

2.5Gbps 1310nm DFB Laser

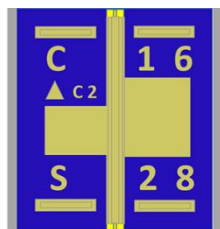
The laser is a ridge structure design with multi-quantum well (MQW) active layers and a distributed-feedback (DFB) grating. This high performance and reliability laser is suitable for GPON and other data communication applications.

Features:

- AlGaInAs MQW(Multiple Quantum Well)
- Single mode
- Edge-emitting
- Low threshold current
- High output power
- Narrow beam divergence angle
- Operating temperature -5°C to 85°C
- RoHS compliant and design for Telcordia-GR468

Applications:

- Uncooled applications
- PON



Absolute maximum ratings:

Parameter	Symbol	Min.	Max.	Unit
Storage Temperature	T _s	-40	100	°C
Forward current	I _f	--	120	mA
Forward power**	P _f	--	40	mW
Reverse Voltage	V _R	--	2	V
ESD(HBM)	ESD	--	500	V

Electro-Optical Characteristics:

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Threshold Current	I _{th}	T _c =25°C & CW	--	10	15	mA
		T _c =85°C & CW	--	18	35	mA
Slope Efficiency	η	T _c =25°C & CW	0.45	0.5	--	W/A
		T _c =85°C & CW	0.28	--	--	W/A
Optical Output Power	P _f	T _c =25°C & CW I _{th} +20mA	9	--	--	mW
Series Resistance	R _s	T _c =25°C & CW	--	--	15	Ohm
Peak Wavelength	λ _p	T _c =25°C & CW I _{th} +20mA	1300	1310	1320	nm
		T _c =85°C & CW I _{th} +20mA	1300	--	1320	nm
Side Mode Suppression Ratio	SMSR ₀	T _c =-5 to & 85°C I _{th} +20mA	35	--	--	dB
Farfield (Vertical)	θ _v	T _c =25°C & CW I _{th} +20mA	--	21	--	°
Farfield (Horizontal)	θ _h	T _c =25°C & CW I _{th} +20mA	--	20	--	°

10G CWDM DFB

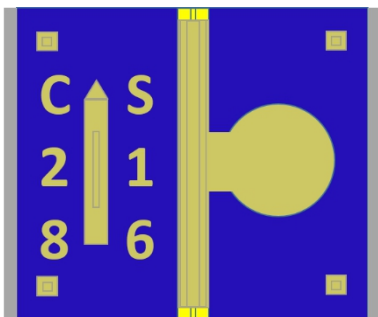
The laser is a ridge-type structure with multi-quantum well (MQW) active layers and a distributed feedback (DFB) grating with direct modulation bandwidth up to 15GHz.

Features:

- Single mode
- Edge-emitting
- Operating temperature -40~85 °C
- Good uniformity
- RoHS compliant and design for Telcordia-GR468
- For =1471nm, 1491nm, 1511nm, 1531nm, 1551nm, 1571nm

Applications:

- Uncooled applications
- Gigabit Ethernet
- Data Center



Absolute maximum ratings:

Parameter	Symbol	Min.	Max.	Unit
Operating Temperature	T _o	-40	85	°C
Storage Temperature	T _s	-40	100	°C
Forward current	I _f	--	80	mA
Forward power**	P _f	--	25	mW
Reverse Voltage	V _R	--	2	V
ESD(HBM)	ESD	--	500	V

Electro-Optical Characteristics:

Parameter	Symbol	Test Conditions	Unit	Min.	Typ.	Max.
Threshold Current	I _{th}	T _c =25 °C & CW	mA	--	8	--
		T _c =85 °C & CW	mA	--	20	25
Slope Efficiency	η	T _c =25 °C & CW	W/A	0.25	--	--
Optical Output Power	P _f	T _c =25 °C & CW I _{th} +20mA	mW	5	6	--
		T _c =85 °C & CW I _{th} +20mA	mW	2.5	3	--
Operating Voltage	V _f	T _c =25 °C & CW I _{th} +20mA	V		1.2	1.5
Series Resistance	R _s	T _c =25 °C & CW	Ohm	--	--	12
Peak Wavelength	λ _p	T _c =25 °C & CW I _{th} +20mA	nm	λ-3	λ	λ+3
Wavelength/Temperature Coefficient	dλ/dT	T=-40~85 °C	nm/°C	--	0.09	--
Spectral Width(-20 dB)	λ	T _c =25 °C & I _{th} +20mA	nm		0.3	1
Side Mode Suppression Ratio	SMSR ₁	T _c =25 °C & CW I _{th} +20mA	dB	38	40	--
	SMSR ₂	T _c =85 °C & CW I _{th} +20mA	dB	35	37	--
Modulation Bandwidth (-3dB)	BW	T _c =25 °C & CW I _{th} +20mA	GHZ	10	15	

1000um 1310 DFB Laser

The laser is a ridge structure design with multi-quantum well (MQW) active layers and a distributed feedback (DFB) grating with output power up to 70mW.

Features:

- Single mode
- Edge-emitting
- AlGaInAs MQW(Multiple Quantum Well)
- High output power
- RoHS compliant and design for Telcordia-GR468
- Operating Temperature 0~70°C

Applications:

- Gigabit Ethernet
- CW(Continuous Wave)
- Silicon Photons



60mW Electro-Optical Characteristics:

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Threshold Current	I _{th}	T _c =25°C & CW	--	25	--	mA
Slope Efficiency	η	P=10mW, T _c =25°C & CW	--	0.3	--	W/A
Operating Current	I _{OP}	P=60mW, T _c =70°C & CW	--	270	350	mA
		P=60mW, T _c =25°C & CW	--	200	250	mA
Series Resistance	R _s	T _c =25°C & CW	--	2	6	Ohm
Peak Wavelength	λ _p	-5~70°C, P=70mW & CW	1300	1310	1320	nm
Side Mode Suppression Ratio	SMSR ₀	T _c =25°C & CW 300mA	50	55	--	dB
Farfield (Vertical)	θ _v	T _c =25°C & CW 300mA	--	25	--	°
Farfield (Horizontal)	θ _h	T _c =25°C & CW 300mA	--	15	--	°

70mW Electro-Optical Characteristics:

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Threshold Current	I _{th}	T _c =25°C & CW	--	25	--	mA
Slope Efficiency	η	P=10mW, T _c =25°C & CW	--	0.3	--	W/A
Operating Current	I _{OP}	P=70mW, T _c =70°C & CW	--	270	350	mA
		P=70mW, T _c =25°C & CW	--	200	250	mA
Series Resistance	R _s	T _c =25°C & CW	--	2	6	Ohm
Peak Wavelength	λ _p	-5~70°C, P=70mW & CW	1300	1310	1320	nm
Side Mode Suppression Ratio	SMSR ₀	T _c =25°C & CW 300mA	50	55	--	dB
Farfield (Vertical)	θ _v	T _c =25°C & CW 300mA	--	25	--	°
Farfield (Horizontal)	θ _h	T _c =25°C & CW 300mA	--	15	--	°

2.5G 1310nm DFB TO56

SHIJIA's 2.5G 1310nm DFB TO56 uncooled, hermetically sealed, 4pin TO-56 style packages are a cost-effective means of providing a low-noise light source.

Features:

- Uncooled operation
- 1310nm 2.5G DFB laser
- High stability and reliability
- TO56 package with Big Lens Cap
FL=6.6mm
- Operating case temperature: -5 to 85°C
- Qualified meet ROHS requirement

Applications:

- PON /Access /Optical Ethernet /SDH /FTTx Networks Metro Area Networks
- Data communications
- Point-to-point fiber optic links
- Other optical transmission system



Optical and Electrical Characteristics(Tc=25°C±2°C, Unless otherwise noted):

