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VC980M-MODULE



- VCSEL Module
- 980 nm, max. 0.75 mW
- Multi Mode
- Glass Lens, Focus Adjustable

Description

VC980M-Module is a VCSEL module emitting at 980 nm with rated output power of max 0.75 mW. The module's body is made of black anodized aluminium, enclosing VCSEL and an adjustable 3-glass collimator lens.

Maximum Ratings

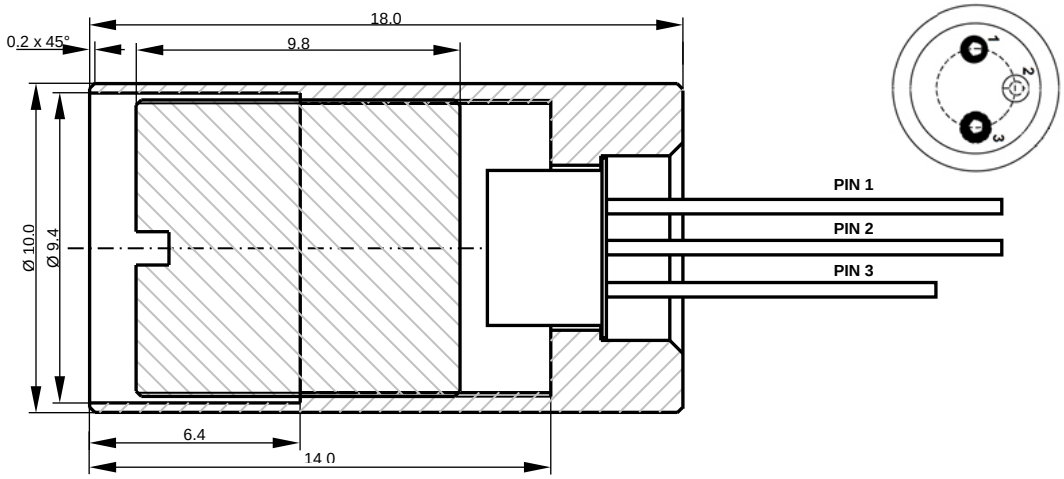
Parameter	Symbol	Values		Unit
		Min.	Max.	
Forward Current	I_F		12	mA
Reverse Voltage	V_R		5	V
Operating Temperature	T_{CASE}	0	+ 85	°C
Storage Temperature	T_{STG}	- 40	+ 100	°C
Soldering Temperature (max. 10s)	T_{SOLD}		260	°C

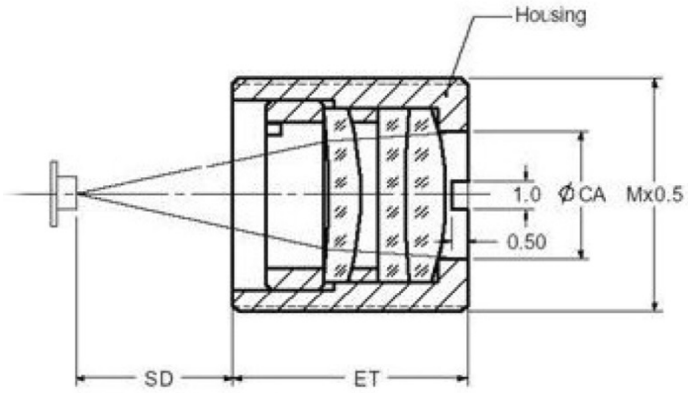
Specifications (T_{CASE}=25°C, I_F=20mA)

Parameter	Symbol	Values			Unit
		Min.	Typ.	Max.	
Peak Wavelength	λ_P	970	980	990	nm
Optical Power	P_O			0.75	mW
Spectral Width	$\Delta\lambda$			0.85	nm
Output Aperture			Ø5		mm
Threshold Current	I_{TH}		1.5		mA
Forward Current	I_F		6		mA
Forward Voltage	V_F		1.6	2.0	V
Breakdown Voltage	V_B		-10		V
Slope Efficiency	η	0.2	0.3	0.5	Ω
Dynamic Resistance	R_D	25	35	55	nm/°C
Focus		adjustable			
Lens Type		3-glass lens, AR coated			
Material Body		Aluminium, black anodized			
Dimensions		Ø10 x 18			mm
PIN Leads		Ø0.25 x 13.5 and ~10 (short pin)			mm

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Drawing



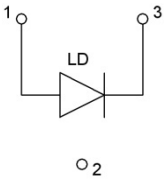


3 glass lens	
EFL	8.0 mm
SD	3.1 mm
NA	0.298
CA	5.0 mm
ET	9.8 mm
Housing	M9 x 0.5
AR coating	630 – 670 nm

All dimensions units are mm

Electrical Connection

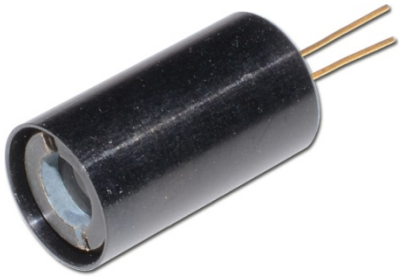
Lead	Description
PIN 1	Anode
PIN 2	n.c.
PIN 3	Cathode





Additional Information





Precaution for Use

1. Cautions

DO NOT look directly into the emitted light or look through the optical system. To prevent in adequate exposure of the radiation, wear protective glasses.

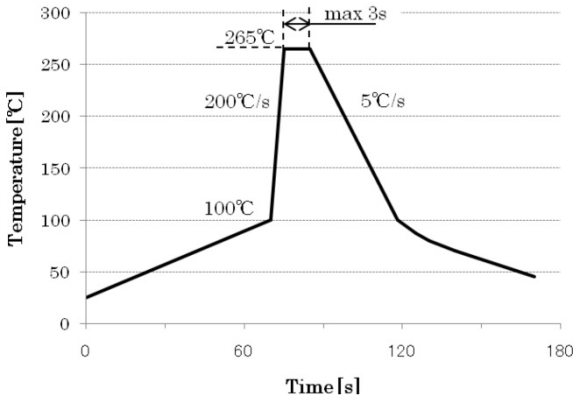
This VCSEL emits concentrated infrared light

2. Lead Forming

- When forming leads, the leads should be bent at a point at least 3 mm from the base of the lead. DO NOT use the base of the lead frame as a fulcrum during lead forming.
- Lead forming should be done before soldering.
- DO NOT apply any bending stress to the base of the lead. The stress to the base may damage the VCSEL's characteristics or it may break the VCSELs.
- When mounted the VCSELs onto the printed circuit board, the holes on the circuit board should be exactly aligned with the leads of VCSELs. If the VCSELs are mounted with stress at the leads, it causes deterioration of the lead and it will degrade the VCSELs.

3. Soldering Conditions

- Solder the VCSELs no closer than 3 mm from the base of the lead.
- DO NOT apply any stress to the lead particularly when heat.
- The VCSELs must not be reposition after soldering.
- After soldering the VCSELs, the lead should be protected from mechanical shock or vibration until the VCSELs return to room temperature.
- When it is necessary to clamp the VCSELs to prevent soldering failure, it is important to minimize the mechanical stress on the VCSELs.
- Cut the VCSEL leads at room temperature. Cutting the leads at high temperature may cause the failure of the VCSELs.



4. Static Electricity

- The VCSELs are sensitive to Static Electricity and surge voltage. So it is recommended that a wrist band or an anti-electrostatic glove be used when handling the VCSELs.
- All devices, equipment and machinery must be grounded properly. It is recommended that precautions should be taken against surge voltage to the equipment that mounts the VCSELs.

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