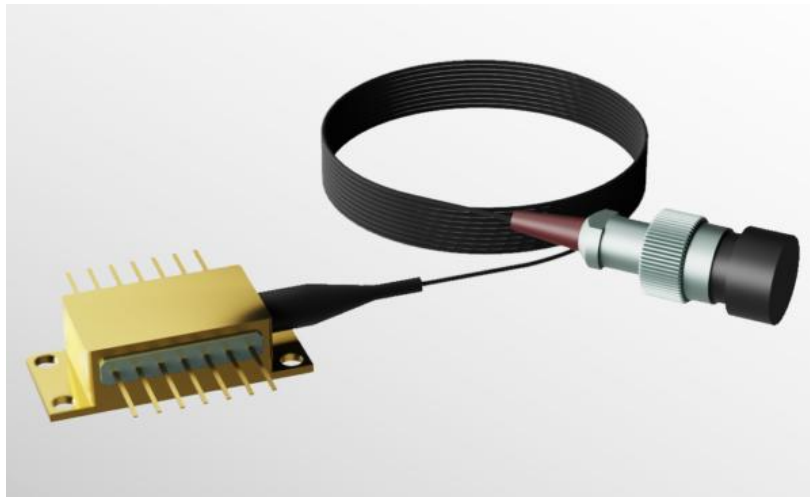


## 830 nm DBR Laser Diode



### ● Product Description

The 830 nm Distributed Bragg Reflector (DBR) high-performance edge-emitting laser diode is based on advanced monolithic integrated single-frequency Gallium Arsenide (GaAs) laser technology. This series of laser diodes outputs single spatial mode laser beams, with passivated facet design to guarantee device reliability. The 830 nm DBR device can serve as a low-noise pumping source, and is widely applied in biomedical diagnosis and imaging fields.



## ● Product features

Excellent spectral performance ; High output power and outstanding operational reliability; Intelligent control and user-friendly usability

## ● Part Number

MP-DBR-830-160-14BF-PA

## ● Application area

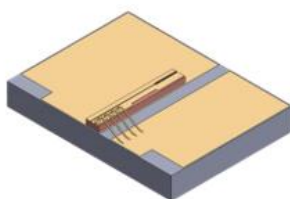
High-end Pumping Applications | Precision Sensing & Measurement Applications

## ● Core parameters

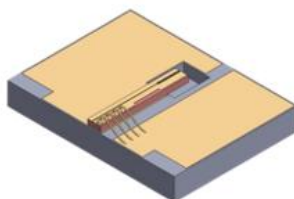
Central Wavelength
830nm

## ● General Parameters

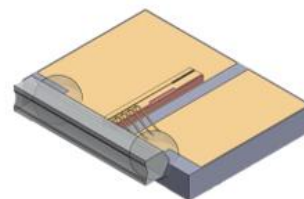
Detailed parameters



Chip on Submount (CoS)



CoS + Mode-Hop Free (MHF)



CoS + Virtual Point Source (VPS) Lens

## 830nm (COS) package characteristics

	Chip architecture
Parameter <sup>1</sup>	High power
Nominal wavelength (nm) <sup>2</sup>	830 ± 0.6
Power range (mW).	80–180
Maximum operating current (CW & Pulsed) (mA).	250
Optical power (mW) at maximum operating current	180
Nominal Slope Efficiency (W/A).	0.85
Nominal threshold current (mA).	50

1. Unless otherwise noted, all parameters are measured at a junction

temperature of 25°C. If used outside of these parameters, the warranty will be void

2. The sealed package may contain a chip-on-substrate (CoS) with a deviation of ±1.2 nm from the nominal value.

## Available free-space package add-ons



TO-8



C-Mount



Transmitter Optical Subassembly (TOSA)

## Laser specifications

Parameters	unit	Minimum	Typical values	Maximum
Storage temperature	°C	0	-	70
Shell operating temperature	°C	5	-	70
Laser chip operating temperature <sup>1</sup>	°C	5	-	45
Laser series resistance	Ω	-	2	-
Forward voltage of the laser at LIV current	V	-	2	-
Nominal laser line width at LIV current	kHz	-	500	-
Beam divergence angle at half-height and full width ( $\theta_{  } \times \theta_{\perp}$ )	°	-	6 x 28	8 x 32
Edge-mode rejection ratio (SMSR)	dB	-	-40	-
Polarization extinction ratio	dB	-17	-20	-
Polarized state of the laser	TE			
Pattern structure	Fundamental mode			
Temperature tuning rate	nm/°C	-	0.06	-
Current tuning rate	nm/mA	-	0.002	-
Laser reverse voltage	V	-	-	0

If not sealed, it is not recommended to use below the dew point

## Freespace Encapsulation add-on specifications

Parameters	unit	Minimum	Typical values	Maximum
Photodiode forward current	mA	-	-	10
Photodiode reverse voltage	V	-	-	50
TEC Current (TOSA)	A	-1.1	-	1.1
TEC Voltage (TOSA)	V	-3.0	-	3.0
TEC current TO-8	A	-1.8	-	1.8
TEC voltage TO-8	V	-2.2	-	2.2
Thermistors	k $\Omega$	-	10	-

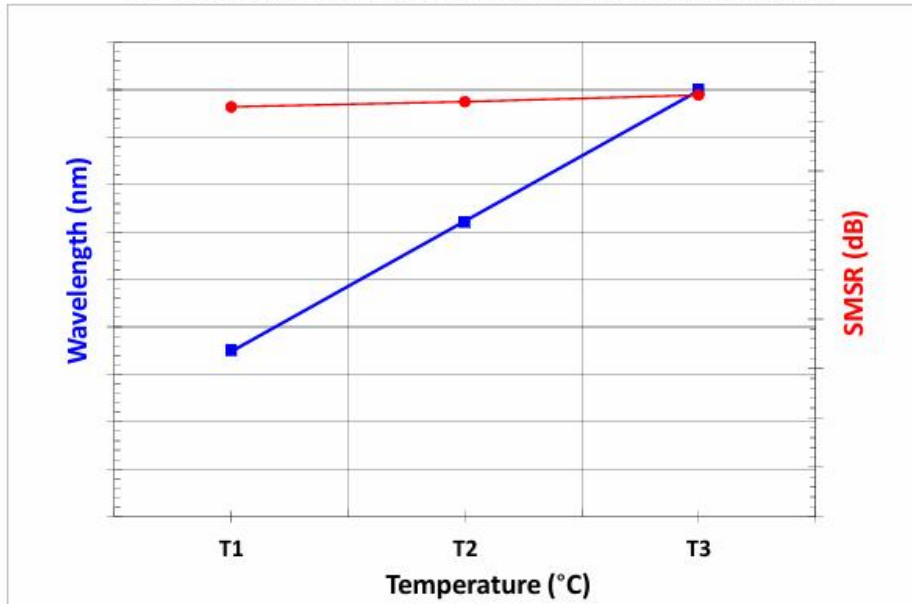
## Handling Precautions

These devices are sensitive to ESD. When handling the module, grounded work area and wrist strap must be used. Always store in an antistatic container with all leads shorted together.





**Air Wavelength Characteristics at Constant Current by Temperature**



**LIV Characteristics by Current**

