



VCT-F89A61-SPL

895nm Single Mode Polarization-Stabilized VCSEL in TO-46

Data Sheet

Features

- 895nm VCSEL diode
- Single mode polarization-stabilized
- Internal TEC and thermistor
- Narrow spectral linewidth
- Flat window type TO-46 can package

Applications

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

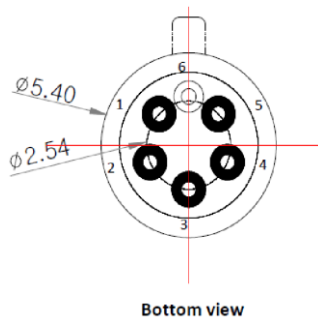
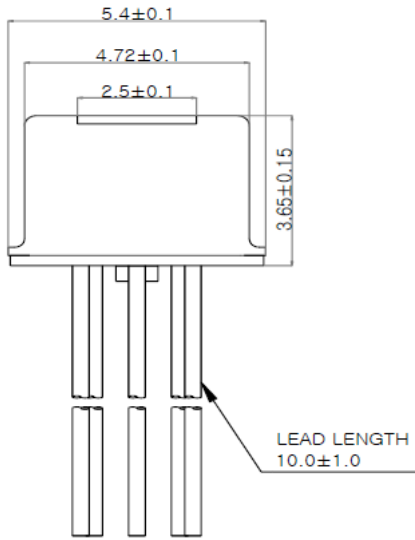
Absolute Maximum Ratings

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		6	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 ΔT across the TEC		60	°C	

Electro-Optical Characteristics ($T_a=80\pm 5^\circ\text{C}$ unless otherwise stated)

Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
Threshold Current	I_{th}	3			mA	
Slope Efficiency	η		0.3		mW/mA	
Optical Output Power	P_o		0.3		mW	$I_f=4\text{mA}$
Peak Wavelength	λ_P	894		895	nm	$I_f=4\sim 5\text{mA}$
λ Temperature Coefficient	$\Delta\lambda/\Delta T$		0.06		nm/°C	
Forward Voltage	V_F		1.8		V	$I_f=4\text{mA}$
Operating Current	I_f	3		5	mA	
Side Mode Suppression Ratio	SMSR	25			dB	$I_f=4\text{mA}$, Room Temp
Beam Divergence	Θ_{1/e^2}		14	16	°	$I_f=4\text{mA}$, Room Temp
Polarization Extinction Ratio	PER		15		dB	$I_f=4\text{mA}$, Room Temp
Accuracy of Polarization Direction	δ_{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 Ω	Room Temp
Beta Value of Thermistor	β		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.