

OSI Laser Diode, Inc.

Founded in 1967, produces advanced optoelectronic products of the highest quality for a broad range of applications and industries. Our state of the art manufacturing, advanced product development and quality program, coupled with our continual process improvements, exemplifies our principles of **Leadership, Dependability** and **Integrity**.

PINFET

Optical Receiver Modules
(LDPW, LDPF, LDSF Series)

		LDFS Series			LDFS Series			LDFS Series			
		min	typ	max	min	typ	max	min	typ	max	
Dark Current @ -5V	nA		0.5	1		0.5	1		0.5	1	
Maximum Optical input @ -5V	dBm		Sensitivity level (dBm) + 25dB			Sensitivity level (dBm) + 25dB			-3	0	
Sensitivity Derating Over Temperature	dB		<1			<1			<1		

PINAMP

Mini-DIL Optical Receivers
(LPAD Series)

Parameter	Unit	4Mb/s			52 Mb/s			155 Mb/s			622 Mb/s		
		min	typ	max	min	typ	max	min	typ	max	min	typ	max
Data Rate	Mb/s		4		52		155		622				
Sensitivity @ 10 ⁻⁹ (BER)*	dBm		-50	-48	-43	-41	-39	-37	-33	-31			
Overload @ -5 VDC	dBm		-4		0		0		0				
Transfer Gain @1310 nm	V/W		40K		25k		12K		4K				
Dark Current @ -5 VDC	nA		0.5		0.5		0.5		0.5				

InGaAs PIN

Photodiode Modules for Telecom Applications
(LPD 3080 Series)

Parameter	Symbol	Min	Typ	Max	Units
Detector Diameter	∅		75		µm
Dark Current	I _d		0.05	0.5	nA
Capacitance	C _j		0.5	0.75	pF
Responsivity @ 1.3 µm	R	0.8	0.85		A/W
@ 1.55 µm	R	0.85	0.9		A/W

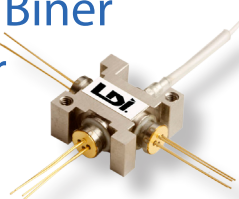
LAPD 3050

InGaAs APD Module

Parameter	Symbol	Conditions	Min	Typ	Max	Units	
Active Area Diameter	∅				50	µm	
Operational Wavelength	λ			1000	1550	1650	nm
Responsivity	R	λ= 1550nm, M = 10		7	9	A/W	
Dark Current	I _d	M = 10			2	nA	
Breakdown Voltage	V _{br}	I _d = 10 µA		50	70	V	

TCW RGB TriBiner

Visible Laser
TCW RGS-400R



Standards and Certifications

- ISO-9001:2015 • MIL-I-45208
- MIL-STD-883 • MIL-STD-750

OSI Laser Diode, Inc.
An OSI Systems Company

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	Parameters	Symbol	Conditions @25° C	Typ.	Units
Port 1	Optical power (fiber)	P _o	70mA CW	3	mW
	Center wavelength	λ	70mA CW	638	nm
	Spectral width (FWHM)	Δλ	70mA CW	2	nm
	Threshold current	I _{th}	CW	50	mA
Port 2	Optical power (fiber)	P _o	65mA CW	3	mW
	Center wavelength	λ	65mA CW	520	nm
	Spectral width (FWHM)	Δλ	65mA CW	2	nm
	Threshold current	I _{th}	CW	40	mA
Port 3	Optical power (fiber)	P _o	50mA CW	3	mW
	Center wavelength	λ	50mA CW	450	nm
	Spectral width (FWHM)	Δλ	50mA CW	2	nm
	Threshold current	I _{th}	CW	30	mA
Common	Optical power (fiber)	T _{op}	@ rated drive conditions	-20 to 50	° C
	Center wavelength	T _{stg}	Non operating	-40 to 85	° C
	Spectral width (FWHM)	L	per mechanical outline	1	Meter
	Threshold current	F _i	4 / 125 / 900 um SMF		um

OSI Laser Diode, Inc.

An OSI Systems Company



World-Class Opto-Electronic Components

Telecom Products

OTDR Lasers @ 850, 1310, 1550, 1625 & 1650nm

- High peak optical powers
- Excellent wavelength stability over temperature
- High reliability laser welded construction
- Lead free & RoHS compliant
- Fully Hermetic Packaging

OTDR Combiner & TriBiner

- Combines 2 or 3 wavelengths
- Single output fiber • Red laser available
- Ideal for handheld OTDR

DFB Lasers

- 1310, 1650nm • Optically isolated
- PM fiber option

PINFET Optical Receiver Modules

- High sensitivity • Wide dynamic range
- Hermetic package • 850-1650nm operation

FP Lasers & LEDs @ 850nm to 1650nm

- Edge emitting LED @ 1300nm
- High stability fiber coupling
- TEC & back facet monitor options

