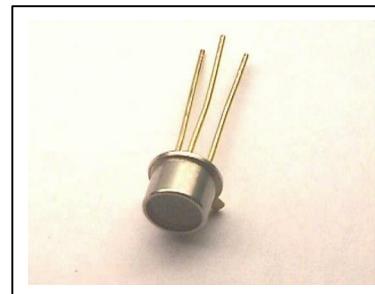


TMC-4F30-XXX

VCSEL TO-46 metal can for general purpose

FEATURES:

- Industry standard TO-46 package with flat window glass.
- Low dependence of power output over temperature.
- Symmetrical beam.
- Packaged with a photodiode.
- Cost-effective laser light source.



ELECTRO-OPTICAL CHARACTERISTICS:

PARAMETERS	SYMBOL	MIN	TYP	MAX	UNIT	TEST CONDITIONS ⁽¹⁾
Threshold Current	I _{th}		5	10	mA	
Output Power	P _o	1	2	4	mW	I _F =15 mA ⁽²⁾
Operating Current	I _{OP}		12		mA	Adjustable to establish 1.5 mW output power
Slope Efficiency	η		0.20		mW/mA	I _F =15 mA ⁽³⁾
Wavelength	λ _P	820	850	870	nm	I _F =15 mA
Forward Voltage	V _F	2.0	2.2	2.5	V	I _F =15 mA
Breakdown voltage	V _{BD}	10	15		V	I _R =10 μA
Series Resistance	R _S		40		Ω	I _F =15 mA
Monitor Current	I _M	1	2		uA	V _R =5 V, P _o = 1.5 mW
Beam Divergence	θ		8		degree	I _F =15 mA ⁽⁴⁾

Notes:

- All parameters except mentioned are measured at I_F=15 mA, 25°C, CW.
- Higher power can be provided under request.
- Slope efficiency is defined as ΔP/(15-I_{th}) at 25°C.
- Beam divergence is defined as the angle of light intensity at Full Width at Half Maximum (FWHM).

THERMAL CHARACTERISTICS:

PARAMETERS	SYMBOL	MIN	TYP	MAX	UNIT	TEST CONDITIONS
Thermal Resistance	R _{th}		900		°C/W	T _A =25°C
I _{th} Temperature Variation	ΔI _{th}	-1.5		1.5	mA	T _A =0~70°C
V _F Temperature Coefficient	ΔV _F /ΔT		-3.0		mV/°C	T _A =0~70°C, I _F =15 mA
Temperature Coefficient	Δη/ΔT		-0.20		%/°C	T _A =0~70°C, I _F =15 mA
P Temperature Coefficient	Δλ _P /ΔT		0.06		nm/°C	T _A =0~70°C, I _F =15 mA

ABSOLUTE MAXIMUM RATINGS:

PARAMETERS	MIN	MAX	UNIT	CONDITIONS
Storage Temperature	-40	125		
Operating Temperature	-20	85		
Lead Solder Temperature		260		5 seconds
Continuous Forward Current		40	mA	
Continuous Reverse Voltage		10	V	

Fig. 1 Typical Optical Characteristics

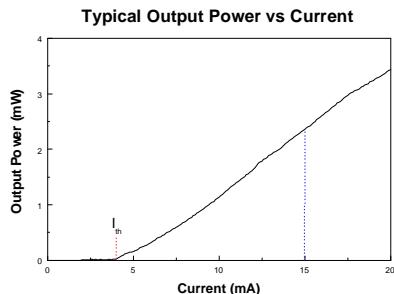


Fig. 2 Typical Electrical Characteristics

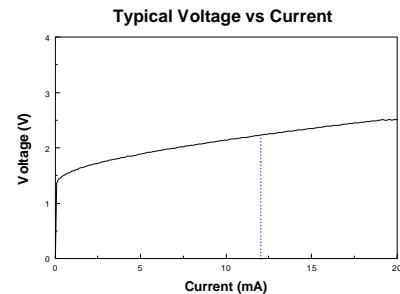
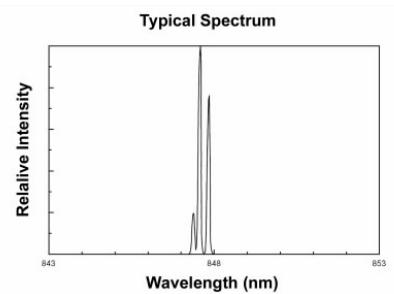
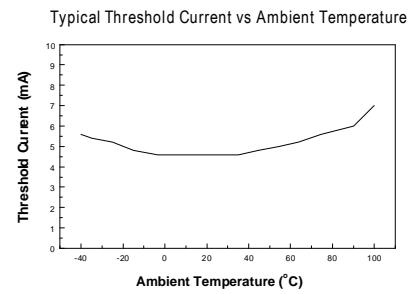


Fig. 3 Spectrum When Driving Current 15 mA



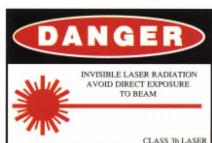
3 transverse modes typically.

Fig. 4 Temperature Dependence of Threshold Current



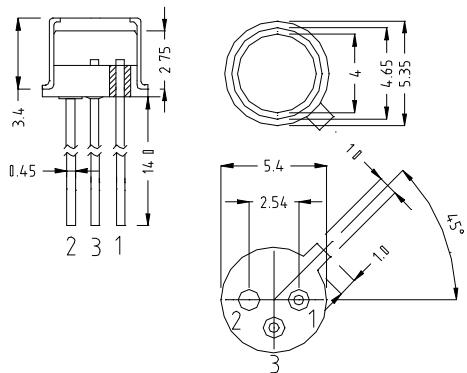
WARNING:

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

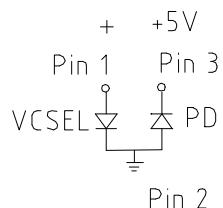


OUTLINE DIMENSIONS:

- Unit: mm



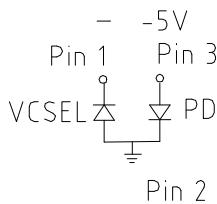
- PINOUT:

TMC-4F30-801

Pin 1: VCSEL Anode

Pin 2: VCSEL Cathode
PD Anode
Case

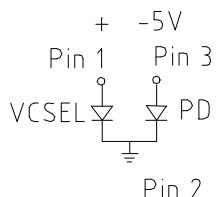
Pin 3: PD Cathode

TMC-4F30-802

Pin 1: VCSEL Cathode

Pin 2: VCSEL Anode
PD Cathode
Case

Pin 3: PD Anode

TMC-4F30-803

Pin 1: VCSEL Anode

Pin 2: VCSEL Cathode
PD Cathode
Case

Pin 3: PD Anode