

Optoelectronics Components Data Sheet

■ DE-0445-xxx Series

1.25Gbps, 2mW DFB Laser Diode Coaxial Module for CWDM transmission applications

Description

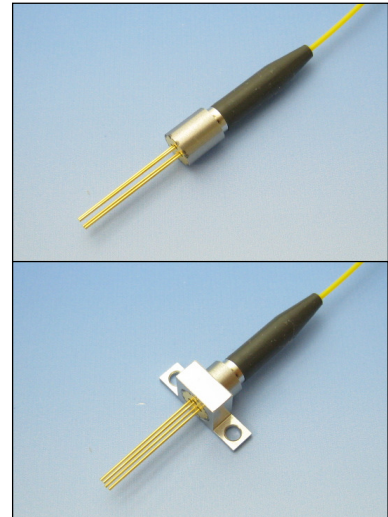
DE-0445-xxx series are 1470~1610nm laser diode (LD) modules of coaxial pigtail type. These modules consist of a multi quantum well distributed feed-back (MQW-DFB) LD, a monitor photo diode (PD), a single-stage optical isolator, a single-mode fiber and a coaxial package. These modules are suitable for building coarse wavelength division multiplexing (CWDM) transmission systems.

Features

- ◆ Fiber output power : 2mW Min.
- ◆ Side mode suppression: 30dB Min.
- ◆ 8 wavelength channel with 20nm space at 1470~1610nm
- ◆ MQW DFB-LD structure
- ◆ ~1.25Gbps operating bit rate
- ◆ Built-in single-stage optical isolator
- ◆ Hermetically sealed LD devices
- ◆ YAG laser spot welding for high reliability
- ◆ Coaxial Package
- ◆ 0 to +70 °C operating temperature range

Applications

- CWDM Transmission System



Absolute Maximum Ratings

(Tc=25°C, unless otherwise specified)

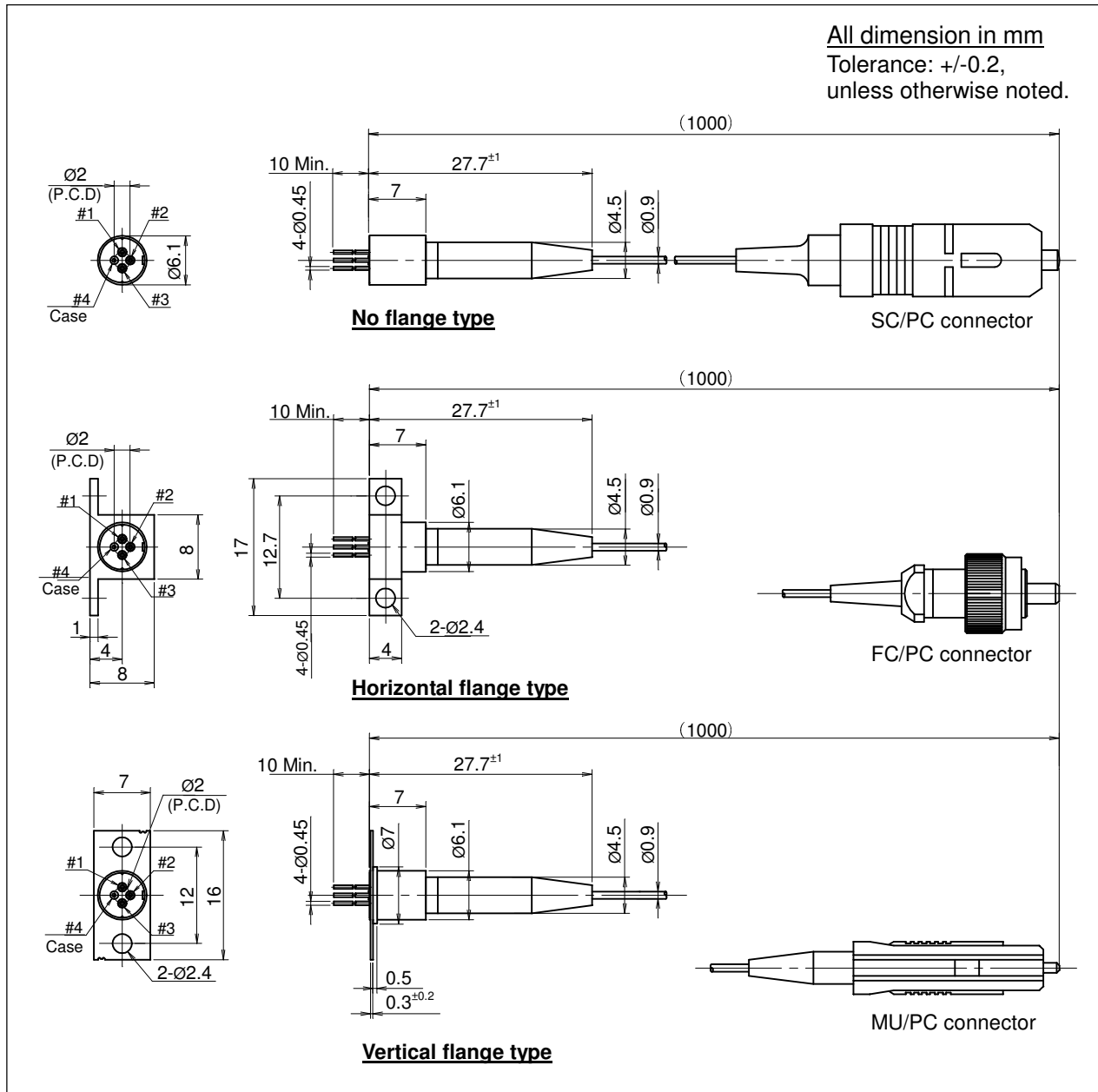
Parameter	Symbol	Ratings	Unit	Conditions
Fiber output power	Pf	5	mW	CW
LD reverse voltage	V _{RL}	2	V	---
LD forward current	I _f	150	mA	---
Monitor PD Reverse voltage	V _{RP}	20	V	---
Monitor PD Forward current	I _{FP}	2	mA	---
Storage temperature	T _{stg}	-40 ~ +100	°C	---
Operating temperature	T _c	0 ~ +85	°C	---
Soldering temperature	T _s	260	°C	10sec, >2mm

