

Optoelectronics Components Data Sheet

■ DE-0776

1.25Gbps, 1490nm, 7mW DFB Laser Diode Coaxial Module

Description

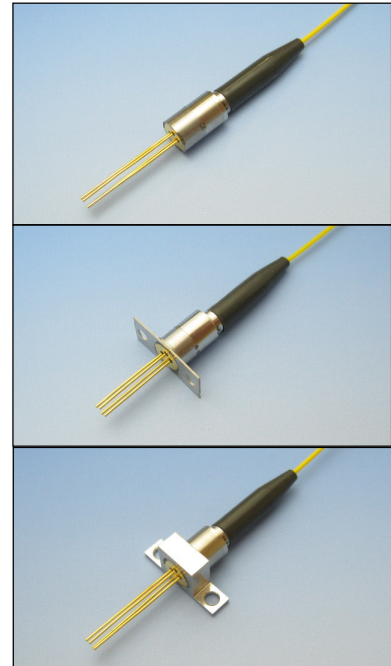
DE-0776 is 1.25Gbps, 1490nm laser diode (LD) modules of coaxial pigtail type. This module consists of a multi quantum well distributed feed-back (MQW-DFB) LD, a monitor photo diode (PD), a single-stage optical isolator, a single-mode fiber and a coaxial package. This module is suitable for building optical line terminal (OLT) of 1.25bps passive optical network (PON) system.

Features

- ◆ Fiber output power : 7mW Min.
- ◆ Side mode suppression: 30dB Min.
- ◆ MQW DFB-LD structure
- ◆ ~1.25Gbps operating bit rate
- ◆ Built-in single-stage optical isolator
- ◆ Hermetically sealed LD device
- ◆ YAG laser spot welding for high reliability
- ◆ Coaxial Package
- ◆ -5 to +70 °C operating temperature range

Applications

- OLT module for PON System
- Digital Transmission System



Absolute Maximum Ratings

(Tc=25°C, unless otherwise specified)

Parameter	Symbol	Ratings	Unit	Conditions
Fiber output power	Pf	10	mW	CW
LD reverse voltage	V _{RL}	2	V	---
LD forward current	If	150	mA	---
Monitor PD Reverse voltage	V _{RP}	15	V	---
Monitor PD Forward current	I _{FP}	2	mA	---
Storage temperature	T _{stg}	-40 ~ +85	°C	---
Operating temperature	T _c	-5 ~ +70	°C	---
Soldering temperature	T _s	260	°C	10sec, >2mm

Electrical and Optical Characteristics

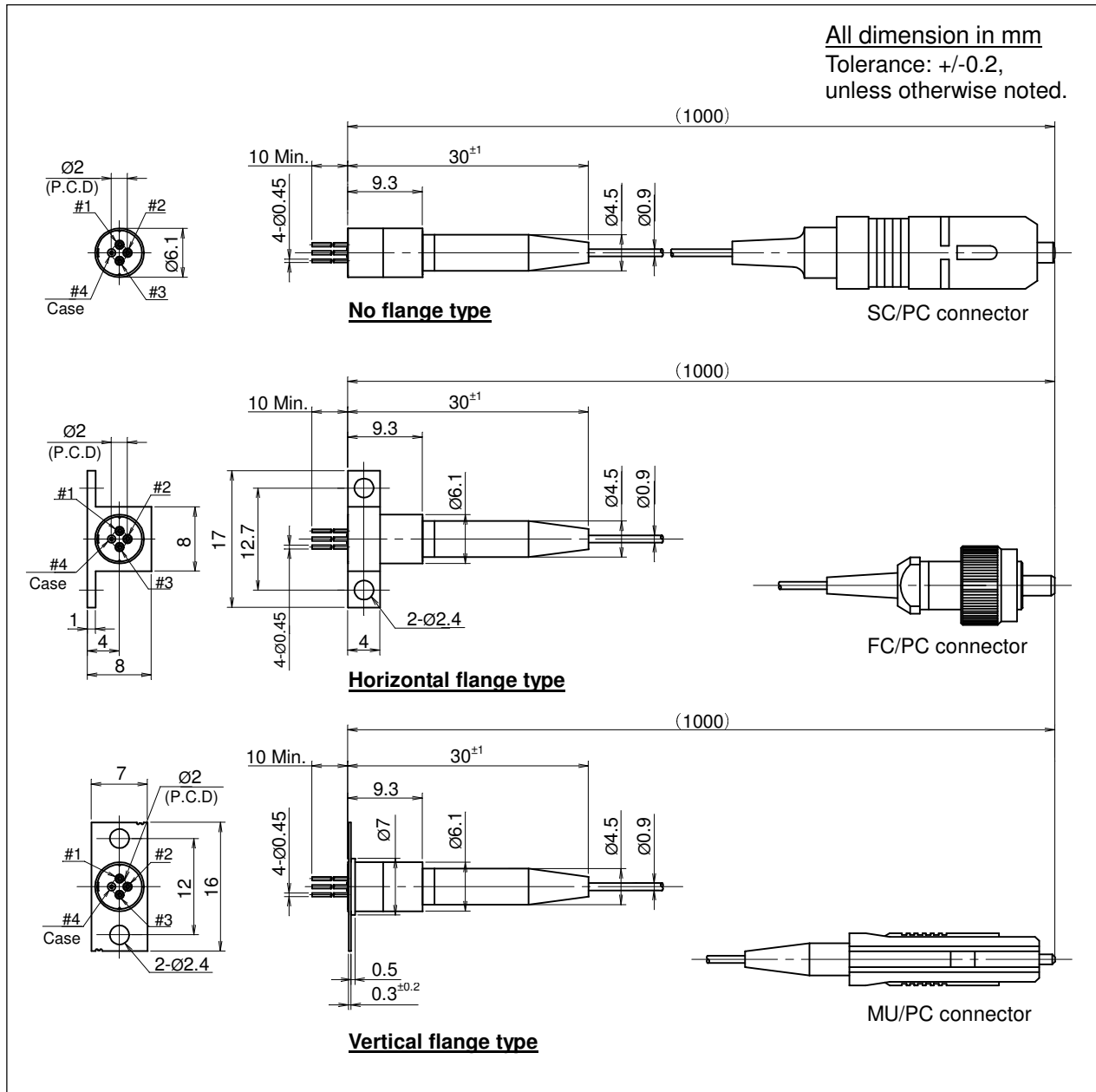
(Tc=-5 to 70°C, unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit	
Fiber output power	Pf	CW	7	---	---	mW	
Threshold current	I _{th}	CW, Tc=25°C	---	---	13	mA	
		CW, Tc=70°C	---	---	34		
Modulation current (*1)	I _{mod}	CW, Pf=7mW	Tc=25°C	---	---	60	mA
			Tc=70°C	---	---	77	
Operation voltage	V _{op}	CW, Pf=7mW	---	---	1.6	V	
Peak wavelength	λ _p	CW, Pf=7mW	1480	1490	1500	nm	
Spectrum width	Δλ	CW, Pf=7mW, -20dB	---	---	1	nm	
Side mode suppression ratio	SMSR	CW, Pf=7mW	38	45	---	dB	
Rise & Fall time	t _r , t _f	20-80%, I _b =I _{th} Pf=7mW, Tc=25°C	---	0.1	0.2	ns	
Monitor PD output current	I _m	V _{RP} =1V, Pf=7mW, Tc=25°C	250	---	2500	μA	
Monitor PD dark current	I _d	V _{RP} =1V	---	---	100	nA	
Monitor PD Capacitance	C _t	V _{RP} =1V	---	---	100	pF	
Tracking Error	TE	CW, I _m (@Tc=25°C) =constant	-1	---	1	dB	

