

1178nm DFB Laser Diode 50mW



- **Product Description**

1178nm 14PIN Butterfly Package DFB Laser, with integrated TEC, lens, thermistor, and PD in a 14PIN butterfly package. The hermetically sealed design meets telecom-grade operating requirements, featuring narrow linewidth and high power (50mW). It supports PM980 or HI1060 fiber output, and also offers custom pin definitions as requested by the customer.



● Product features

14PIN butterfly sealed package、 Custom wavelengths from 1018-1200nm
 with integrated TEC and thermistor 、 DFB chip, narrow linewidth 、
 PM980/HI1060 fiber pigtail options available

● Part Number

MP-DFB-1178-50-A81-14BF-PA

● Application area

Ultrafast laser SHG seed light

● Core parameters

Wavelength	Optical Power	Fiber Type
1178nm	50mW	PM980-XP

● General Parameters

Optical-Electrical Characteristics (25°C)

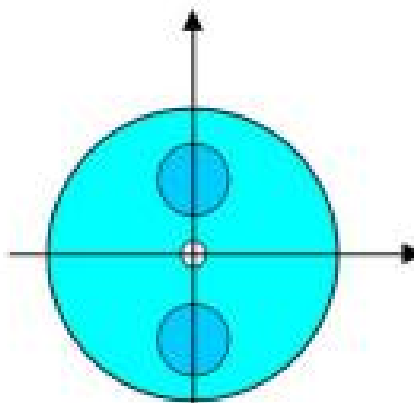
Optical Electrical Characteristics ($T_{CHIP} = 15 - 35 \text{ }^{\circ}\text{C}$, $T_{CASE} = 25 \text{ }^{\circ}\text{C}$, $I_{op} = 150 \text{ mA}$)				
Parameter	Min	Typ.	Max	Unit
Center Wavelength	1176	1178	1180	nm
SMSR	40	50	-	dB
Linewidth	-	5	-	MHz
Optical Power (inside fiber)	30	50	-	mW
Drive Voltage	-	2	2.5	V



Optical Electrical Characteristics ($T_{CHIP} = 15 - 35 \text{ }^{\circ}\text{C}$, $T_{CASE} = 25 \text{ }^{\circ}\text{C}$, $I_{op} = 150 \text{ mA}$)				
Parameter	Min	Typ.	Max	Unit
Drive Current	-	150	250	mA
Mode Hop-Free Current Range	20	50	-	mA
Threshold Current	-	35	-	mA
Slope Efficiency	-	0.25	-	W/A
Current Wavelength Coefficient	-	0.002	-	nm/mA
Temperature Wavelength Coefficient	-	0.08	-	nm/ $^{\circ}\text{C}$
MPD Response Rate	-	0.5	-	A/W
Extinction Ratio	-	16	-	dB

• Fiber Type	PM980-XP
Mode Field Diameter	$6.6 \pm 0.5 \text{ } \mu\text{m} @ 980 \text{ nm}$
Numerical Aperture	0.10
Fiber Length	1.5 m
Connector	FC/APC (2.0 mm Narrow Key)
Loose Tube	$\text{Ø}900 \text{ } \mu\text{m}$

