AFONICS

LD-0019

635nm Visible Laser Diode

Performance Highlights

- 2.0mW into 9/125µm fibre available
- High operating temperature
- >10000 hours CW MTTF at 50ºC
- Low threshold current

LIMITING VALUES	SYMBOL	VALUE	UNITS
Laser diode reverse voltage	$V_{R(LD)}$	2	V
Photodiode reverse voltage	$V_{R(PD)}$	30	V
Operating temperature	T_{OPR}	-10 to +50	°C
Storage temperature	T_{STG}	-40 to +85	°C

OPTICAL/ELECTRICAL CHARACTERISTICS		SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITION
Low power option	(4/125µm) (9/125µm)	P_F	125 250			µW	$I_F = I_{OP}$
Medium power option	(4/125µm) (9/125µm)	P_F	250 500			µW	$I_F = I_{OP}$
High power option	(4/125µm) (1) (9/125µm)	P_F	750 1500			µW	$I_F = I_{OP}$
Threshold current		I_{TH}		30	50	mA	CW
Operating current (2)		I_{OP}		40	60	mA	
Operating voltage		V_{OP}		2.2	2.4	V	$I_F = I_{OP}$
Lasing wavelength		I_P		635	640	nm	$I_F = I_{OP}$
Rise time (10% to 90%)		t_{LR}		1.5		ns	$I_F = I_{OP}$
Fall time (90% to 10%)		t_{LF}		1.5		ns	$I_F = I_{OP}$
Monitor current		I_M	0.15	0.30	0.65	mA	$I_F = I_{OP}$
Mean time to failure (CW operation)		MTTF	10000			hr	T=50ºC, $I_F = I_{OP}$

All values apply at a temperature of 25°C

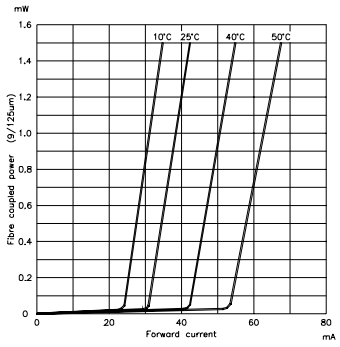
OPTICAL/ELECTRICAL CHARACTERISTICS	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITION
Light output	P_o			5	mW	I_F < 95mA
Beam divergence Perpendicular Parallel	$\theta\perp$ $\theta//$	25 6	35 8	40 10	deg	P_o = 5mW Full angle half maximum
Off axis angle Perpendicular Parallel	$\Delta\theta\perp$ $\Delta\theta//$			±3 ±3	deg	P_o = 5mW
Differential efficiency	dP_o/dI_F		0.4		mW /mA	P_o = 5mW
Astigmatism	As		8		µm	P_o = 5mW

Case temperature = 25°C

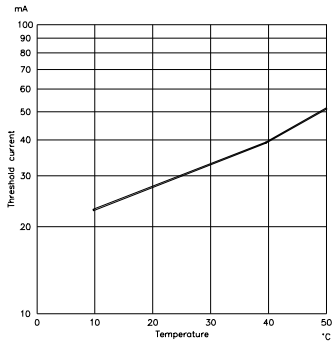
NOTES:

1) Only available in pigtail or minipigtail receptacles.
2) Operating current is the forward current when the facet power is 5mW at 25ºC.

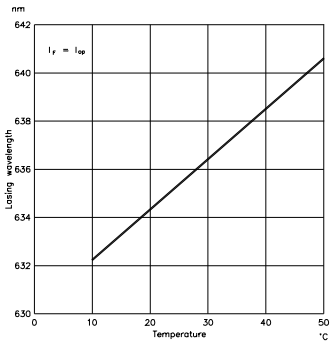
GRAPHS SHOWING TYPICAL CHARACTERISTICS



Minimum power into 9um fibre vs forward current (high power option)



Threshold current vs temperature



Lasing wavelength vs temperature

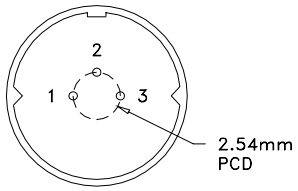
PINOUT DETAILS

1 = Laser diode cathode

2 = Laser diode anode (case)
Photodiode cathode

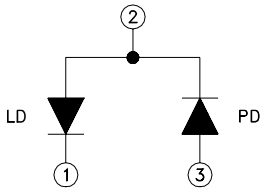
3 = Photodiode anode

Pin length = 10.0mm



REAR VIEW

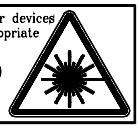
INTERNAL CIRCUIT



WARNING – Radiation emitted by laser devices can be dangerous to the eyes and appropriate precautions must be taken in use.

(Ref BS EN 60825, HD 482 S1 & IEC 825)

VISIBLE LASER RADIATION



NOTE: The device is very susceptible to damage by electrostatic discharge.

NOTES:

1) Standard pin orientation aligns pin 2 with the receptacle keyway unless a custom orientation is requested.
2) Usable pin length will vary dependant on choice of receptacle. If pin length is important please contact Afonics before placing an order.

