



# VCT-F79A61-SPL

## 795nm Single Mode Polarization-Stabilized VCSEL in TO-46

Data Sheet

### Features

- 795nm VCSEL diode
- Single mode polarization-stabilized
- Internal TEC and thermistor
- Narrow spectral linewidth
- TO-46 can package

### Applications

- Optical pumping of atomic clocks
- Rubidium spectroscopy
- Optical sensors

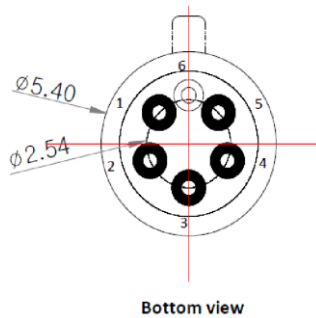
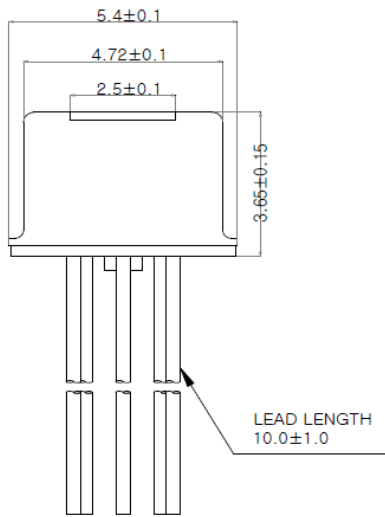
### Absolute Maximum Ratings

Parameters	Min.	Max.	Unit	Conditions
Storage Temperature	-40	125	°C	
Operating Temperature	0	100	°C	
Lead Solder Temperature		260	°C	10 sec
VCSEL Forward Current		5.0	mA	
VCSEL Reverse Voltage		5	V	@10uA
Maximum TEC Current		0.8	A	
Maximum TEC Voltage		0.6	V	
Maximum TEC Heat Load		0.29	W	
Maximum $\Delta T$ across the TEC		60	°C	

### Electro-Optical Characteristics ( $T_a=70\pm 5^\circ\text{C}$ unless otherwise stated)

Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
Threshold Current	$I_{th}$		3		mA	
Slope Efficiency	$\eta$		0.3		mW/mA	
Optical Output Power	$P_o$		0.4		mW	$I_f=4\text{mA}$
Peak Wavelength	$\lambda_P$	794		795	nm	$I_f=4\text{mA}$
$\lambda$ Temperature Coefficient	$\Delta\lambda/\Delta T$		0.055		nm/°C	
Forward Voltage	$V_F$		1.8		V	$I_f=4\text{mA}$
Operating Current	$I_f$		3.5	4.0	mA	
Side Mode Suppression Ratio	SMSR	25			dB	$I_f=3.5\text{mA}$ , Room Temp
Beam Divergence	$\Theta_{1/e^2}$		13	16	°	$I_f=3.5\text{mA}$ , Room Temp
Polarization Extinction Ratio	PER		15		dB	$I_f=3.5\text{mA}$ , Room Temp
Accuracy of Polarization Direction	$\delta_{pol}$	-15		15	°	
Spectral Linewidth	$\Delta\lambda$		100		MHz	Room Temp
Breakdown Voltage	$V_B$		-10		V	Room Temp
TEC Current		-0.5		0.5	A	
TEC Voltage		-0.4		0.4	V	
TEC Power Consumption				0.17	W	
Thermistor Resistance	$R_{therm}$		10		k $\Omega$	Room Temp
Beta Value of Thermistor	$\beta$		3430		K	

**Outline Dimensions (unit: mm)**



**Pin Configuration**

Pin Number	Function
1	VCSEL Cathode & TRs
2	TEC(-)
3	VCSEL Anode
4	TEC(+)
5	TRs
6	GND

**Additional Notes**

- The inherent design of this component causes it to be sensitive to electrostatic discharge (ESD). To prevent ESD-induced damage and/or degradation to equipment, take normal ESD precautions when handling this product.
- Specifications are subject to change without notice.