

Features

- : 895 nm wavelength range
- : Single-mode polarization-stabilized VCSEL
- : Internal TEC and thermistor
- : Narrow Spectral Linewidth
- : Other configurations available on request

Description



Applications

- : Optical pumping of atomic clocks
- : Cesium Spectroscopy
- : Optical Sensors

Absolute Maximum Ratings

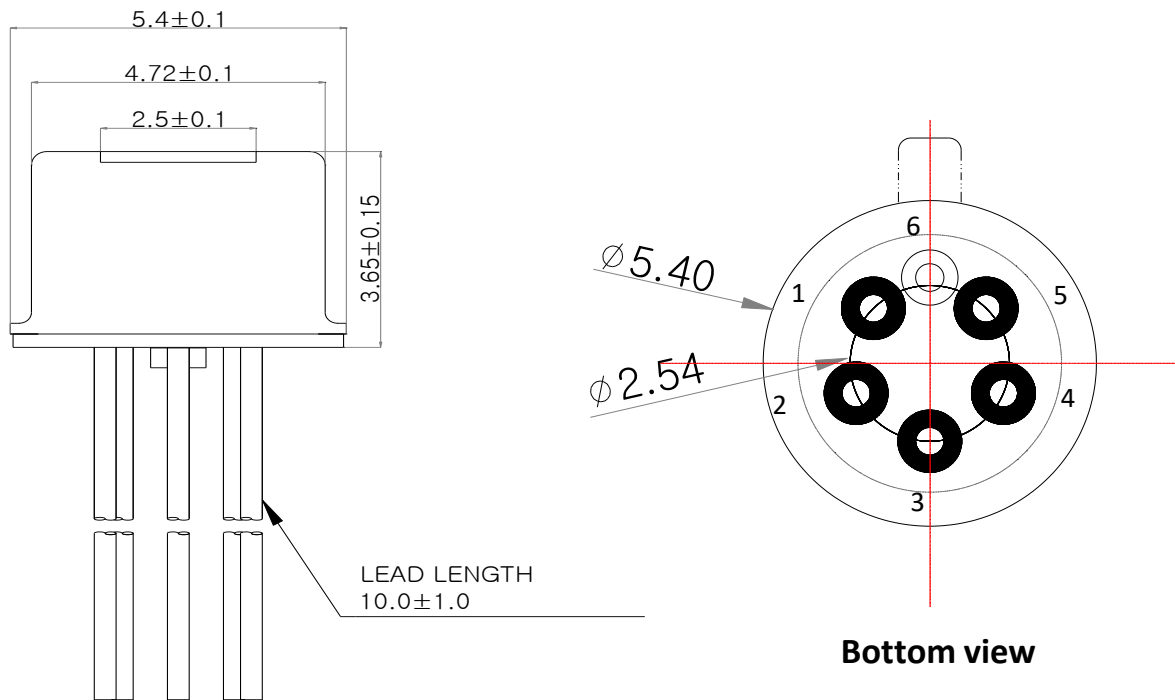
Parameter	Rating
Storage Temperature	-40 to 125 °C
Operating Temperature	0 to 100°C
Lead Solder Temperature	260 °C, 10 sec
VCSEL Forward Current	6 mA
VCSEL Reverse Voltage	5V (@10μA)
Maximum TEC current	0.8 A
Maximum TEC Voltage	0.6 V
Maximum TEC Heat Load	0.29 W
Maximum ΔT across the TEC	60°C

Part Number : Description :

PM89-F1C1R1-B2-Z0-KC 895nm Flat window type TO-46 Package, Common Cathode Type

Dimensions

unit : mm


PIN OUT

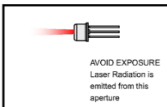
PM89-F1C1R-B2-Z0-KC	
Number	Function
1	K _{VCSEL} & TRs
2	TEC(-)
3	A _{VCSEL}
4	TEC(+)
5	TRs
6	GND

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

Parameters	Symbol	Specified			Unit	Test Conditions
		Min.	Typ.	Max.		
Threshold Current	I_{th}	3			mA	
Peak Wavelength	λ_p	894		895	nm	$I_f = 4\text{ mA} \sim 5\text{mA}$
λ Temperature Variation	$\Delta \lambda / \Delta T$		0.06		nm / $^\circ\text{C}$	
Optical Output Power	P_o		0.3		mW	$I_f = 4\text{ mA}$
Slope Efficiency	η		0.3		mW/mA	$I_f = 4\text{ mA}$
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	$^\circ$	$I_f = 4\text{ mA}$, Room Temp.
Polarization Extinction Ratio	PER		15		dB	$I_f = 4\text{ mA}$, Room Temp.
Accuracy of polarization Direction	δ_{pol}	-15		15	$^\circ$	
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	

Notes

* These specifications are subject to change without notice



NOTICE	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.
DANGER	The VCSEL is a class IIIb laser and should be treated as a potential eye hazard. Due to the size of the component, the applicable warning logotype, aperture label, and certification / identification label cannot be placed on the component itself.