Key Aligned to the Slow axis

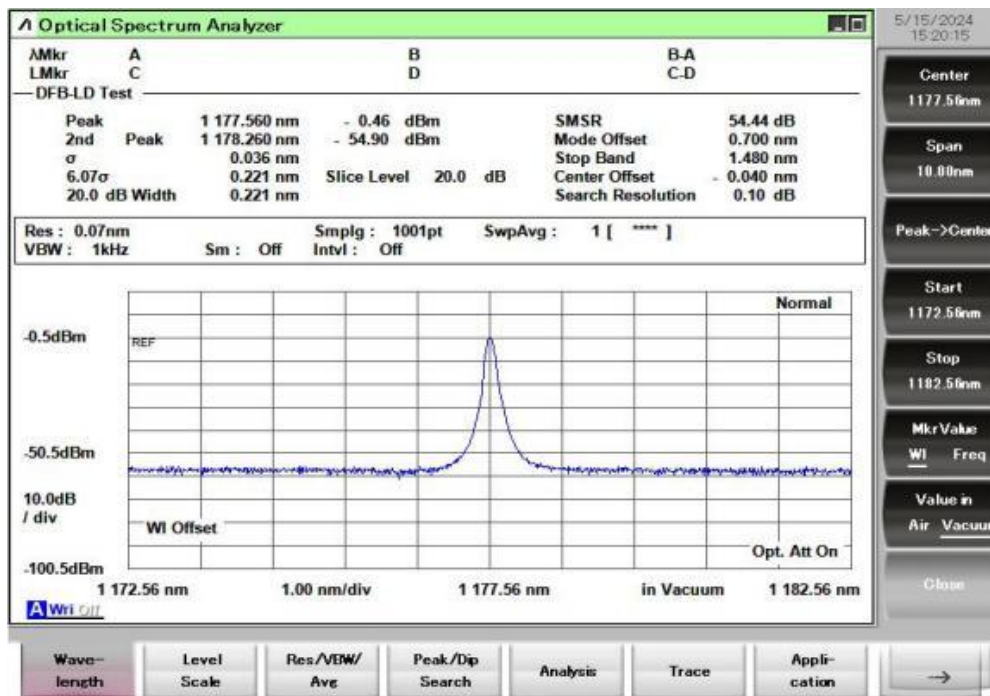




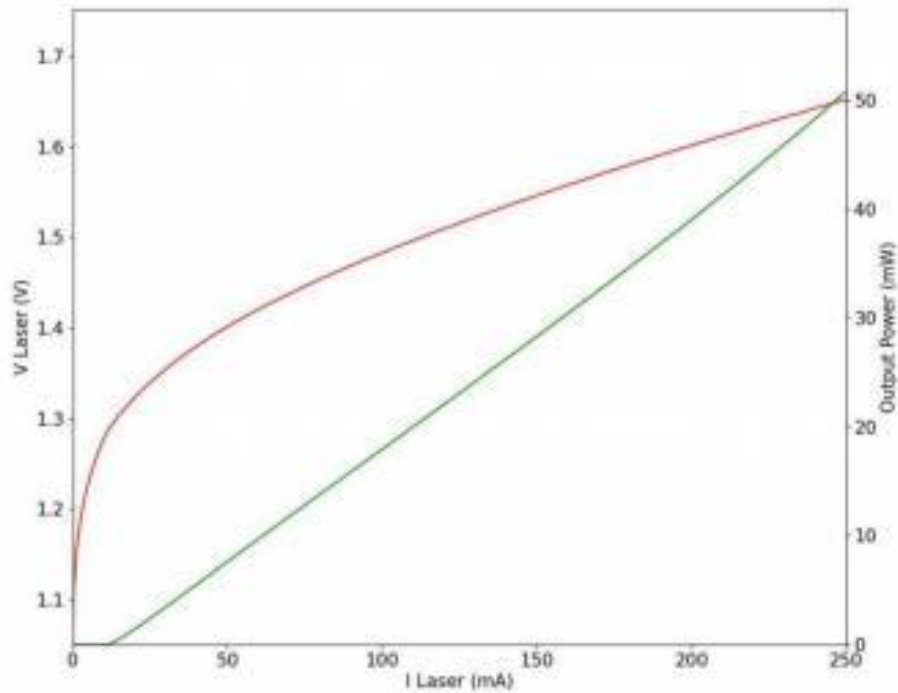
Limiting Parameters

Parameter	Typical Value	Unit
Optical Fiber Power	50	mW
Operating Current	400	mA
LD Reverse Voltage	2	V
PD Reverse Voltage	15	V
Case Operating Temperature	0 to 50	°C
Storage Temperature	-10 to 65	°C
TEC Current	2.5	A
TEC Voltage	4.0	V
Thermistor Resistance	10	kOhms