Parameter	Symbol	Min	Typ	Max	Units	Notes
Threshold Current	I _{th}		10	15	mA	CW, T _c =25°C
			18	40	mA	CW, T _c =85°C
Optical Output Power	P _o	7			mW	T _c =25°C I _f =I _{th} +20mA
Slope Efficiency	SE	0.35			mW/mA	T _c =25°C , I _f =I _{th} +20mA
Centre Wavelength	λ	1290	1310	1330	nm	CW, I _f =I _{th} +20mA
Optical Spectrum Width	Δλ			1	nm	CW I _f =I _{th} +20mA , at -20dB
Side Mode Suppression Ratio	SMSR	30			dB	CW, I _f =I _{th} +20mA
Monitor Current	I _m	100		1000	uA	I _f =I _{th} +20mA
Monitor Dark Current	I _d			100	nA	V=-5V
Focal Length	FL	6.3	6.6	6.9	mm	

***Remark: Power can be optimized per customer's requirement**

2.5G 1550nm DFB TO56 for E-Tem

SHIJIA's 2.5G 1550nm DFB TO56 uncooled, hermetically sealed, 4pin TO-56 style packages are a cost-effective means of providing a low-noise light source.

Features:

- Uncooled operation
- 1550nm 2.5G DFB laser
- High stability and reliability
- TO56 package with Aspherical Lens Cap FL=7.5mm
- Operating case temperature: -20 to 85°C
- Qualified meet ROHS requirement

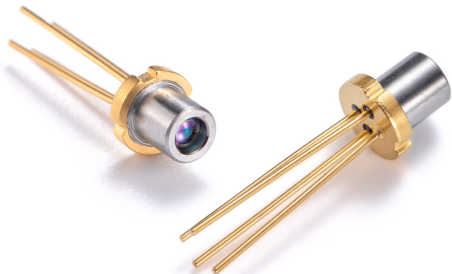
Applications:

- PON /Access /Optical Ethernet /SDH /FTTx Networks Metro Area Networks
- Data communications
- Point-to-point fiber optic links
- Other optical transmission system

Optical and Electrical Characteristics(Tc=25°C±2°C, Unless otherwise noted):

Parameter	Symbol	Min	Typ	Max	Units	Notes
Threshold Current	I _{th}		10	15	mA	CW, T _c =25°C
			25	40	mA	CW, T _c =85°C
Optical Output Power	P _o	5			mW	T _c =25°C I _f =I _{th} +20mA
Slope Efficiency	SE	0.25			mW/mA	T _c =25°C , I _f =I _{th} +20mA
Centre Wavelength	λ	1540	1550	1560	nm	CW, I _f =I _{th} +20mA
Optical Spectrum Width	Δλ			1	nm	CW I _f =I _{th} +20mA , at -20dB
Side Mode Suppression Ratio	SMSR	30			dB	CW, I _f =I _{th} +20mA
Monitor Current	I _m	100		1000	uA	I _f =I _{th} +20mA
Monitor Dark Current	I _d			100	nA	V=-5V
Focal Length	FL	7.0	7.5	8.0	mm	

***Remark: Power can be optimized per customer's requirement**



10G 1471nm CWDM DFB TO56 for E-Temp

The SHIJIA's 10G 1471nm CWDM DFB TO56 for use in uncooled applications up to 10Gbps. The TO device is available in hermetic TO-56 package with a aspherical lens and integrated InGaAs monitoring photo diode.

Features:

- High stability and reliability
- Hermetic TO56 package with Aspherical Lens Cap FL=7.5mm
- Operating case temperature: -20 to 85°C
- Integrated 10G CWDM DFB LD Chip
- Uncooled operation
- Low threshold current
- Integrated InGaAs monitoring photodiode
- Qualified as per intent of Telcordia GR-468
- RoHS compliant

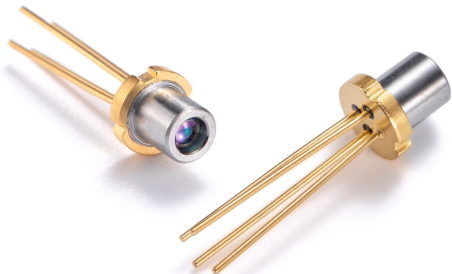
Applications:

- 10 Gigabit Ethernet
- Data communications
- Point-to-point fiber optic links
- Fiber Channel

Optical and Electrical Characteristics(Tc=25°C±2°C, Unless otherwise noted):

