

ITU Grid DFB 14-Pin Butterfly Laser Diodes



Description

The ITU Grid DFB 14-Pin Butterfly Laser Diodes cover customer selection of large wavelengths range from 1270nm to 1650nm which are fabricated in a hermetically sealed 14-pin butterfly package. The laser diodes contains thermoelectric cooler (TEC), thermistor, monitor photodiode and optical isolator to secure high quality laser performance. Firsol laser products are Telcordia GR-468 qualified, and in compliance with RoHS Directives.

Features

- SM or PM Fiber Pigtail
- High Stability and Reliability
- High-Performance DFB Laser Chip

Applications

- DWDM System
- Fiber Optic Sensor
- Laser Source

Specifications

Optical Characteristics (at 25°C Laser Temperature)

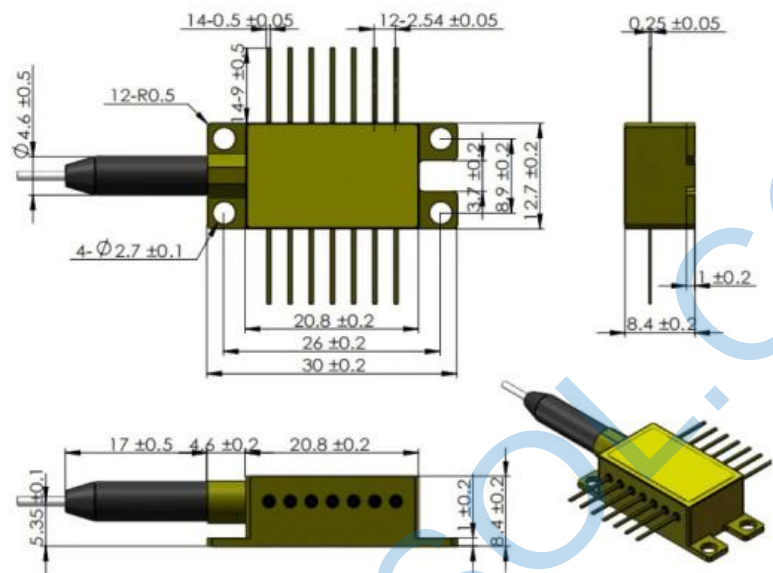
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Channel Wavelength	λ_c	$T_L=15\sim35^\circ\text{C}$, CW	-0.2	ITU Grid	+0.2	nm
Peak Optical Output Power	P_o	-	10	-	-	mW
Spectral Linewidth	LW	FWHM	-	3	5	MHz
Side-Mode Suppression Ratio	SMSR	CW	40	50	-	dB
Polarization Extinction Ratio	PER	PM fiber, slow axis working	20	-	-	dB
Optical Isolation	-	-	30	-	-	dB
Relative Intensity Noise	RIN	20-1000MHz	-	-	-145	dB/Hz
Wavelength Drift (EOL)	$\Delta\lambda$	Tested over 25-year lifetime	-	-	± 0.1	nm
Wavelength Temperature Coefficient	$\Delta\lambda/\Delta T$	TEC temperature at 15°C to 35°C	-	0.09	-	nm/ $^\circ\text{C}$
Wavelength Current Coefficient	$\Delta\lambda/\Delta I$	-	-	0.01	-	nm/mA
Operating Temperature	T_{op}	-	-20	-	+70	$^\circ\text{C}$
Storage Temperature	T_s	-	-40	-	+85	$^\circ\text{C}$

Notes: For PM fiber versions, the fiber slow axis is aligned to the key by default.

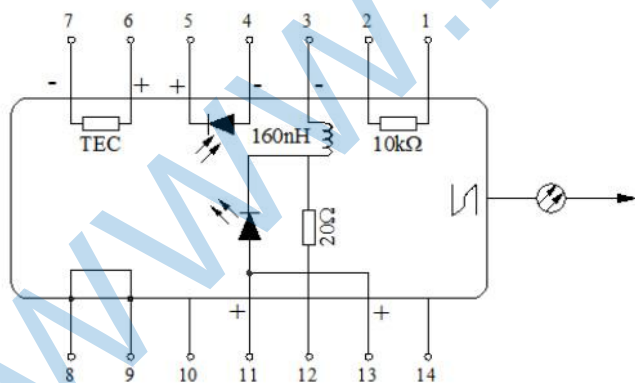
Electrical Characteristics (at 25°C Laser Temperature)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Threshold Current	I_{th}	-	-	10	35	mA
Slope Efficiency	η	$P_o=10\text{mW}$ (CW)	0.05	0.13	0.2	mW/mA
Operating Current	I_{op}	$P_o=10\text{mW}$ (CW)	-	100	150	mA
TEC Set Temperature	T_s	-	15	-	35	$^\circ\text{C}$
Laser Forward Voltage	V_F	$P_o=10\text{mW}$ (CW)	-	1.2	3.0	V
Monitor PD Current	I_{MPD}	$P_o=10\text{mW}$ (CW)	10	-	2500	μA
Monitor Dark Current	I_D	$I_F=0\text{mA}$, $V_{RPD}=5\text{V}$	-	-	0.1	μA
Thermistor Current	I_{TC}	-	10	-	100	μA
Thermistor Resistance	R_{TH}	$T_L=25^\circ\text{C}$	9.5	10	10.5	K Ω
Thermistor Constant	B	-	3800	-	4100	K
TEC Current	I_{TEC}	$T_L=25^\circ\text{C}$, $T_c=70^\circ\text{C}$	-1.5	-	+1.5	A
TEC Voltage	V_{TEC}	$T_L=25^\circ\text{C}$, $T_c=70^\circ\text{C}$	-3.5	-	+3.5	V
TEC Capacity	ΔT	$T_c=70^\circ\text{C}$	-	-	50	$^\circ\text{C}$
Laser Forward Current	I_F	CW	-	-	200	mA
Laser Reverse Voltage	V_{LR}	-	-	-	2	V
PD Forward Current	I_{FPD}	-	-	-	5	mA
PD Reverse Voltage	V_{RPD}	-	-	-	10	V

Product Dimensions (Unit: mm)



Pin Assignments



1	Thermistor
2	Thermistor
3	Laser dc Bias (Cathode) (-)
4	Monitor PD Anode (-)
5	Monitor PD Cathode (+)
6	Thermoelectric Cooler (+)
7	Thermoelectric Cooler (-)
8	Case Ground
9	Case Ground
10	NC
11	Laser Anode (+)
12	Laser RF Cathode (-)
13	Laser Anode (+)
14	NC

Ordering Information

					
Channel Wavelength	Output Power	Fiber Type	Pigtail Length	Pigtail Diameter	Connector
C27	1mW	SM Fiber	0.5m	250μm Bare Fiber	None
C29	5mW	PM Fiber	1.0m	900μm Loose Tube	LC/UPC
C31	10mW		1.5m		LC/APC
C33	20mW		2.0m		SC/UPC
Custom	40mW				SC/APC
	60mW				FC/UPC
	80mW				FC/APC
	Custom				ST/UPC
					ST/APC