

C-band Narrow-Linewidth High-Power DFB Lasers (1545–1560 nm)

Overview

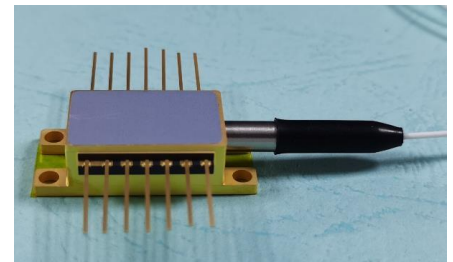
SIMTRUM's DFB narrow-linewidth lasers cover the 1545–1560 nm wavelength range and deliver power up to 80 mW. They offer advantages such as low relative intensity noise (RIN), high output power, low operating current sensitivity, and high stability, and are primarily used in fiber optic communications, fiber optic sensing, and frequency measurement.

Features

- High Stability
- Low Noise

Application

- Fiber Communications
- Fiber Sensing



Available Models: LL-DFB-1578-I-S-0.5-09SMF-FC/APC-5-14

Ordering Information/Product Model								
Series	Wavelength (nm)	Isolator Options	Pin Assignment	Fiber Length (m)	Fiber Type	Connector Type	Output Power (mW)	Packaging
LL-DFB	1578	I = With isolator 0 = Without isolator	N = Type N S = Type S	0.5 = 0.5m	09SMF = 900 μ m SMF 09PMF = 900 μ m PMF	FC/APC FC/PC	5 = 5 mW 10 = 10 mW	14 = 14-pin butterfly M = Module

A. Specifications

Environment Temperature 25 $\pm$ 5 $^{\circ}$ C					
Parameter	Unit	Min. Value	Typical Value	Max. Value	Test Conditions
Center Wavelength (λ_p)	nm	1577.9	1578	1578.1	Po, 15-35 $^{\circ}$ C
Fiber Output Power (Po)	mW	/	5	7	λ_p
Operating Current (Iop)	mA	/	60	100	λ_p
Threshold Current (Ith)	mA	/	12	25	Tchip
Operating Voltage (Vop)	V	/	1.3	2.0	λ_p
Chip Operating Temperature (Tchip)	$^{\circ}$ C	15	25	35	λ_p
Backlight Current (Im)	μ A	30	/	2000	λ_p
Slope Efficiency (η)	mW/mA	0.05	0.1	/	0~Iopmax, Tchip
Side Mode Suppression Ratio (SMSR)	dB	35	45	/	λ_p

B. Limit Conditions

No.	Parameter	Requirement	Unit	Remarks
1	Operating Temperature	-20~+70	℃	
2	Operating Humidity	0~90	%RH	No condensation
3	Storage Temperature	-40~+85	℃	
4	Max. Laser Current	100	mA	
5	TEC Operating Voltage	4.3	V	
6	TEC Operating Current	1.8	A	
7	Pin Soldering Temperature	260 (< 10s)	℃	

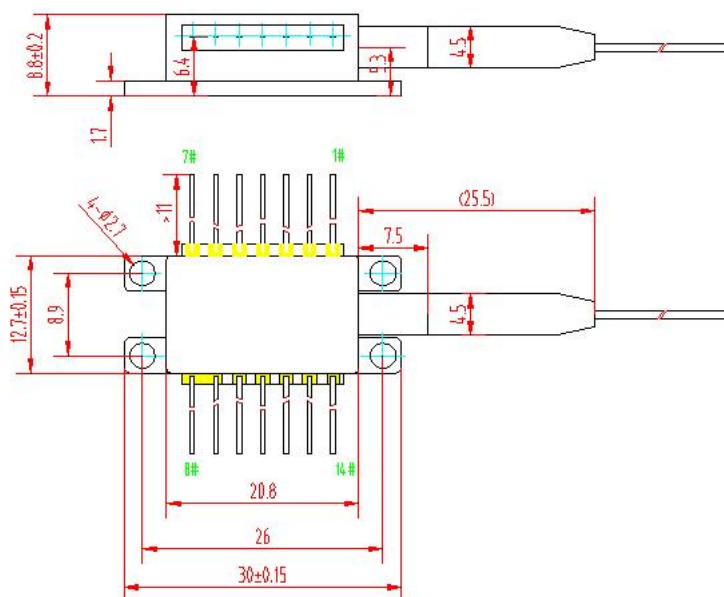
C. Optical Interface Specification

No.	Parameter	Specification Requirements
1	Pigtail Type	G652, Φ 0.9mm, white sleeve
2	Pigtail Length	1 $\pm$ 0.2 m
3	Connector Type	FC/APC

D. Electrical Pin Definition

Pin Number	1	2	3	4	5	6	7
Pin Definition	Thermistor	Thermistor	LD-	MPD+	MPD-	TEC+	TEC-
Pin Number	8	9	10	11	12	13	14
Pin Definition	CASE	CASE	NC	LD+	LD-	LD+	NC

E. Mechanical Schematic Diagram



LL-DFB-S Pin Configuration Dimensions

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SIMTRUM Singapore
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Installation Instructions: Secure the device to the heat sink using four M2 screws through the $\Phi 2.2$ mounting holes. Ensure the bottom surface of the device is clean and free of particles during installation.

F. Product Appearance

