

PT8512-31-1-SC/PC-23

1550nm/1310nm Bi-directional Diplexer

Features

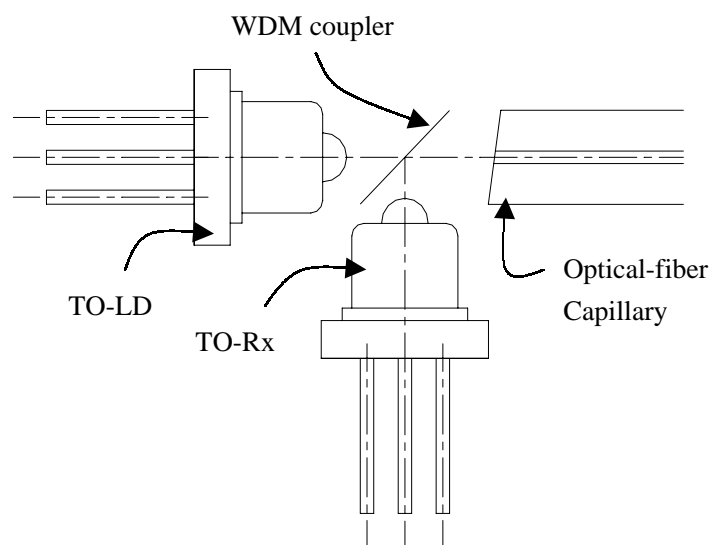
- MQW F-P 1550nm laser diode as transmitter
- InGaAs PIN as receiver
- 1550 nm wavelength output, output power $>0.1\text{mW}$
- 1310 nm wavelength input, responsivity $>0.7\text{A/W}$
- Isolation $> 35\text{dB}$ and Cross talk $< -45\text{dB}$
- Integrated WDM (Wave Division Multiplex) coupler (1550nm transmit / 1310nm reflect)
- Coaxial package with SC/PC Receptacle
- Operate temperature from 0°C to $+70^{\circ}\text{C}$.

Application

- Telecom Systems
- Datacom Systems

Description

The PT8512 series contains a 1550nm MQW F-P laser diode as transmitter, an InGaAs photo-detector in the TO-can as receiver, an edge filter (1550nm transmit / 1310nm reflect) to separate 1550nm output light (including 1550nm light reflected back) and 1310nm input light. Together with PT8312 or PT8412, the most compacted and cost-effective 1550/1310nm WDM in single fiber can be provided, a duplex optical link can be built for a wide variety of data communicate applications from high-speed extends up to 155Mb/s signal rates, distance up to 30km.



Block Diagram

Absolute Maximum Ratings

Parameter	Symbol	Ratings	Unit
Reverse Voltage of LD	V_{RL}	2	V
Forward Current of PD	I_{FD}	2	mA
Reverse Voltage of PD	V_{RD}	20	V
Operating Case Temperature	T_c	0 to +70	°C
Storage Temperature	T_{stg}	-40 to +85	°C
Lead Soldering Temperature/Time	T_{sld}	240/10	°C /sec
Optical Return Loss	Orl	14 minimum	dB

Electrical and Optical Characteristics

Transmitter Specifications ($T_c=25\text{ }^\circ\text{C}$, unless otherwise specified)

Parameter	Symbol	Test Conditions	Minimum	Typical	Maximum	Unit
Center Wavelength	λ	CW	1480	1550	1580	nm
Operating Voltage	V_{op}	CW, P_o		1.1	1.5	V
Threshold Current	I_{th}	CW	-	10	30	mA
Operating Current	I_{op}	CW	-	30	50	mA
Output Power	P_o	CW, $I_f=I_{th}+20\text{mA}$	0.1	-	0.5	mW
Spectral Width (RMS)	$\Delta \lambda$	$P_o=0.1\text{mW}$	-	1.5	3	nm
Rise and Fall Time	T_r, T_f	10%-90%	-	-	0.7	ns

Receiver Specifications ($T_c=25\text{ }^\circ\text{C}$, unless otherwise specified)

Parameter	Symbol	Condition	Minimum	Typical	Maximum	Unit
Wavelength	λ	-	1260	1310	1360	nm
Optical Isolation	Iso	1310/1550nm	35	-	-	dB
Optical Cross talk	C_t	-	-	-	-45	dB
Responsivity	R	-	0.7	-	-	A/W