Airpak Tx and Rx Modules

- SONET OC1 & OC3 transmitters
- SONET OC1, OC3 & OC12 receivers
- High loss budget links

OSI Laser Diode, Inc.
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Edison, NJ 08820

High Power Products

1550nm Pulsed Laser Diode w/Integrated Micro Lens

- Beam Divergence Equivalent in both Axis
- Robust environmental survival capacity
- Higher coupling efficiency into standard spherical systems

TCW RGB TriBiner Visible Laser

- Wavelengths:450nm, 520nm, 638 nm
- Additional fiber pigtail options available

1550nm Pulsed Laser Diodes (Eye Safe)

- Single & Multi-Junction versions
- Stacked Multi-Junction versions up to 100 Watts

850nm & 905nm Pulsed Laser Diodes

- Single junction versions up to 140 Watts
- Multi-Junction stacked lasers up to 375 Watts
- High efficiency & low drive currents
- Stable output from -40°C to +85°C

InGaAs APD Devices

- 75um and 200um active areas
- Responsivity from 850nm to 1700nm
- Multiple Packaging Options

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High Power Pulsed Laser Diodes

Peak Power Up to 100W

CVD Series Characteristic @ 25°C

Parameter	Symbol	Min	Typ	Max	Units
Peak wavelength	λ				nm
CVD 60 / 160 Series		895	905	915	nm
CVD 90 / 190 Series		840	850	860	nm
CVD 206 Series		850	860	870	nm
Spectral Width	$\Delta\lambda$		5.0	12	nm
Rise Time - Lasers	T_r		1		ns
Pulse Width = 50% pts	T_{pw}		100	200	ns
Beam Spread	FWHM		10 x 35		degrees
Operating Temperature	T_{op}	-40		85	°C
Storage Temperature	T_{stg}	-55		85	°C

CVN 63-90ECL 905nm Pulsed Laser Diode with Intergrated Micro Lens

Parameter	Symbol	Min	Typ	Max	Units
Wavelength	λ	895	905	915	nm
Spectral Width FWHM	$\Delta\lambda$		8		nm
Temp Coeff. of Wavelength	$\Delta\lambda/\Delta T$		0.24		nm/°C
Peak Power	P_o	75			W
Pulse Width	PW		100		nS
Duty Factor	DF		0.01		%
Drive Current	-		30		A

CVN Series Drive Conditions: 100ns 30 Amps 1kHz @ 25°C

Parameter	Symbol	Min	Typ	Max	Units
Peak Wavelength	λ	895	905	915	nm
Spectral Width FWHM	$\Delta\lambda$		8		nm
Rise Time	T_r		1		nS
Beam Spread			9 x 25		Degrees
Duty Cycle	DC			0.1	Percent
Operating Temperature	T_{op}	-40		85	°C
Storage Temperature	T_{stg}	-40		85	°C

High Power Monolithic Stack Pulsed Laser Diodes

Peak Power Up to 375W

Parameter	Symbol	Min	Typ	Max	Units
Wavelength	λ	1530	1550	1580	nm
Spectral Width FWHM	$\Delta\lambda$		15		nm
Temp Coeff. of Wavelength	$\Delta\lambda/\Delta T$		0.55		nm/°C
Peak Power	P_o		22		W
Pulse Width	PW		150		nS
Duty Factor	DF		0.075		%

CVLL Series Specifications and Limits @ 25°C

Parameter	Symbol	Min	Typ	Max	Units
Peak Wavelength	λ	1530	1550	1580	nm
Spectral Width	$\Delta\lambda$		15		nm
Temp Coeff. of Wavelength	$\Delta\lambda/\Delta T$		0.55		nm/°C
Beam Divergence	FWHM		10 x 24		Degrees
Operating Temperature	T_{op}	-40		85	°C
Storage Temperature	T_{stg}	-40		85	°C
Pulse Width	PW		150		ns
Duty Factor	DF		0.07		degrees
Rise Time	T_r		1		ns
Fall Time	T_f		1		ns

1550nm High Brightness Pulsed Laser Diodes

Peak Power Up to 125W



High quality products for a wide range of applications



Medical • Military • Aerospace Telecommunications



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ISO 9001:2015

LCW/SCW Series: Instrument laser Modules Pulsed CW Applications

Characteristics w/ TEC: $T_a = -30^\circ$ to 70° C; $T_{id} = +25^\circ$ C • w/o TEC: $T_a = +25^\circ$ C
Conditions: $P_w = 10\mu$; D/C = 1% • Fiber: SMF 28e* or MMF GI 50; 1 meter min. fiber length for unconnectorized 1 meter +/- 0.1 for connectorized pigtailed