Electrical and Optical Characteristics

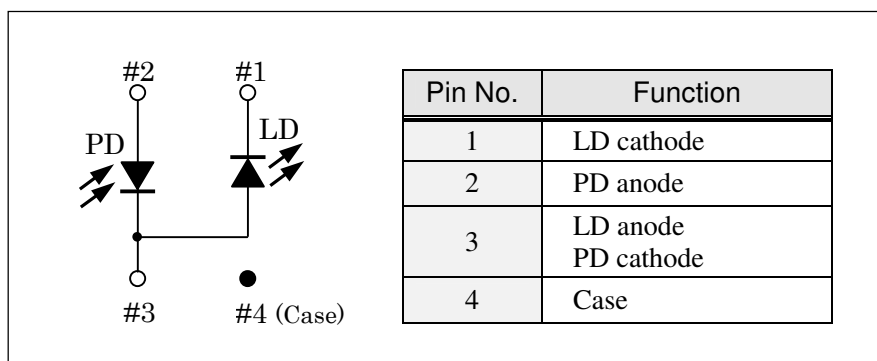
(Tc=0 to 85°C, unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit	
Fiber output power	Pf	CW	2	---	---	mW	
Threshold current	I _{th}	CW, Tc=25°C	---	8	15	mA	
		CW, Tc=85°C	---	30	50		
Operation current	I _{op}	CW, Pf=2mW	Tc=25°C	---	25	40	mA
			Tc=85°C	---	60	80	
Operation voltage	V _{op}	CW, Pf=2mW, Tc=25°C	---	1.1	1.5	V	
Peak wavelength	λ _p	CW Pf=2mW Tc=25°C	DE-0445-147	1467	1470	1473	nm
			DE-0445-149	1487	1490	1493	
			DE-0445-151	1507	1510	1513	
			DE-0445-153	1527	1530	1533	
			DE-0445-155	1547	1550	1553	
			DE-0445-157	1567	1570	1573	
			DE-0445-159	1587	1590	1593	
			DE-0445-161	1607	1610	1613	
Spectrum width	Δλ	CW, Pf=2mW, Tc=25°C, -20dB	---	---	1	nm	
Side mode suppression ratio	SMSR	CW, Pf=2mW	35	40	---	dB	
Rise & Fall time	t _r , t _f	20-80%, I _b =I _{th} Pf=2mW, Tc=25°C	---	0.1	0.2	ns	
Monitor PD output current	I _m	V _{RP} =1V, Pf=2mW, Tc=25°C	50	200	---	μA	
Monitor PD dark current	I _d	V _{RP} =5V, Tc=25°C	---	---	0.1	μA	
Monitor PD Capacitance	C _t	V _{RP} =5V, Tc=25°C	---	10	20	pF	
Tracking Error	TE	CW, I _m (@Tc=25°C) =constant	-1	---	1	dB	

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-0445-□□□-□□

Code	Wavelength@25℃
147	1470nm
149	1490nm
151	1510nm
153	1530nm
155	1550nm
157	1570nm
159	1590nm
161	1610nm

Wavelength channel

Code	Connector type
S	SC/SPC
F	FC/SPC
M	MU/SPC

Connector type

Code	Flange type
N	No flange
H	Horizontal type
V	Vertical type

Flange type

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