

PW85L Series WDM Multimode850nm Transmit/1300nm Receive Bidirectional Modules

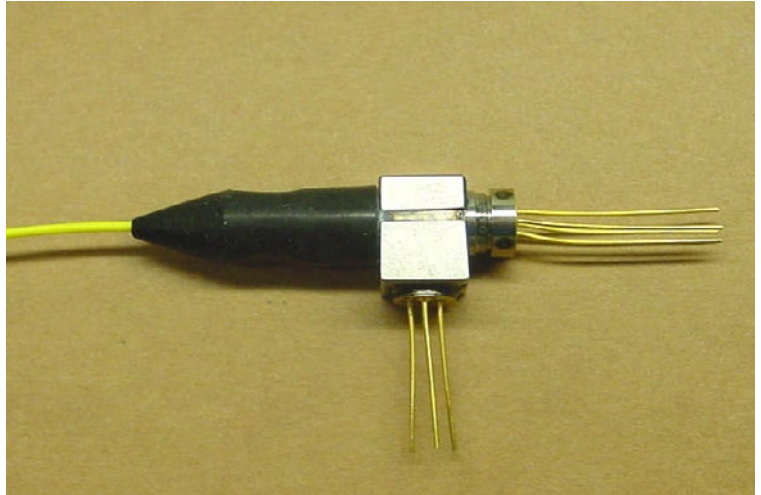
PD-LD Inc. is now offering its next generation of WDM style BiDirectional transmitter and receiver modules operating in the 850 and 1310nm optical windows. These devices are designed to simultaneously transmit and receive over a single optical fiber at frequencies from DC to 1.0 GHz. Dual wavelength bi-directional modules replace the need for a multimode fiber coupled laser diode, a fiber coupled PIN photodiode, a discrete fiber optic WDM and a second stage optical isolator. The BiDirectional Modules combine all of these optical functions and relieve the user of having to fusion splice several discrete units together and then squeeze them onto their PCB.

These small, compact modules require minimal board real estate and when used in pairs deliver two way operation over a single 62.5/125um optical fiber.

The PD-LD product incorporates low threshold current, high differential quantum efficiency 850nm VCSEL (Vertical Cavity Surface Emitting Lasers) transmitters that have 1.5mA typical threshold currents and usually operate with less than 5mA of total drive current. The receiver sections offer discrete InGaAs PIN photodiodes of planar semiconductor design that have dielectric passivation for very low noise performance at 1310nm. See the data sheet for the PW1385 series for the matching bidirectional module. PD-LD's BiDirectional WDM modules are built to meet the demanding requirements of industrial operating temperature ranges of -40 to 85°C.

The PD-LD BiDirectional modules are assembled using laser welding processes. This technique guarantees a semiconductor to optical fiber interface that remains stable over mechanical and environmental extremes. The optical semiconductor die are mounted within hermetically sealed TO can subassemblies making them impervious to contaminants and moisture. This construction ensures that optical output power will vary by no more than +/-1.5dB over the entire operating temperature range from its initial 25°C performance.

WDM BiDirectional modules are built with 1+/-0.2 meter long 62.5/125/900 um MMF fiber optic pigtailed. These fibers may be terminated with most standard fiber optic connectors including FC, SC and ST styles.