Parameter	Symbol	1330 Series			1430 Series			1530 Series			1630 Series			1650 Series			Units
		Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	
Optical Power (Fiber)	P	120			100			100			100			100			mW
Optical Power (TO56)	P	350			300			300			250			225			mW
Optical Power (Fiber CW)*	P	75			60			60			60			55			mW
Forward Current	I_f		1000			1000			1000			1000			1000		mA
Threshold Current	I_{th}		30			35			35			45			45		mA
Forward Voltage	V_f		2			2			2			2			2		V
Center Wavelength	λ	1290	1310	1330	1470	1490	1510	1530	1550	1570	1615	1625	1635	1640	1650	1665	nm
Spectral Width	$\Delta\lambda$			8			10			10			12			12	nm
Tech Voltage**	V_{tec}	1.2	1.6		1.2	1.6		1.2	1.6		1.2	1.6		1.2	1.6		V
Tech Current**	I_{tec}	600	800		600	800		600	800		600	800		600	800		mA
Storage Temp. Range	T_{stg}	-40	85		-40	85		-40	85		-40	85		-40	85		°C

Symbol	LP8M03-27-50R	LP8M03-27-62R	LP8M05-23-50R	LP8M05-23-62R	LP8M10-23-50R	LP8M10-23-62R	Units	
Power (min)	P_o	300	300	500	500	1000	1000	mW
Threshold Current (typ)	I_{th}	0.1	0.1	0.25	0.25	0.25	0.25	A
Peak Forward Current (typ)*	I_f	1.4	1.2	2.2	2.0	4.5	4.0	A
Peak Wavelength	λ_p	850±20	850±20	850±20	850±20	850±20	850±20	nm
Spectral Width (FWHM)	$\Delta\lambda$	10	10	10	10	10	10	nm
Pulse Width	P_w	50	50	50	50	50	50	ns
Repetition Rate	PRR	10	10	10	10	10	10	KHz

Characteristics ($T_{amb} = -20^\circ$ to 70° C; $T_{id} = 25^\circ$ C):

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Optical Power (Fiber)	P_o	$I_f = 400$ mA; $P_w = 10$ us; D/c = 1%	40			mW
Threshold Current	I_{th}	$P_w = 10$ us; D/c = 1%		40		mA
Forward Voltage	V_f	$I_f = 400$ mA; $P_w = 10$ us; D/c = 1%		2	3	V
Reverse Voltage	V_r	$I_f = 10$ uA	2			V
Center Wavelength	λ	$I_f = 400$ mA; $P_w = 10$ us; D/c = 1%	1646	1650	1654	nm
Spectral Width (RMS)	$\Delta\lambda$	$I_f = 400$ mA; $P_w = 10$ us; D/c = 1%		0.5		nm
Thermistor Resistance	R	$T_{id} = 25^\circ$ C.	9.9	10.0	10.1	KΩ
Thermistor B Constant	B	B25/50	3910.9	3950.0	3989.9	K
Cooling Capacity**	ΔT	$I_f = 400$ mA; $P_w = 10$ us; D/c = 1%	45			°C
Tech Voltage	V_{tec}	$I_f = 400$ mA; $P_w = 10$ us; D/c = 1%			1.5	V
Tech Current	I_{tec}	$I_f = 400$ mA; $P_w = 10$ us; D/c = 1%			1.5	A
Fiber Length	L	per 55-2500-0090-01	1			Meter
Operating Temp. Range	T_{op}	$I_f = 400$ mA; $P_w = 10$ us; D/c = 1%	-30		70	°C
Storage Temp. Range	T_{stg}	Non Operating	-40		85	°C

Characteristics ($T_{amb} = 0^\circ$ to 65° C; $T_{id} = 25^\circ$ C):

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Optical Power (Fiber)	P_o	$P_w = 10$ us; D/C = 1%	400	500		mW
Forward Drive Current	I_f	$P_w = 10$ us; D/C = 1%		2500		mA
Threshold Current	I_{th}	$P_w = 10$ us; D/C = 1%		70		mA
Forward Voltage	V_f	$P_w = 10$ us; D/C = 1%		3	4	V
Center Wavelength	λ	$P_w = 10$ us; D/C = 1%	1530	1550	1570	nm
Spectral Width (RMS)	$\Delta\lambda$	$P_w = 10$ us; D/C = 1%		10	12	nm
Pulse Drop	P_D	$P_w = 20$ us; D/C = 1%			20	%
Thermistor Resistance	R	$T_{id} = 25^\circ$ C.	9.9	10.0	10.1	KΩ
Thermistor B Constant	B	B25/50	3910.9	3950.0	3989.9	K
Cooling Capacity	ΔT	$P_w = 10$ us; D/C = 1%	60			°C
Tech Voltage @ $40^\circ \Delta T$	V_{tec}	$P_w = 10$ us; D/C = 1%		1.2	1.6	V
Tech Current @ $40^\circ \Delta T$	I_{tec}	$P_w = 10$ us; D/C = 1%		800.0	1500.0	mA
Fiber Length	L	per outline	1			Meter
Operating Temp. Range	T_{op}	$P_w = 10$ us; D/C = 1%	0		65	°C
Storage Temp. Range	T_{stg}	Non Operating	-40		85	°C