

Sumitomo Electric Industries, Ltd.

Part No. : SLA562x/565x Series

Document No. : HUW9723016-01G

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Technical Specification

of

1.48 μ m Pumping Laser Diode Module
with SMF/PMF Fiber Grating

SLA 562x Series

SLA 565x Series

Sumitomo Electric Industries, Ltd.

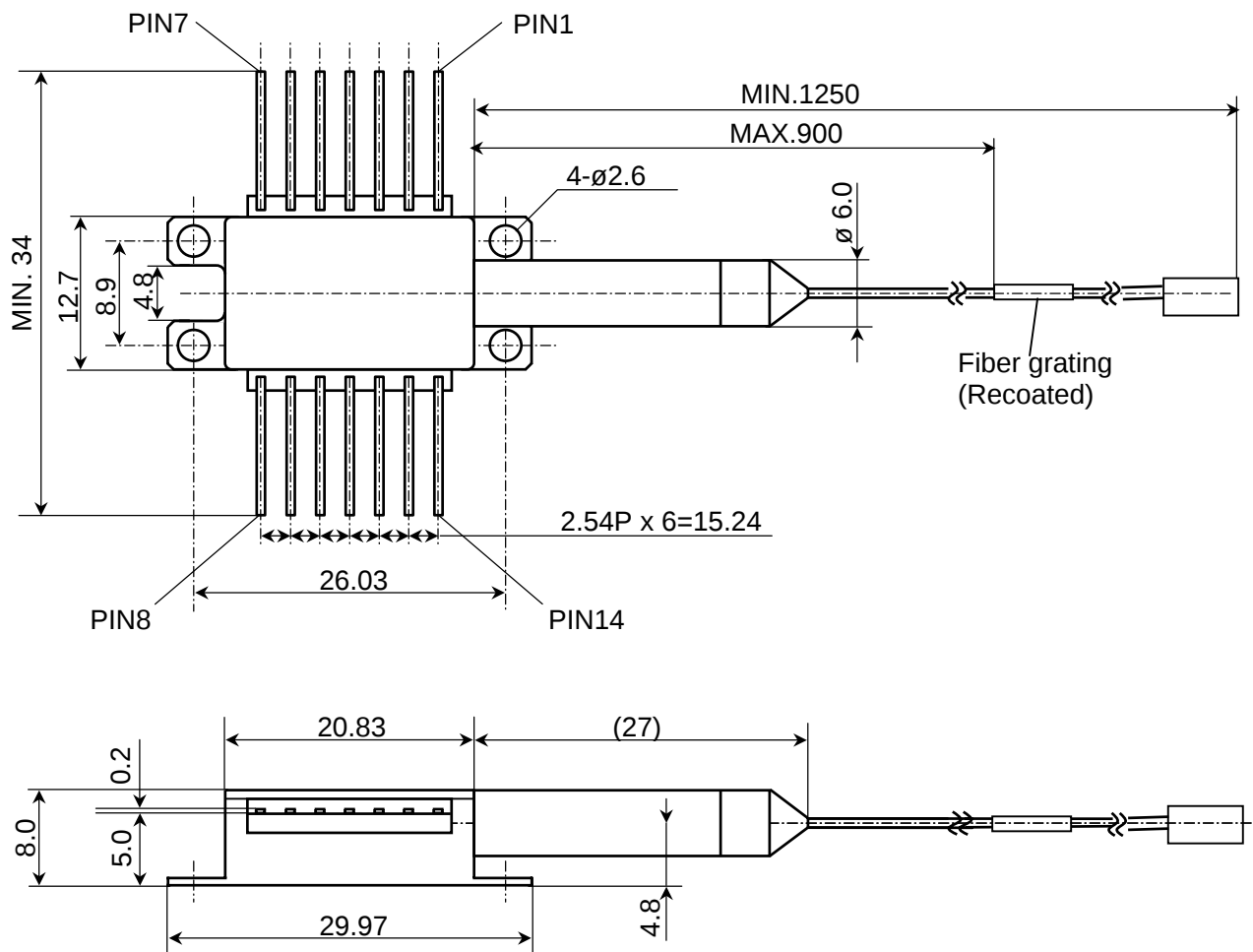
1. General

SLA562x/SLA565x series are 1.48 μ m InGaAsP/InP MQW laser diode modules combined with a fiber grating designed for a pumping source of an Er doped fiber amplifier (EDFA) and Raman amplifier. Features of the devices are high controllability of wavelength, high optical output power, and high reliability.