Parameter	Symbol	Min	Typ	Max	Units	Notes
Threshold Current	I _{th}		10	12	mA	CW, T _c =25°C
			20	25	mA	CW, T _c =85°C
Optical Output Power	P _o	5.0			mW	T _c =25°C I _f =I _{th} +20mA
Slope Efficiency	SE	0.25			mW/mA	T _c =25°C , I _f =I _{th} +20mA
Centre Wavelength	λ	1468	1471	1474	nm	CW, I _f =I _{th} +20mA
Optical Spectrum Width	Δλ			1	nm	CW I _f =I _{th} +20mA , at -20dB
Side Mode Suppression Ratio	SMSR	30			dB	CW, I _f = I _{th} +20mA
Monitor Current	I _m	50		1000	uA	I _f =I _{th} +20mA
Monitor Dark Current	I _d			100	nA	V=-5V
Focal Length	FL	7.2	7..5	7.8	mm	

***Remark: Power can be optimized per customer's requirement**



10G 1491nm CWDM DFB TO56 for E-Temp

The SHIJIA's 10G 1491nm CWDM DFB TO56 for use in uncooled applications up to 10Gbps. The TO device is available in hermetic TO-56 package with a aspherical lens and integrated InGaAs monitoring photo diode.

Features:

- High stability and reliability
- Hermetic TO56 package with Aspherical Lens Cap FL=7.5mm
- Operating case temperature: -20 to 85°C
- Integrated 10G CWDM DFB LD Chip
- Uncooled operation
- Low threshold current
- Integrated InGaAs monitoring photodiode
- Qualified as per intent of Telcordia GR-468
- RoHS compliant

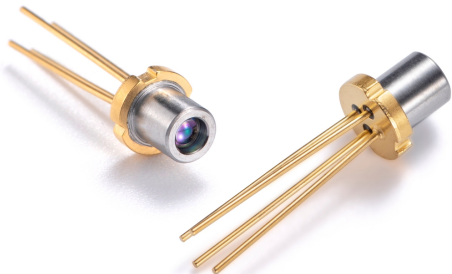
Applications:

- 10 Gigabit Ethernet
- Data communications
- Point-to-point fiber optic links
- Fiber Channel

Optical and Electrical Characteristics(Tc=25°C±2°C, Unless otherwise noted):

Parameter	Symbol	Min	Typ	Max	Units	Notes
Threshold Current	I _{th}		10	12	mA	CW, T _c =25°C
			20	25	mA	CW, T _c =85°C
Optical Output Power	P _o	5.0			mW	T _c =25°C I _f =I _{th} +20mA
Slope Efficiency	SE	0.25			mW/mA	T _c =25°C , I _f =I _{th} +20mA
Centre Wavelength	λ	1488	1491	1494	nm	CW, I _f =I _{th} +20mA
Optical Spectrum Width	Δλ			1	nm	CW I _f =I _{th} +20mA , at -20dB
Side Mode Suppression Ratio	SMSR	30			dB	CW, I _f = I _{th} +20mA
Monitor Current	I _m	50		1000	uA	I _f =I _{th} +20mA
Monitor Dark Current	I _d			100	nA	V=-5V
Focal Length	FL	7.2	7.5	7.8	mm	

***Remark: Power can be optimized per customer's requirement**



1310nm Uncooled High-Power DFB TO56

SHIJIA's 1310nm High-Power DFB TO56 uncooled, hermetically sealed, 3pin or 4pin TO-56 style packages are a cost-effective means of providing a low-noise light source.

Features:

- Uncooled operation
- 1310nm High-Power DFB laser
- High stability and reliability
- TO56 package with Aspherical Lens Cap
FL=7.8mm
- Operating case temperature: 0 to 70°C
- Qualified meet ROHS requirement

Applications:

- Optical fiber sensor
- Other optical transmission system



Optical and Electrical Characteristics(Tc=25°C±2°C, Unless otherwise noted):