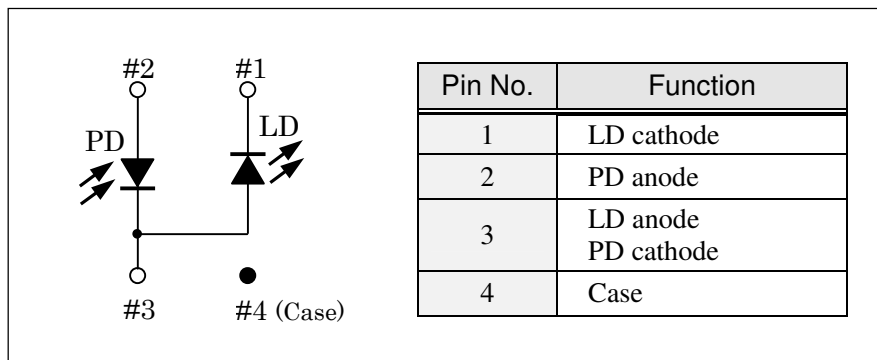
Note : (*1) Modulation current : I_{mod}= I_{op}-I_{th}

I_{op} : Operation current

Outline Drawings



Pin configuration

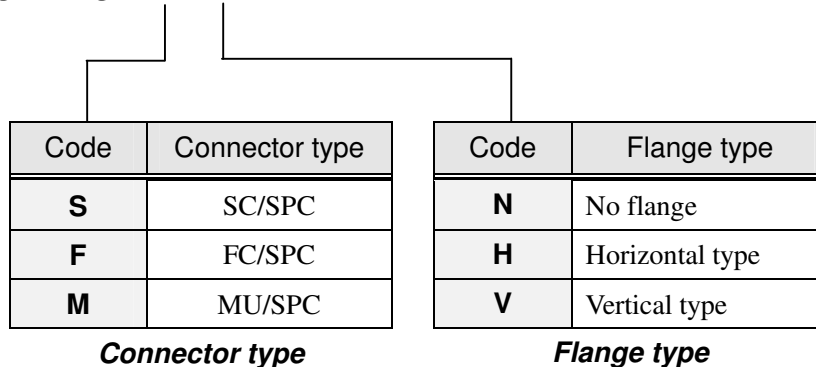


Optical Fiber Characteristics

Parameter	Min.	Typ.	Max.	Unit
Fiber type	Single mode			---
Mode field diameter	8	9	10	μm
Clad diameter	123	125	127	μm
Concentricity error	---	---	1	μm
Cladding non-circularity	---	---	2	%
Mode field non-circularity	---	---	6	%
Cut off wavelength	1270	---	---	nm
Jacket diameter	0.8	0.9	1	mm
Bending Radius	20	---	---	mm
Tensile strength fiber case	5	---	---	N
Length	---	(1000)	---	mm
Connector	FC type / SPC			
	SC type / SPC			
	MU type / SPC			

Ordering information

DE-0776-□□



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