

## Optoelectronics Components Data Sheet

### ■ DE-C055-xxx Series

1310nm, 1550nm, 1.25Gbps, 2mW DFB Laser Diode Coaxial Module for digital transmission applications

#### Description

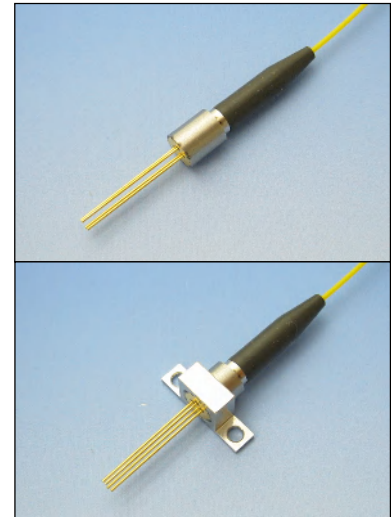
DE-C055-xxx series are 1310nm or 1550nm laser diode (LD) modules of coaxial pigtail type. These modules consist of a multi quantum well distributed feed-back (MQW-DFB) LD, a monitor photo diode (PD), a single-stage optical isolator, a single-mode fiber and a coaxial package. These modules are suitable for building digital transmission systems.

#### Features

- ◆ Fiber output power : 2mW Min.
- ◆ Side mode suppression: 30dB Min.
- ◆ Wavelength: 1310nm, 1550nm
- ◆ 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

- Digital Transmission System



### Absolute Maximum Ratings

(Tc=25°C, unless otherwise specified)

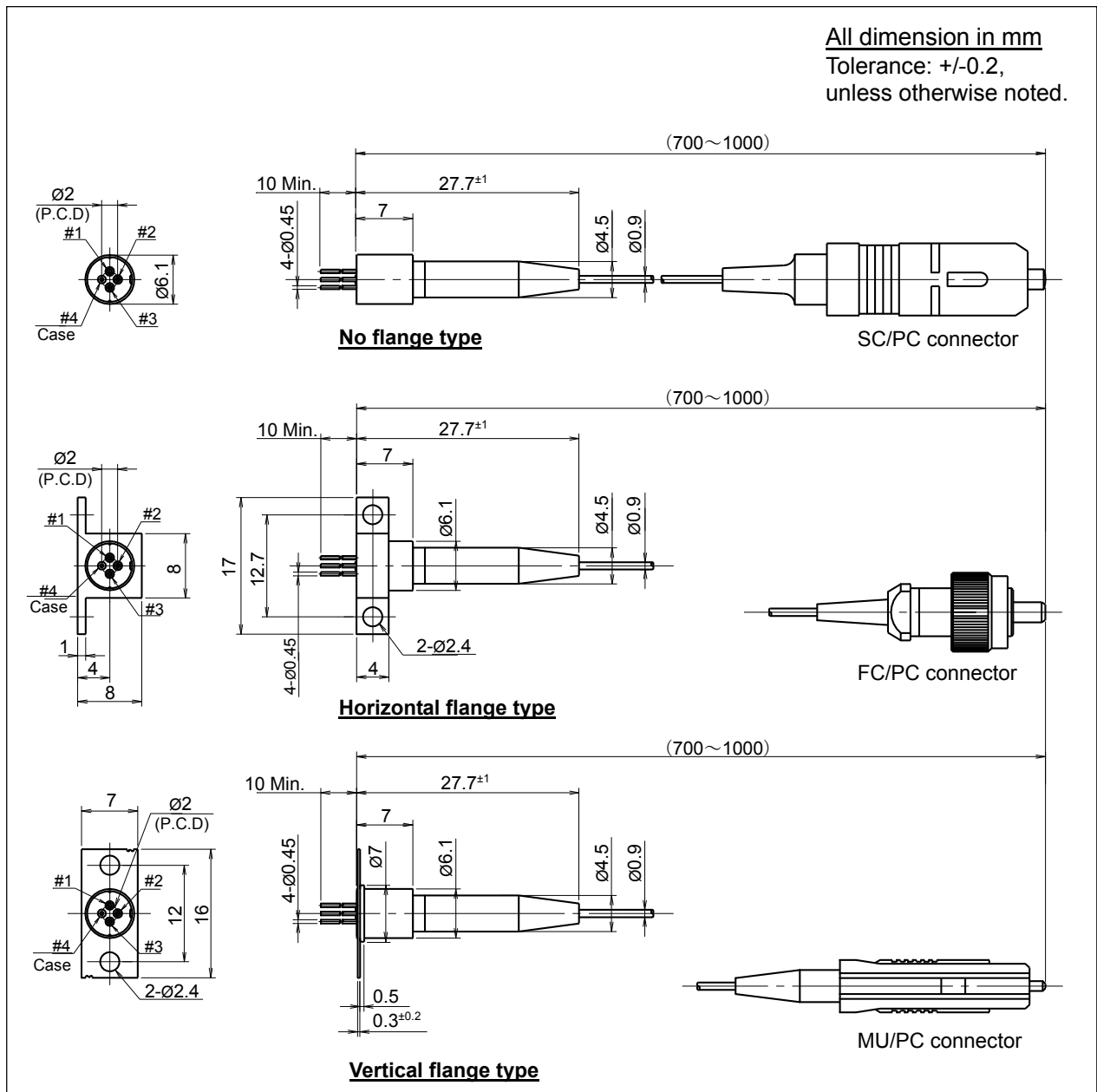
Parameter	Symbol	Ratings	Unit	Conditions
Fiber output power	Pf	5	mW	CW
LD reverse voltage	V <sub>RL</sub>	2	V	---
LD forward current	I <sub>f</sub>	150	mA	---
Monitor PD Reverse voltage	V <sub>RP</sub>	20	V	---
Monitor PD Forward current	I <sub>FP</sub>	2	mA	---
Storage temperature	T <sub>stg</sub>	-40 ~ +85	°C	---
Operating temperature	T <sub>c</sub>	0 ~ +70	°C	---
Soldering temperature	T <sub>s</sub>	260	°C	10sec, >2mm

