I_F=6 mA
Rise Time(20%~80%)	Tr		0.10	0.15	ns	Ibias=6mA
Fall Time(20%~80%)	Tf		0.13	0.15	ns	Ibias=6mA
Series Resistance	R_S	30	45	60	Ω	I_F =6 mA
Spectral width (RMS)	$\Delta\lambda$			0.85	nm	I_F =6 mA
Relative Intensity Noise	RIN		-130	-122	dB/Hz	I_F =6 mA, f=1 GHz
Monitor Current	I_M	200		800	uA	P_o=500 μW
PD Capacitance	C_{PD}		6	10	pF	V_R=3V @1MHz

Notes:
1. All parameters except mentioned are measured at I_F=6 mA, 25°C, CW.
2. Minimum and Maximum values are valid over the entire ambient temperature range.

THERMAL CHARACTERISTICS:

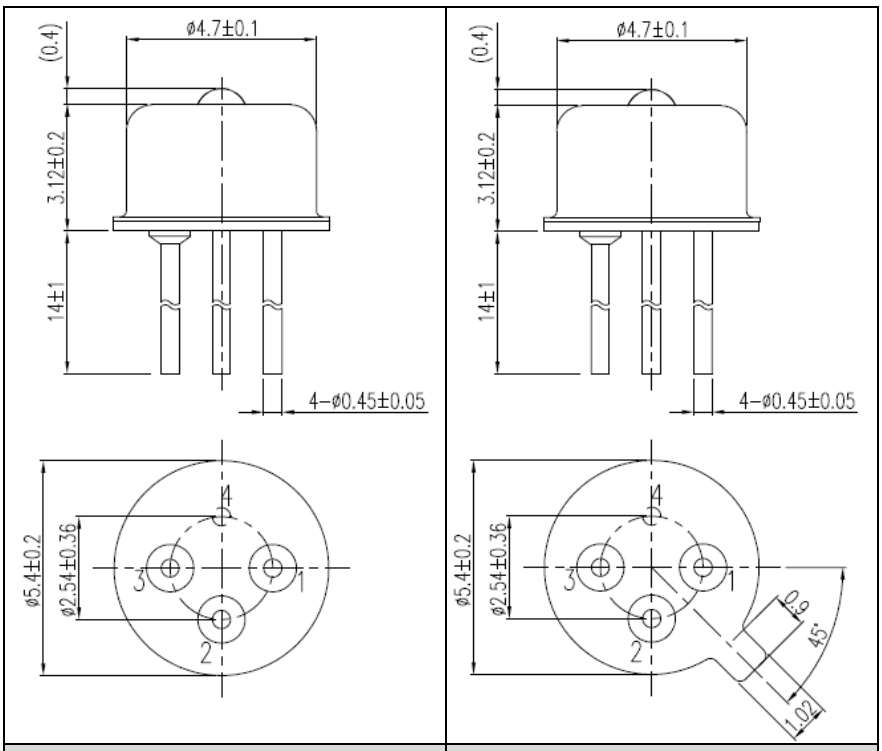
PARAMETERS	SYMBOL	MIN	TYP	MAX	UNIT	TEST CONDITIONS
I_{th} Temperature Variation	ΔI_{th}			2.0	mA	T_A=0~70°C
	ΔI_{th}		0.6		mA	T_A=-40~25°C
	ΔI_{th}			1.5	mA	T_A=25~85°C
V_F Temperature Coefficient	$\Delta V_F/\Delta T$		-2.5		mV/°C	T_A=0~70°C, I_F=6 mA
η Temperature Coefficient	$\Delta\eta/\Delta T$	-0.6			%/°C	T_A=0~70°C, I_F=6 mA
λ_P Temperature Coefficient	$\Delta\lambda_P/\Delta T$		0.06		nm/°C	T_A=0~70°C, I_F=6 mA

ABSOLUTE MAXIMUM RATINGS:

PARAMETERS	MIN	MAX	UNIT	CONDITIONS
Storage Temperature	-40	125	°C	
Operating Temperature	-40	85	°C	
Lead Solder Temperature		260	°C	10 seconds
Continuous Forward Current		12	mA	
Continuous Reverse Voltage		5	V	10 uA

OUTLINE DIMENSIONS:

(unit: mm)



TMC-5A41-147		TMC-5A41-247	
Number	**Function**	**Number**	**Function**
1	**VCSEL Anode**	**1**	**VCSEL Cathode**
2	**VCSEL Cathode/ PD Anode**	**2**	**VCSEL Anode/ PD Cathode**
3	**PD Cathode**	**3**	**PD Anode**
4	**Case**	**4**	**Case**

The VCSEL is a class 1 laser in the safety standard IEC60825-1:2014.