

Single Mode VCSEL 763nm TO46 & TEC

- ◆ Vertical Cavity Surface-Emitting Laser
- ◆ internal TEC and Thermistor
- ◆ Narrow linewidth
- ◆ 2nm tunability with TEC
- ◆ ESD protection diode



INVISIBLE LASER RADIATION
AVOID BEAM EXPOSURE
CLASS 3B LASER PRODUCT

ELECTRO-OPTICAL CHARACTERISTICS

PARAMETER	SYMBOL	UNITS	MIN	TYP	MAX	TEST CONDITIONS
Emission wavelength	λ_R	nm	760	763	766	$T=20^{\circ}\text{C}$, $I_{\text{TEC}}=0$, $P_{\text{OP}}=0.3\text{mW}$
Threshold current	I_{TH}	mA		0,5		$T=20^{\circ}\text{C}$
Output power	P_{opt}	mW	0,25			$T=25^{\circ}\text{C}$
Threshold voltage	U_{TH}	V		1,8		
Laser current	I_{OP}	mA			2,0	$P_{\text{opt}}=0.3\text{ mW}$
Laser voltage	U_{OP}	V		2,0		$P_{\text{opt}}=0.3\text{ mW}$
Wallplug efficiency	η_{WP}	%		12		$P_{\text{opt}}=0.3\text{mW}$
Slope efficiency	η_s	W/A		0,3		$T=20^{\circ}\text{C}$
Differential series resistance	R_s	Ω		250		$P_{\text{opt}}=0.3\text{ mW}$
3dB modulation bandwidth	$\nu_{3\text{dB}}$	GHz	0,1			$P_{\text{opt}}=0.3\text{ mW}$ (due to ESD protection diode)
Relative intensity noise	RIN	dB/Hz		-130,0	-120,0	$P_{\text{opt}} = 0.3\text{ mW @ } 1\text{ GHz}$
Wavelength tuning over current		nm/mA		0,60		
Wavelength tuning over temperature		nm/K		0,06		
Thermal resistance (VCSEL chip)	R_{thermal}	K/mW	3		5	
Side mode suppression		dB	30			
Beam divergence	θ	$^{\circ}$	10		25	$P_{\text{opt}}=0.3\text{ mW}$, full width $1/e^2$
Spectral bandwidth	$\Delta\lambda$	MHZ		100,0		$P_{\text{opt}}=0.3\text{ mW}$
TEC current		mA			500,0	
NTC Thermistor Resistance		K Ω	9,5	10	11	$T=25^{\circ}\text{C}$
NTC Temperature Dependence		K Ω	$10/\exp[3892*(1/298\text{K}-1/T_{\text{op}})]$			
Wavelength tuning over TEC current		nm/mA		0,008		TEC current < 200 mA
ESD damage threshold		V	2.000			Human body model

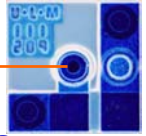
ABSOLUTE MAXIMUM RATINGS

Storage temperature	-40 .. 125°C
Operating temperature	-20 .. 80°C
Electrical power dissipation	5 mW
Continuous forward laser current	2 mA
Continuous reverse current	10mA
Soldering temperature*:	270°C
(*TEC temperature must be below 150°C)	

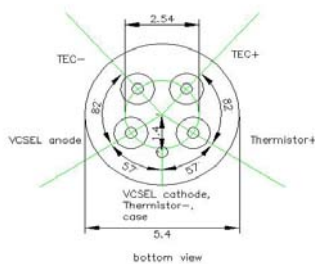
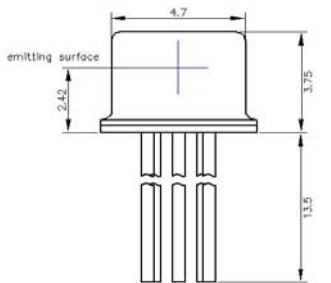
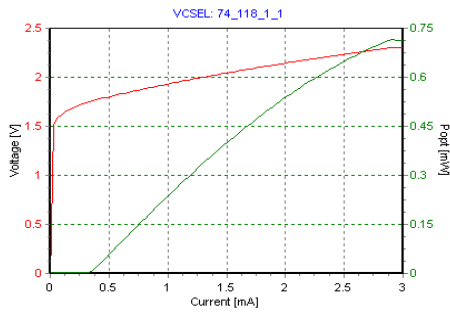
NOTICE: Stresses greater than those listed under „Absolute Maximum Ratings“ may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other condition beyond those indicated for extended periods of time may effect device reliability.



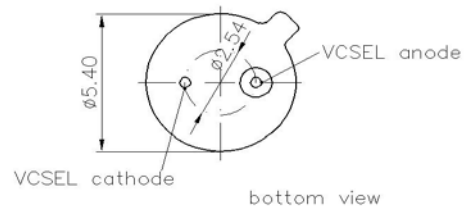
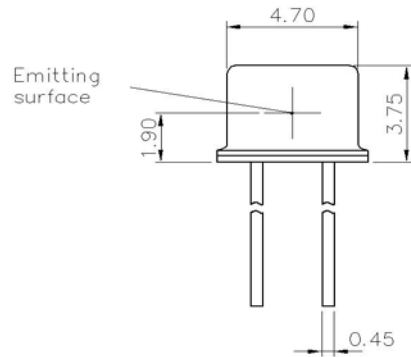
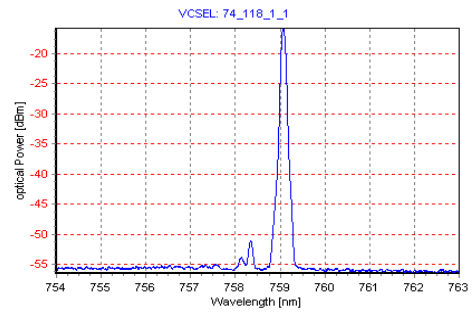
ATTENTION: Electrostatic Sensitive Devices
Observe Precautions for Handling



LIV



Spectral Characteristics



For order please use:

	$\pm 1\text{nm}$	$\pm 3\text{nm}$
with TEC/Thermistor:	ULM763-01-TN-S46FTT	ULM763-03-TN-S46FTT
without TEC/Thermistor:	ULM763-01-TN-S46FOP	ULM763-03-TN-S46FOP

OPTION: Wide range of TO headers & caps (flat, tilted, ball)
Customer specific wavelength selection on request

Basic Product Code ULM Photonics