### Electrical and Optical Characteristics

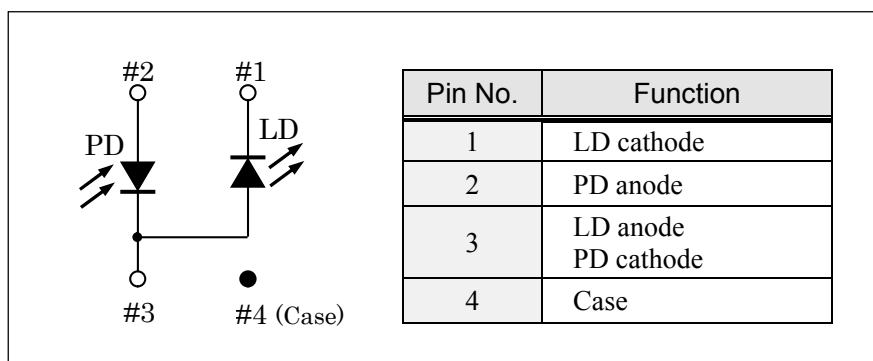
(Tc= 25°C, unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit	
Fiber output power	Pf	CW	2	---	---	mW	
Threshold current	I <sub>th</sub>	CW, Tc=25°C	---	8	15	mA	
		CW, Tc=70°C	---	30	50		
Operation current	I <sub>op</sub>	CW, Pf=2mW	Tc=25°C	---	25	50	mA
			Tc=70°C	---	60	90	
Operation voltage	V <sub>op</sub>	CW, Pf=2mW, Tc=25°C	---	1.1	1.5	V	
Peak wavelength	λ <sub>p</sub>	CW Pf=2mW Tc=25°C	DE-C055-131	1290	1310	1330	nm
			DE-C055-155	1530	1550	1570	
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 <sub>r</sub> , t <sub>f</sub>	20-80%, I <sub>b</sub> =I <sub>th</sub> Pf=2mW, Tc=25°C	---	0.1	0.2	ns	
Monitor PD output current	I <sub>m</sub>	V <sub>R</sub> =1V, Pf=2mW, Tc=25°C	50	200	---	μA	
Monitor PD dark current	I <sub>d</sub>	V <sub>RP</sub> =5V, Tc=25°C	---	---	0.1	μA	
Monitor PD Capacitance	C <sub>t</sub>	V <sub>RP</sub> =5V, Tc=25°C	---	10	20	pF	
Tracking Error	TE	CW, I <sub>m</sub> (@Tc=25°C) =constant	-1.5	---	1.5	dB	

## Outline Drawings



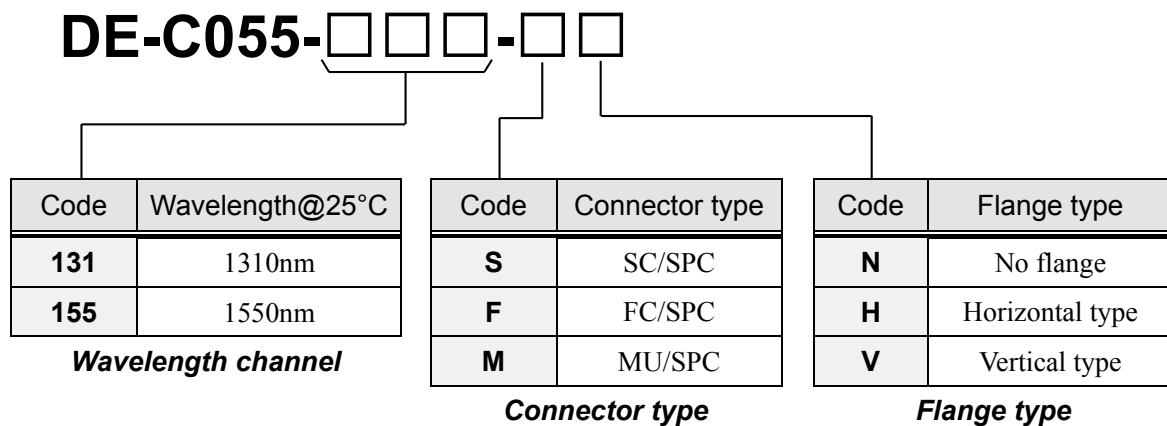
## Pin configuration



### 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	---	(700~1000)	---	mm
Connector	FC type / SPC			
	SC type / SPC			
	MU type / SPC			

### Ordering information



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