A laser diode is mounted in a cooled 14-pin "butterfly" package integrated with a single mode (SM)/polarization maintaining(PM) fiber pigtail and an InGaAs monitor PD. No optical isolator is integrated. (US patent number : 5,845,030)

2. Package dimension and pin assignment

(unit : mm, tolerance : ± 0.15)



Pin No.	Function	Pin No.	Function
1	TEC Anode	14	TEC Cathode
2	Thermistor	13	Case Ground
3	Monitor PD Anode	12	NC
4	Monitor PD Cathode	11	LD Cathode
5	Thermistor	10	LD Anode
6	NC	9	NC
7	NC	8	NC

3. Absolute maximum ratings

Parameter	Symbol	Min.	Max.	Unit
Storage temperature	Tstg	-40	70	°C
Operating case temperature	Tc	0	65	°C
LD forward current	IfL	-	900	mA
LD reverse voltage	VrL	-	2	V
LD reverse current	IrL	-	10	μA
PD forward current	IfP	-	10	mA
PD reverse voltage	VrP	-	15	V
PD reverse current	IrP	-	2	mA
Thermistor current	Itherm	-	0.5	mA
Thermistor voltage	Vtherm	-	5	V
TEC current	Ic	-	2.2	A
TEC voltage	Vc	-	4.0	V
Lead soldering temperature	Stemp	-	260	°C
Lead soldering time	Stime	-	10	sec
Package mounting screw torque (Note 1)	Npt	-	0.2	Nm
Electro static Discharge (ESD) (Note 2)	VESD	-	500	V

Note 1 Without buffer materials under the package

Note 2 A human-body model (HBM, C=100pF, R=1.5kΩ) is employed.

4. Electrical and optical characteristics (Unless otherwise noted, T_{LD}=25°C, BOL)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Threshold current	Ith	CW	-	20	50	mA
Operating current	Iop	Pop=140mW (Note 3)	-	-	600	mA
		Pop=160mW (Note 3)	-	-	600	
		Pop=180mW (Note 3)	-	-	700	
		Pop=200mW (Note 3)	-	-	750	
Optical power	Pop	CW, If=Iop	140 160 180 200 (Note 3)	-	-	mW
Forward voltage	Vf	CW, If=Iop	-	2	2.5	V
Monitor current	Im	CW, If=Iop, VrP=5V	100	-	1800	μA
Monitor dark current	Id	VrP=5V	-	-	10	nA
Monitor capacitance	C	VrP=5V, f=1MHz	-	-	12	pF
Center wavelength(Note 5)	λc	CW, If=Iop	(Typ.) -2	(Note 4) (Typ.) +2		nm
Spectral width (-10dB)	Δλ	CW, If=Iop	-	-	4.0	nm
Polarization Extinction Ratio (only for PMF type)	PER	CW, If=Iop	18	-	-	dB

Note 3,4 See ordering information (Section 7).

Note 5 Center wavelength is defined as the center of 10dB down points from the peak level on the envelope curve.

