

1310nm 2.5 Gbps Surface Emitting FP Laser

Description

BinOptics 131G-02x-Lxx11 Series Products are directly modulated 2.5Gbps Fabry-Perot 1310nm Horizontal Cavity Surface Emitting Laser (HCSEL) diode devices. These products utilize BinOptics' patented Etched Facet Technology to create a 45° reflecting mirror for directing the output beam vertically. Product is available as tested die or mapped wafer.

Key Features

- 1310nm wavelength
- Direct modulation at 2.5 Gbps
- Uncooled operation
- Ridge cavity structure with AlInGaAs active region

Key Benefits

- Surface emitting laser (HCSEL)
- On-wafer mapping/screening for low cost
- Operating temperatures of up to 95°C


Applications

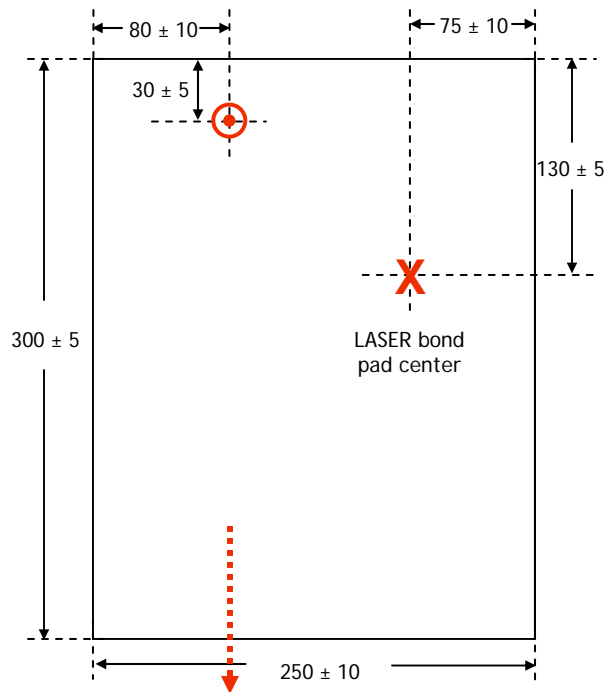
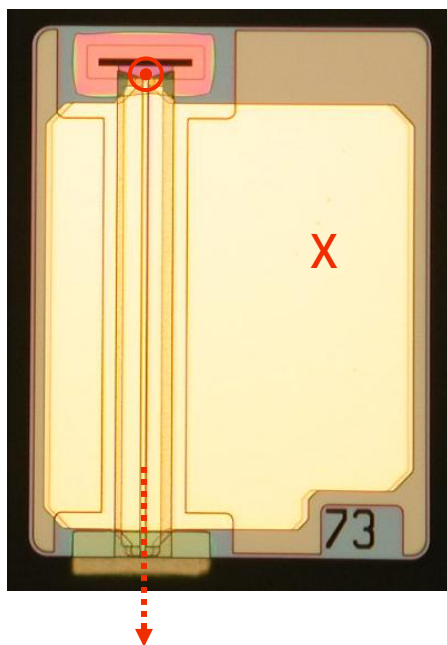
- Up to 2.5 Gbps
- PON, Access, Optical Ethernet

OPTICAL CHARACTERISTICS (T=25°C unless otherwise specified)						
Parameter	Conditions	Symbol	Min.	Typ.	Max.	Unit
Optical Output Power	T=25°C I _{op} =I _{th} +20mA	P ₀	7.5	8	-	mW
	T=85°C, I _{op} =I _{th} +20mA		5	6		
	T=95°C, I _{op} =I _{th} +20mA		4	4.8		
Threshold Current	T=25°C	I _{th}	-	10	12	mA
	T=85°C			27	30	
	T=95°C			35	39	
Slope Efficiency	T=25°C	η	0.38	0.4	-	W/A
	T=85°C		0.25	0.3		
	T=95°C		0.20	0.24		
Center Wavelength	T=25°C	λ _c	1270	1310	1360	nm
Temperature Dependence of Center Wavelength		Δλ/ΔT	-	0.5	-	nm/°C
Beam Divergence Angle	Parallel	θ _∥	-	17	25	deg.
	Perpendicular	θ _⊥		35	45	deg.
Spectral Width rms	I _{op} =2 x I _{th}	σ	-	-	2.0	nm
Rise Time (10-90%)	I _{op} =I _{th} +20mA	t _r	-	-	100	ps
Fall Time (10-90%)	I _{op} =I _{th} +20mA	t _f	-	-	100	ps
Operating Voltage	I _{op} =50mA	V _{op}	-	-	1.5	V

ABSOLUTE MAXIMUM RATINGS						
Parameter	Conditions	Symbol	Min.	Typ.	Max.	Unit
Submount Temperature		T	-40	-	95	°C
Storage Temperature		T _{St}	-40	-	100	°C
Optical Output Power	CW	P _o	-	-	15	mW
Laser Reverse Voltage		V _R	-	-	2	V
Laser Forward Current		I _F	-	-	150	mA

PHYSICAL CHARACTERISTICS			
Parameter	Symbol	Typical	Unit
Bond Pad	l × w	100 × 100	μm
Chip Dimensions	l × w × h	300 × 250 × 100	μm

 = Emission Aperture



ORDERING INFORMATION	
Part Number	Description
131G-02I-LWF11-S01	1310 FP, HCSEL, 2.5G, Industrial Temp (-40 to 85°C), Wafer level
131G-02F-LWF11-S01	1310 FP, HCSEL, 2.5G, Extended Industrial Temp (-40 to 95°C), Wafer level
131G-02I-LCT11-S01	1310 FP, HCSEL, 2.5G, Industrial Temp (-40 to 85°C), chip-on-tape
131G-02F-LCT11-S01	1310 FP, HCSEL, 2.5G, Extended Industrial Temp (-40 to 95°C), chip-on-tape
131G-02I-LCG11-S01	1310 FP, HCSEL, 2.5G, Industrial Temp (-40 to 85°C), chip on GelPack
131G-02F-LCG11-S01	1310 FP, HCSEL, 2.5G, Extended Industrial Temp (-40 to 95°C), chip on GelPack