AFONICS

LD-0021

635nm Visible Laser Diode

Performance Highlights

- 4mW into 9/125µm fibre available
- High operating temperature
- Low threshold current

LIMITING VALUES	SYMBOL	VALUE	UNITS
Laser diode continuous forward current	$I_{F(LD)}$	95	mA
Laser diode reverse voltage	$V_{R(LD)}$	2	V
Photodiode reverse voltage	$V_{R(PD)}$	30	V
Operating temperature	T_{OPR}	-10 to +40	°C
Storage temperature	T_{STG}	-40 to +85	°C

OPTICAL/ELECTRICAL CHARACTERISTICS		SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITION
Low power option	(4/125µm) [1] (9/125µm)	P_F	350 750	500 1000		µW	$I_F = I_{OP}$
Medium power option	(4/125µm) [1] (9/125µm)	P_F	750 1500	1000 2000		µW	$I_F = I_{OP}$
High power option	(4/125µm) [1] (9/125µm)	P_F	1500 3000	2000 4000		µW	$I_F = I_{OP}$
Threshold current		I_{TH}		35	60	mA	
Operating current [2]		I_{OP}		55	80	mA	
Operating voltage		V_{OP}		2.2	2.4	V	$I_F = I_{OP}$
Lasing wavelength		I_P		635	645	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	0.05	0.15		mA	$I_F = I_{OP}$
Operating life (CW operation)			1000			hrs	T=40ºC, $I_F = I_{OP}$

All values apply at a temperature of 25°C

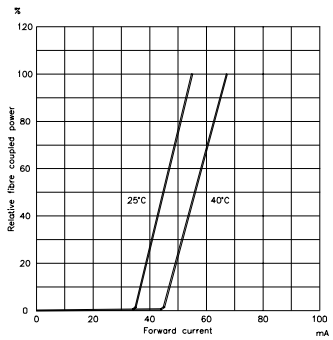
OPTICAL/ELECTRICAL CHARACTERISTICS	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITION
Light output	P_o			10	mW	I_F < 95mA
Beam divergence Perpendicular Parallel	$\theta\perp$ $\theta//$	25 6	33 8	40 10	deg	P_o = 10mW Full angle half maximum
Off axis angle Perpendicular Parallel	$\Delta\theta\perp$ $\Delta\theta//$			±3 ±3	deg	P_o = 10mW
Differential efficiency	dP_o/dI_F		0.5		mW /mA	P_o = 10mW
Astigmatism	As		8		µm	P_o = 10mW

Case temperature = 25°C

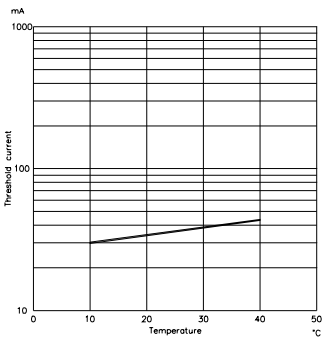
NOTES:

1) It is recommended that pigtail or minipigtail housings are specified when 4/125µm fibre is required.
2) Operating current is the forward current when the facet power is 10mW at 25ºC.

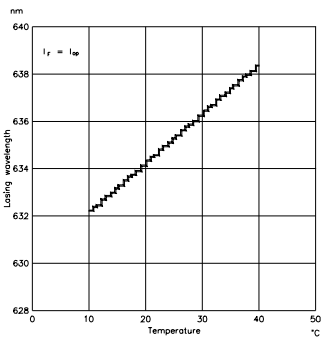
GRAPHS SHOWING TYPICAL CHARACTERISTICS



Relative output power vs forward current



Threshold current vs temperature



Lasing wavelength vs temperature

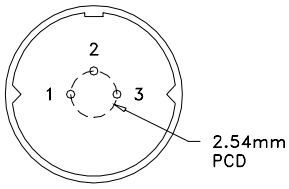
PINOUT DETAILS

1 = Laser diode cathode

2 = Laser diode anode (case)
Photodiode cathode

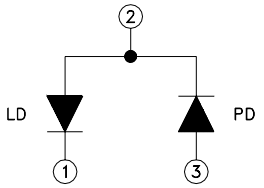
3 = Photodiode anode

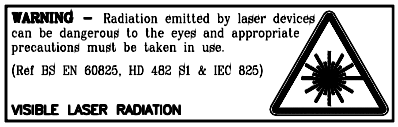
Pin length = 10.0mm



REAR VIEW

INTERNAL CIRCUIT





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.