Parameter	Symbol	Min	Typ	Max	Units	Notes
Threshold Current	I _{th}		23	55	mA	CW, T _c =25°C
Output Current	I		150	250	mA	T _c =25°C , P _f =40mW
Centre Wavelength	λ	1300	1310	1320	nm	CW, I _r =200mA
Optical Spectrum Width	Δλ			1	nm	CW I _r =200mA , at -20dB
Side Mode Suppression Ratio	SMSR	30			dB	CW, I _f = 200mA
Monitor Current	I _m	50		4000	uA	I _r =200mA
Monitor Dark Current	I _d			100	nA	V=-5V
Focal Length	FL	7.3	7.8	8.3	mm	

***Remark: Power can be optimized per customer's requirement**

1310nm Uncooled High-Power DFB TOSA

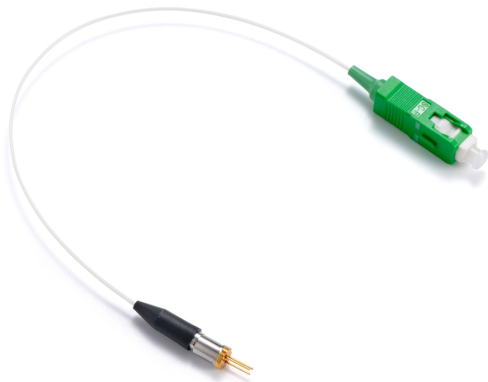
SHIJIA's 1310nm Uncooled High-Power DFB TOSA style packages are a cost-effective means of providing a low-noise light source.

Features:

- Uncooled operation
- 1310nm High-Power DFB laser
- High stability and reliability
- Different connectors :SC/APC,LC/APC.FC/APC
- Operating case temperature: 0to 70°C
- Qualified meet ROHS requirement

Applications:

- Optical fiber sensor
- Other optical transmission system



Optical and Electrical Characteristics(Tc=25°C±2°C, Unless otherwise noted):

Parameter	Symbol	Min	Typ	Max	Units	Notes
Threshold Current	I _{th}		23	55	mA	CW,T _c =25°C
Output Current	I		150	250	mA	T _c =25°C , P _f =20mW
Centre Wavelength	λ	1300	1310	1320	nm	CW, I _r =200mA
Optical Spectrum Width	Δλ			1	nm	CW I _r =200mA , at -20dB
Side Mode Suppression Ratio	SMSR	30			dB	CW, I _f = 200mA
Monitor Current	I _m	50		4000	uA	I _r =200mA
Monitor Dark Current	I _d			100	nA	V=-5V
Focal Length	FL	7.3	7.8	8.3	mm	

***Remark: Power can be optimized per customer's requirement**

C-Band Cooled High-Power DFB TOSA

SHIJIA's C-Band Cooled High-Power DFB TOSA style packages are a cost-effective means of providing a low-noise light source.

Features:

- TEC (Thermo-Electric Cooler) for temperature control
- C-Band High-Power DFB laser
- High stability and reliability
- Different connectors :SC/APC,LC/UPC.FC/APC / LC receptacle ...
- Operating case temperature: 0to 70°C
- Qualified meet ROHS requirement
- Built-in optical isolator

Applications:

- Optical fiber sensor
- Other optical transmission system



Optical and Electrical Characteristics(Tc=25°C±2°C, Unless otherwise noted):

Parameter	Symbol	Min	Typ	Max	Units	Notes
Threshold Current	I _{th}		50	75	mA	CW,T _c =25°C
Output Power	P	15	20		mW	T _c =25°C , I=200mA
Centre Wavelength	λ		1550		nm	CW, I _r =200mA
Optical Spectrum Width	Δλ			1	nm	CW I _r =200mA , at -20dB
Side Mode Suppression Ratio	SMSR	30			dB	CW, I _r = 200mA
Monitor Current	I _m	50		4000	uA	I _r =200mA
Monitor Dark Current	I _d			100	nA	V=-5V
TEC Voltage	V _{TEC}			1.1	V	
TEC Current	I _{TEC}			1.2	A	
Thermistor resistance	R _{th}	9.5	10	10.5	kΩ	T _c =25°C
TEC Power Dissipation	P _{TEC}			1.2	W	

*Remark:

- 1、 Power can be optimized per customer's requirement
- 2、 TEC set point temperature: according to Customer's requirement to set