5. Thermal characteristics (Unless otherwise noted, $T_{LD}=25^{\circ}\text{C}$, $T_c=0$ to 65°C)

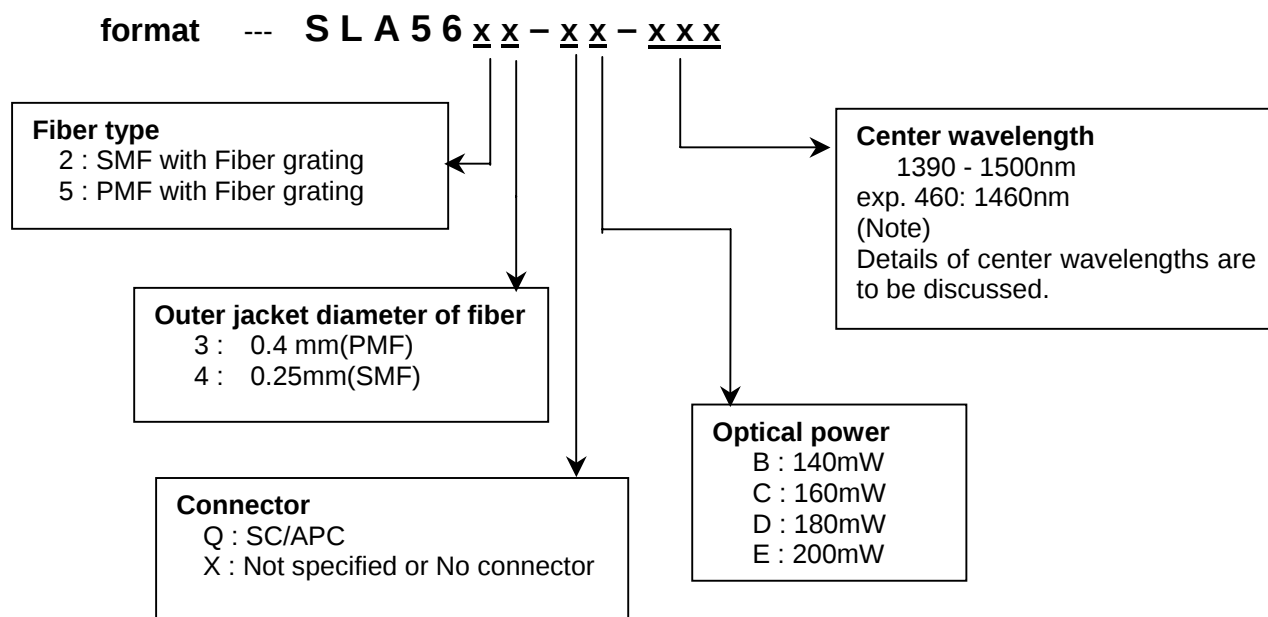
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Thermistor resistance	Rth	-	9.5	10	10.5	K Ω
Thermistor B constant	B	25°C / 50°C	3350	-	4000	K
TEC current	Ic	$\Delta T=40^{\circ}\text{C}$, Pf=Pop	-	-	1.5	A
TEC voltage	Vc	$\Delta T=40^{\circ}\text{C}$, Pf=Pop	-	-	3.5	V

6. Fiber pigtail specification

Parameter	Min.	Typ.	Max.	Unit
Fiber description	Single mode fiber (SMF)/ Polarization maintaining fiber (PMF) with fiber grating (Note 6)			-
Mode field diameter	8.5	9.5	10.5	μm
Cladding diameter	122	125	128	μm
Pigtail length	1.25			m
Outer jacket diameter	-	0.25(SMF) 0.4(PMF)	-	mm
Bending radius	40	-	-	mm
Optical connector	SC / Angled PC			-

Note 6 See ordering information (Section 7).

7.Ordering information



Standard Product

Ordering number	Fiber type	Outer jacket diameter of fiber	Connector
SLA5624-Qx-xxx	SMF	0.25mm	SC/APC
SLA5653-Qx-xxx	PMF	0.4mm	SC/APC

8. Precaution

Class 3B in the radiation safety standard applies to all versions of this product. Mishandling may result in hazardous laser radiation exposure.

Refer to the document IRO-D01002 in terms of the usage of this product and safety precautions.

REVISION RECORD

Document No.	Date of issue	Description	Incorporated by	Checked by	Approved by
HUW9723016-01A	Aug/1/97	Initial issue	A. Miki	T. Fujitani	T. Fujitani
HUW9723016-01B	April/30/99	Floating pin assignment is added. Tc,Pf,Im, λ_c , $\Delta\lambda$ are revised.	A. Miki	T. Fujitani	T. Fujitani
HUW9723016-01C	Feb/14/00	180,200mW (preliminary) are added. Maximum screw torque is added.	A. Miki	T. Fujitani	T. Fujitani
HUW9723016-01D	Sep/12/00	SLA565x is included. Top of 180,200mW, λ_c and $\Delta\lambda$ are revised. Package dimension is revised. Precaution is revised.	A. Hamakawa	A. Miki	T. Fujitani
HUW9723016-01E	Mar/14/01	Pigtail dimension is revised	A. Hamakawa	A. Miki	K. Tanida
HUW9723016-01F	April/19/01	Definition of center wavelength is revised.	A. Hamakawa	A. Miki	K. Tanida
HUW9723016-01G	Jan/11/02	P/N format and Precaution are revised. ESD is added.	A. Hamakawa	H. Koseki	K. Tanida