

Wavelength Specific Laser Source (WSLS) Specification

1. Product Information

PN: WSLS-934013C4124-46

Description: WSLS with DFB LD chip, wavelength $1550.12 \pm 0.20\text{nm}$, power $\geq 20\text{mw}$, 14-pin butterfly package built-in optical isolator and thermoelectric cooler $1.0 \pm 0.1\text{m}$ polarization-maintaining optical fibre pigtail with 900um loose tube, FC/APC connector.

2. Edit History

Edit	Annotate	Initiator	Check	Approve	Date
V0	New Release	HSN			2020-12-18

3. Product Specification

3.1 Extremum

Parameters	Symbol	Min	Max	Unit
Laser Reverse Voltage	V_{RLMAX}	—	2.0	V
Forward Current	I_{FLMAX}	—	120	mA
Operating Temperature Range	T_O	-20	70	°C
Storage Temperature Range	T_{stg}	-40	85	°C
Photodiode Reverse Voltage	V_{RPDMAX}	—	10	V
Photodiode Forward Current	I_{FPDMAX}	—	2	mA
Thermistor Temperature	—	—	100	°C
Cooler Current	—	—	1.9	A

3.2 Electrical Character

Parameters	Symbol	Test Conditions	Min	Typ	Max	Unit
Peak Optical Output Power	P_P	—	20	—	—	mW
Threshold Current	I_{TH}	CW	—	14	25	mA
Driving Current	—	$P_O = 20\text{mW}$	—	—	120	mA
Laser Forward Voltage	V_{LF}	$P_O = 20\text{mW}$	—	—	2.0	V
Laser Operating Temperature	T_{LD}	—	15	—	35	°C
Monitor Reverse Voltage	V_{RMON}	—	—	5	10	V
Monitor Current	I_{RMON}	$P_O = 20\text{mW}$	0.01	—	2	mA
Monitor Dark Current	I_D	$I_F = 0\text{mA}, V_{RMON} = 5\text{V}$	—	0.01	0.1	μA
Input Resistance	Z_{IN}	—	—	25	—	Ω
Thermistor Current	I_{TC}	—	10	—	100	μA
Thermistor Resistance	R_{TH}	$T_L = 25^\circ\text{C}$	9.5	—	10.5	kΩ
TEC Current	I_{TEC}	$T_L = 25^\circ\text{C},$ $T_{around} = 70^\circ\text{C}$	—	—	1.2	A
TEC Voltage	V_{TEC}	$T_L = 25^\circ\text{C},$ $T_{around} = 70^\circ\text{C}$	—	—	3.5	V

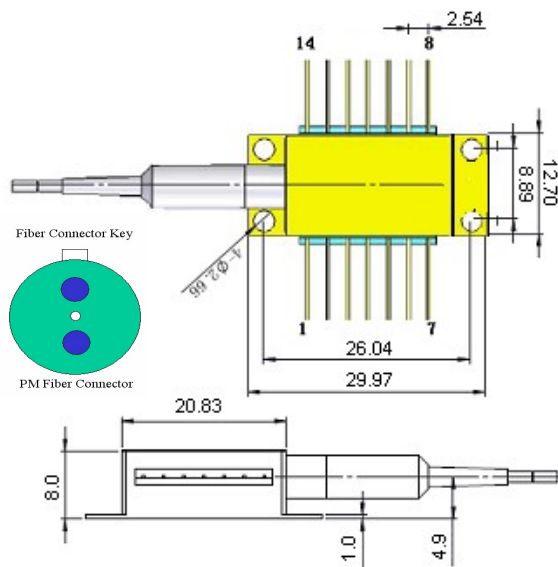
3.3 Fiber & Connector

Parameters	Symbol	Description	Min	Typ	Max	Unit
Pigtail length	L	PM Fiber	0.9	—	1.1	m
Connector Type	—	FC/APC	—	—	—	—

3.4 Optical Character

Parameters	Symbol	Test Conditions	Min	Typ	Max	Unit
Center Wavelength	λ_c	CW $T_L=15\sim 35^\circ\text{C}$	1549.92	1550.12	1550.32	nm
Linewidth	LW	CW 20mW	—	3	—	MHz
Bandwidth (@-3dB)	BW	20mW, -3dB	2.5	—	—	GHz
Side-mode Suppression Ratio	SMSR	CW	35	42	—	dB
Optical Isolation	—	$0^\circ\text{C}\sim 70^\circ\text{C}$	20	—	40	dB
Wavelength Drift	—	25 years	—	—	± 0.1	nm
Wavelength/ Temperature Coefficient	$d\lambda/dT$	—	—	0.09	—	nm/ $^\circ\text{C}$
Dynamic Spectral Width	$\Delta\lambda$	2.5GHz, @-20dB	—	0.22	—	nm
Extinction Ratio	ER	$I_F=30\text{mA}$ polarization // slow axis	18	23	—	dB

4. Diagram (unit: mm)

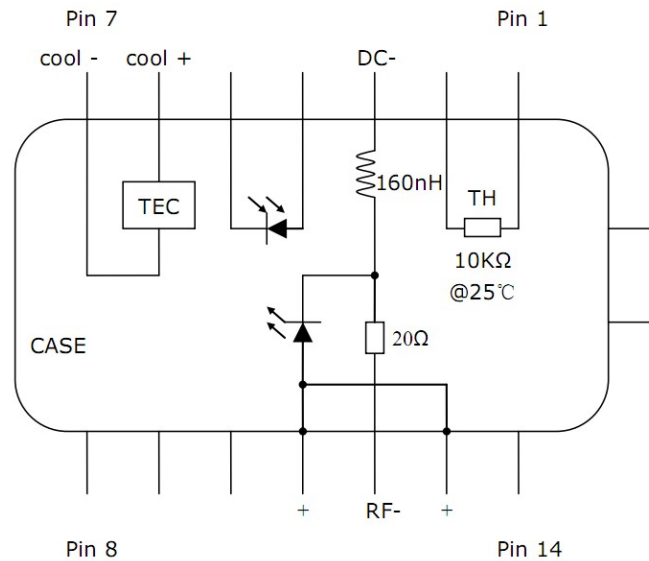


Pin No.	Pin Function
1	Thermistor
2	Thermistor
3	Laser DC bias cathode (-)
4	PD monitor anode (-) ¹
5	PD monitor cathode (+) ²
6	Thermoelectric cooler (+)
7	Thermoelectric cooler (-)
8	NC
9	NC
10	NC
11	Laser anode (+),Case
12	Laser RF cathode(-)
13	Laser anode (+),Case
14	NC

¹ PD works in reverse, PD anode is reverse cathode(-).

² PD works in reverse, PD cathode is reverse anode (+).

5. Circuitry



6. Test Report List

Product with a datasheet which contains data as follow:

-Optical Output Power, Center Wavelength, P-I curve, Power stability, Wavelength stability.

7. Packaging

Vacuumize black anti-static plastic package.

The label on the C16 packing box should include the following information:

- Laser type- Wavelength
- PN
- PN bar code
- SN
- SN bar code