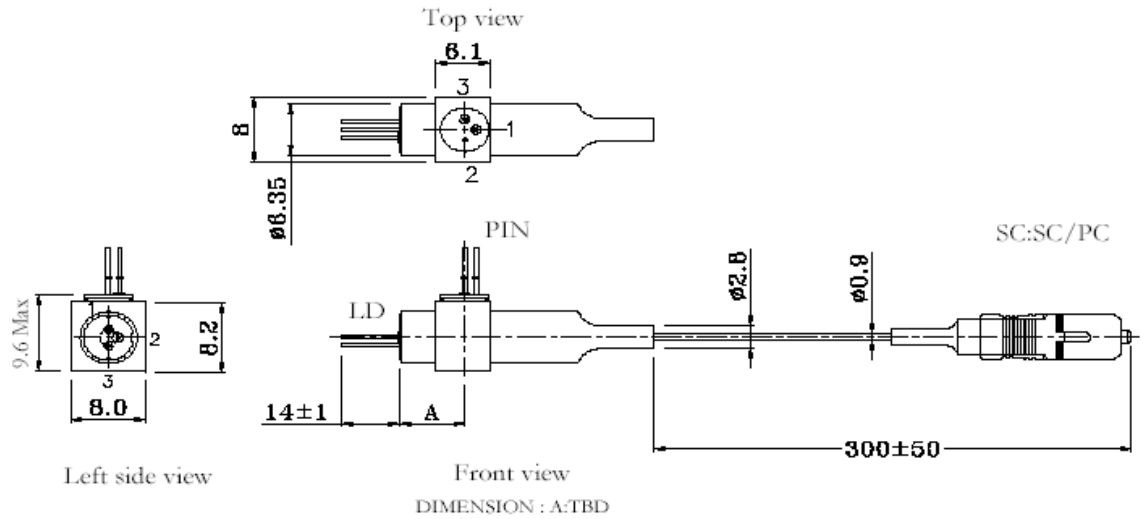
Features

- Output Power up to 0.5 mW CW
- -40 to +85° Operating Temperature
- 850 nm FP Laser Diodes
- Low Noise InGaAs PIN Photodiodes
- Compact, rugged construction
- Low Threshold Current Lasers
- Low Power Consumption
- Available with optical connectors
- Replaces Discrete Lasers and Optical Couplers
- Class 1 Eye Safe Device
- UL Listed
- Pairs with PW8513 Series

Applications

- Passive Optical Networks
- Short distance over MMF
- Full Duplex Communications
- WDM Bi-Directional transmission over a single fiber
- CATV
- CCTV

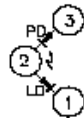
PE13W Series 1300nm ELEDs for Fiber Optics



LD Pin Assignment

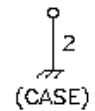
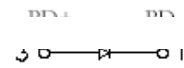
H Type

- Pin 1 : V ANTHODE
- Pin 2 : V NODE / PHOTODIODE CATHODE
- Pin 3 : PHOTODIODE ANODE



PIN Pin Assignment

TO NO :R-13-075-G-BB



PE13W Series 1300nm ELEDs for Fiber Optics

Ordering Information

BiDirectional Module Characteristics and Parameters						
	Symbol	MIN.	TYP.	MAX	Units	Test Condition
VCSEL 850nm						
Power Low	P _O	0.3	0.5		mW	I _F =40mA
Slope Efficiency	SE		0.15		mW/mA	CW
Threshold Current	I _{TH}		1.5	2.5	mA	CW
Operating Current	I _{OP}		3	5	mA	I _F = I _{OP}
Operating Voltage	V _{OP}	-	1.8	2.2	V	I _F = I _{OP}
Peak Wavelength	Lambda	830	850	860	nm	25°C
Spectral Width	Delta Lambda	-	1	1.5	nm	RMS
Temp. Coefficient		-	0.06	-	nm/°C	-40 to 85°C
Rise/Fall Time	t _r , t _f	-	90	110	psec	10~90%
Monitor Diode						
Reverse Voltage	V _{RPD}			10	V	
Forward Current	I _{FDP}			2	mA	CW
Output	I _{MD}	3	15	50	μA	I _F = I _{OP} , P _O
Dark Current	I _{D(MD)}	-	-	20	nA	V _{R(MD)} = 3V
Capacitance	C _(MD)	-	100	-	pF	V _{R(MD)} = 0V, f = 1MHz
PIN Photodiode						
Active Area			75		μm	Diameter
Spectral Sensitivity	S		0.5		A/W	V _{R(PD)} = 5V @ 1310nm
Reverse Voltage	V		5	15	V	
Dark Current	I _{D(PD)}	-	0.5	0.8	nA	V _{R(PD)} = 5V @ 25°C
Capacitance	C _(PD)		0.7	0.9	pF	V _{R(PD)} = 5V, f = 1MHz
Rise/Fall Time	t _r , t _f	-	-	0.3	nsec	V _{R(PD)} = 5V, 10~90%
Module						
Tracking Error		-1.5		+1.5	dB	-40 to 85°C
Fiber Tensile Strength		5			N	
Connector Return Loss				45	dB	

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