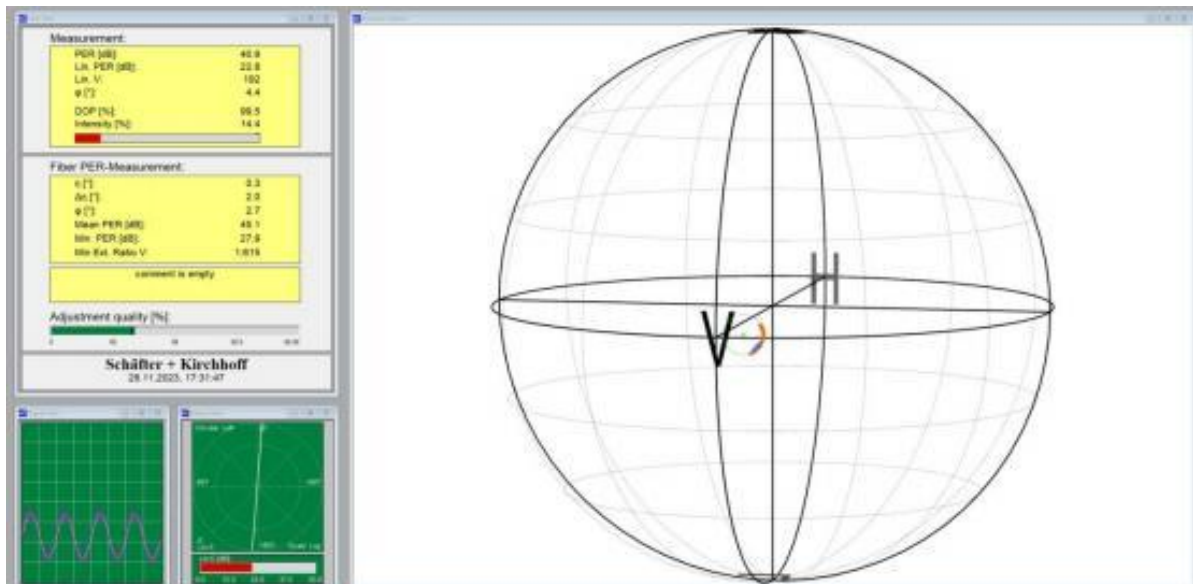
Spectral Analysis



L-I-V Curve

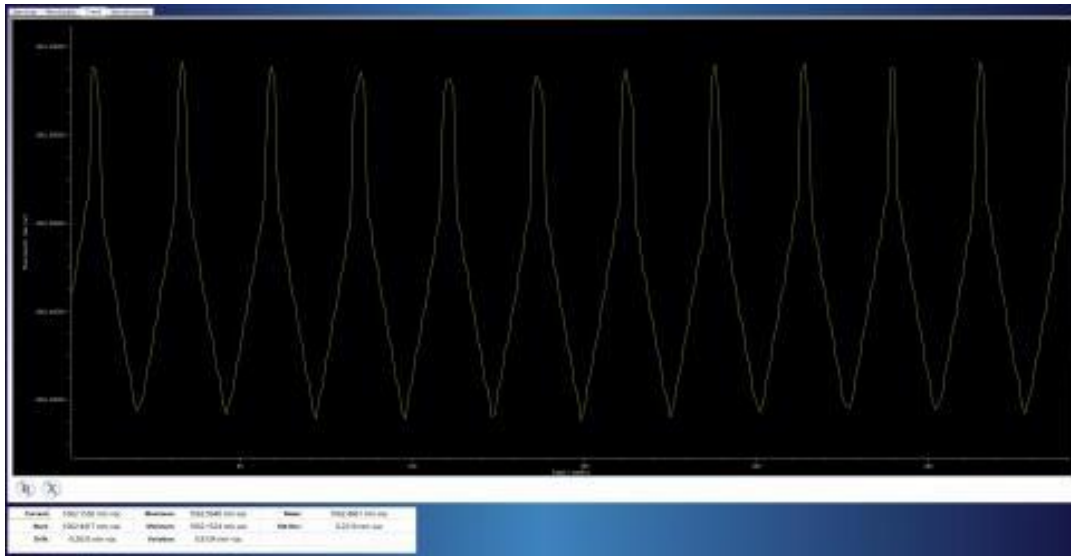


Extinction Ratio Test (Polarization Maintaining Version)



