Data Sheet
850nm Single Mode Polarization VCSEL TO46

Dogain Optoelectronic Technology(Suzhou)Co.,Ltd

PN: DG-VP-P850-2DT2

Rev. 1.0

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Note: Customers represent that they have all the necessary expertise to create and implement their own safeguards that anticipate dangerous failures, monitor failures and their consequences, lessen the likelihood of dangerous failures and take appropriate remedial actions.

Product Introduction

Performance characteristics

DoGain's DG-VP-P850-2DT2 is an 850nm, single mode polarization vertical cavity surface emitting laser diode in TO46 package with integrated thermoelectric cooler, NTC and ESD protection for sensing and spectroscopic applications.

Key Features

- 850nm single mode polarization emission
- Circular beam
- Low operation current
- TO46 with TEC, NTC and ESD protection diode
- RoHS compliant

Application

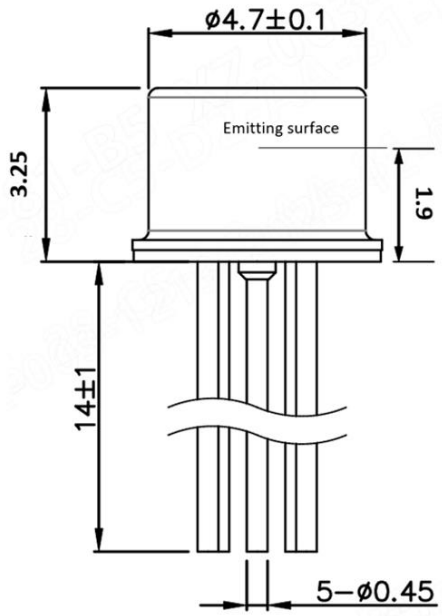
- Industrial sensing

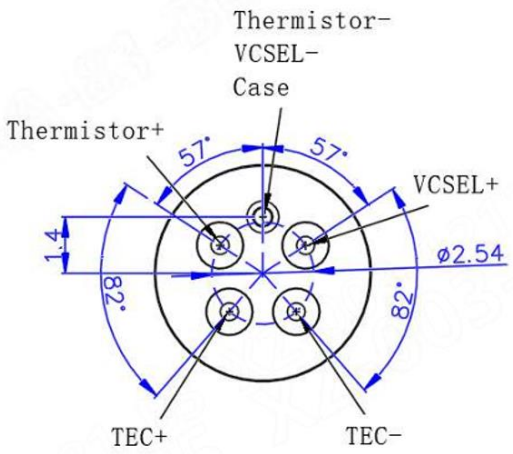
Electro-optical characteristics (25℃)

Parameters	Symbol	Min	Typical	Max	Units	Test Condition
Optical Output Power	P_{OP}	-	2	-	mW	Iop=3mA, Ts=25C
Threshold Current	I_{th}	-	1	1.5	mA	Ts=25C
Differential Resistance	Rs	50	-	200	Ω	Ts=25C
Operating Voltage	V_{op}	-	-	2.4	V	Iop=3mA, Ts=25C
Slope Efficiency	η_S	-	1	-	mW/mA	Ts=25C
Wavelength	λ_{peak}	840	850	860	nm	Iop=3mA, Ts=25C
Wavelength tuning with current	Δλ/ΔI	-	0.35	-	nm/mA	Ts=25C
Wavelength tuning over temperature	Δλ/ΔT	-	0.07	-	nm/℃	-
Spectral Width (RMS)	Δλ	-	100	-	MHz	Iop=3mA, Ts=25C
Side Mode Suppression Ratio	SMSR	10			dB	Iop=3mA, Ts=25C
Orthogonal Polarization Suppression Ratio	OPSR	10			dB	Iop=3mA, Ts=25C
Beam Full Divergence （D86）	φ	-	20	-	°	Iop=3mA, Ts=25C
TEC Current	I_{TEC}	-	-	500	mA	
NTC Thermistor Resistance	R_{NTC}	-	10	-	kΩ	Ts=25C
NTC Thermistor $B_{25/50}$ Value	B	-	3930	-	K	

* All tests are under CW condition with heatsink temperature 25℃

Product appearance mechanical characteristics





Bottom View

Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Units
Operating Temperature	Top	-40	85	℃
Operating Humidity	Hop	0	85	%
Continuous Forward Current	I_f	-	2.5	mA
Continuous Reverse Current	I_r	-	10	mA
Soldering Temperature (less than 10s)		-	270	℃
Storage Temperature	Ts	-40	110	℃
Storage Humidity	Hs	0	85	%

Unless modified in the Terms of Sale, the Product Specification may not be extended, including, but not limited to, any warranties made herein.

Eye safety and disclaimer

Security recommendations

Depending on the usage of the device, the module may emit highly concentrated invisible infrared light that is harmful to the human eye. Products containing these modules may be required to follow the safety precautions specified in IEC 60850-1 and IEC62471.

Product Disclaimer

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Note:

No responsibility is assumed for the use of these products. The products can emit Class I~IV radiation and must be operated with extreme care. Avoid directly viewing the laser beam or exposure to specular reflections. Proper eye wear must be worn at all times when operating. VCSEL Chip in the modules are electrostatic-sensitive device and proper ESD protection is required for handling.