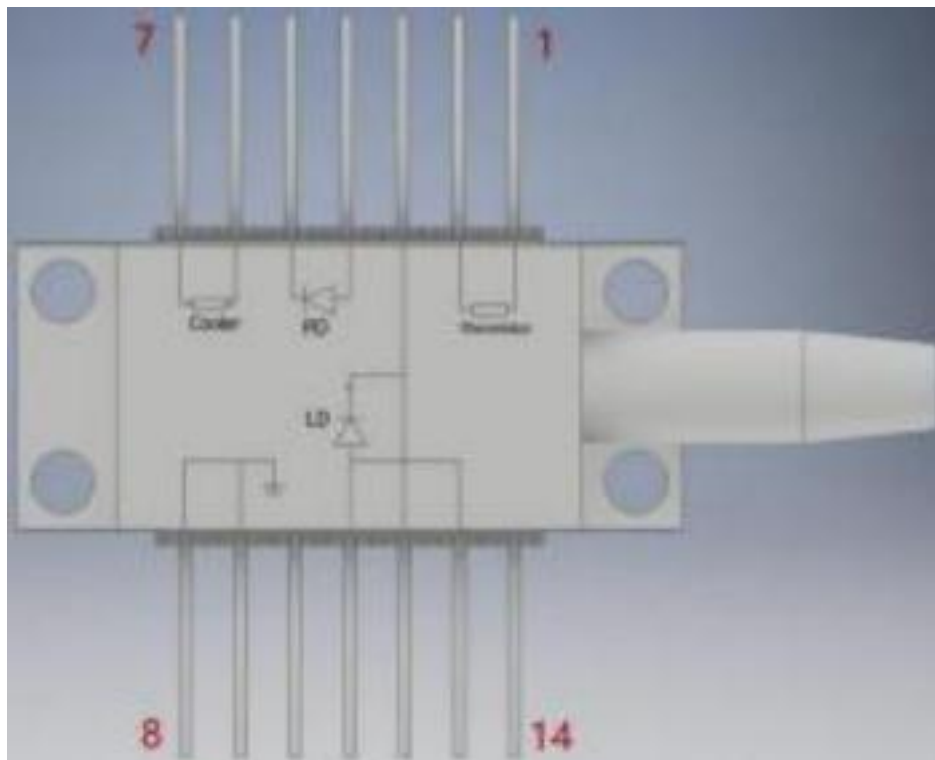


Mode hope tuning Range

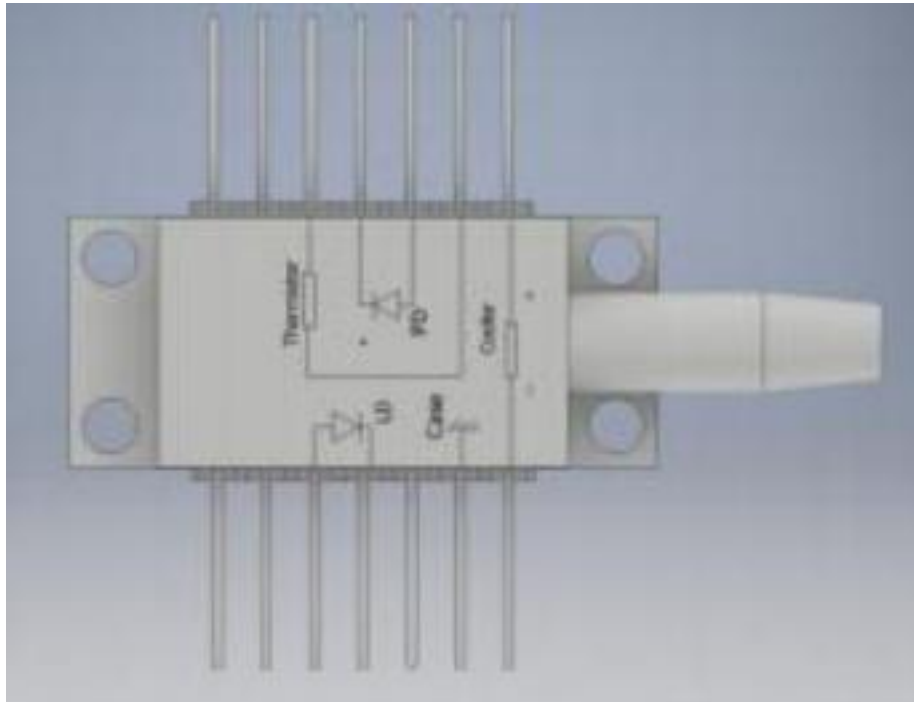


Pin Definition:

Standard A



Standard B



Current-illumination characteristic ($T_{CHIP} = 15 - 35 \text{ }^{\circ}\text{C}$, $T_{CASE} = 25 \text{ }^{\circ}\text{C}$, $I_{op} = 150 \text{ mA}$)				
Parameter	Min	Typ.	Max	Unit
Central wavelength	1026	1028	1030	nm
	1034	1036	1038	
	1058	1060	1062	
	1062	1064	1066	
	1066	1068	1070	
	1082	1084	1086	
SMSR	40	50	-	dB
Linewidth	-	5	-	MHz
Optical power(inside the fiber)	30	50	-	mW
Drive voltage	-	2	2.5	V
Drive current	-	150	250	mA
Mode-hop free range	20	50	-	mA
Threshold current	-	35	-	mA
Slope efficiency	-	0.25	-	W/A
Current wavelength coefficient	-	0.002	-	nm/mA
Temperature wavelength coefficient	-	0.08	-	nm/ $^{\circ}\text{C}$



Current-illumination characteristic ($T_{CHIP} = 15 - 35 \text{ }^{\circ}\text{C}$, $T_{CASE} = 25 \text{ }^{\circ}\text{C}$, $I_{op} = 150 \text{ mA}$)				
Parameter	Min	Typ.	Max	Unit
MPD Responsivity	-	0.5	-	A/W
Extinctive ratio	-	16	-	dB

Ordering Information:

MP-DFB- □□□□-☆-A8▽-XX

□□□□: Wavelength

1018: 1018nm

1030: 1030nm

1053: 1053nm

1064: 1064nm

1084: 1084nm

1120: 1120nm

☆ : Pin Definition

A: Telecom A

B: Pump B

▽ : Wavelength Tolerance

1: $\pm 1\text{nm}$



2: $\pm 2\text{nm}$

XX: Fiber and Connector Type

SA=HI1060+ FC/APC

SP=HI1060+ FC/PC

PA=PM980 Fiber+ FC/APC

PP=PM980 Fiber+ FC/PC

Our default packaging does not include an isolator. If the customer requires an isolator, please add "-ISO" at the end of the model number. The output power with the isolator is guaranteed to be 30mW+.

Eg:

PN#MP-DFB-1178-B-A81-PA-ISO