

## 1310nm 10 Gbps Edge Emitting FP Laser

### Description

BinOptics 131F-10X-Lxx11 Series Products are directly modulated 10Gbps 1310nm Fabry-Perot laser diode devices. These products utilize BinOptics' patented Etched Facet Technology enabling low cost. Product is available as tested die or mapped wafer.

### Key Features

- 1310nm Wavelength
- Direct modulation up to 10.7 Gbps
- Uncooled operation
- Ridge Cavity Structure with AlInGaAs active region

### Key Benefits

- Edge Emitting (EEL)
- On-wafer mapping/screening for low cost
- Operating temperatures of up to 95°C
- High RO frequency

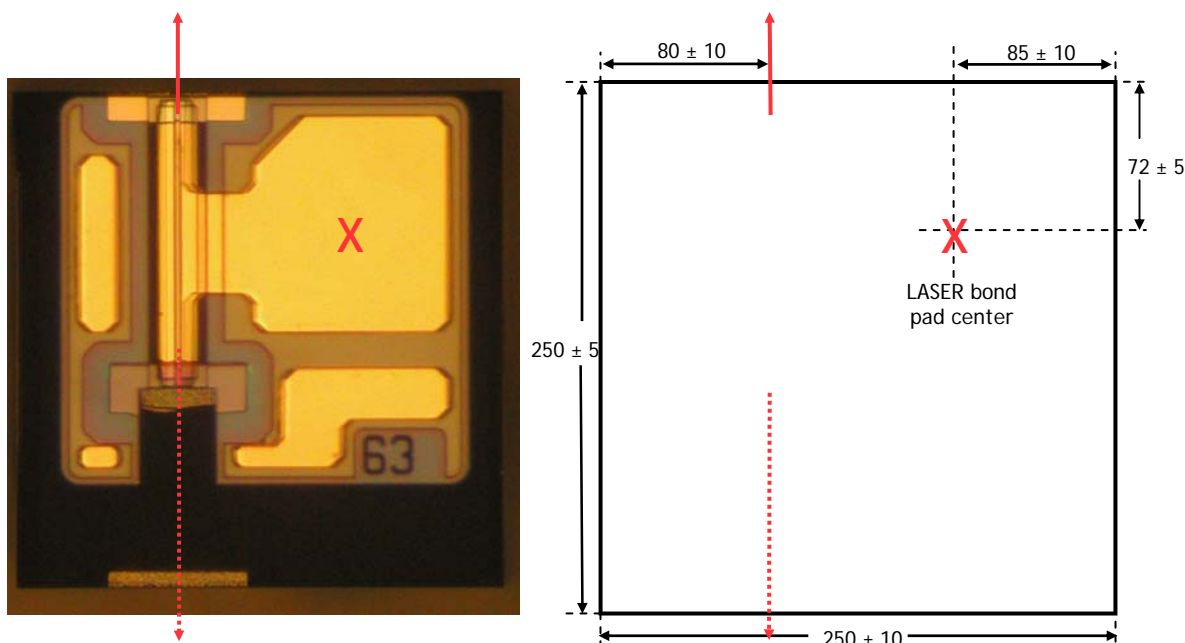
### Applications

- 10G Ethernet LRM
- OC-192 VSR4

OPTICAL CHARACTERISTICS (T=25°C unless otherwise specified)						
Parameter	Conditions	Symbol	Min.	Typ.	Max.	Unit
Optical Output Power	T=25°C I <sub>op</sub> =I <sub>th</sub> +25mA	P <sub>0</sub>	7.5	-	-	mW
	T=85°C I <sub>op</sub> =I <sub>th</sub> +25mA		5.5			
	T=95°C I <sub>op</sub> =I <sub>th</sub> +25mA		5			
Threshold Current	T=25°C	I <sub>th</sub>		8	10	mA
	T=85°C			17	19	
	T=95°C			19	22	
Slope Efficiency	T=25°C	η	0.3	-	-	W/A
	T=85°C		0.22			
	T=95°C		0.2			
Center Wavelength	T=25°C	λ <sub>c</sub>	1270	1310	1355	nm
Temperature Dependence of Center Wavelength		Δλ/ΔT	-	0.5	-	nm/°C
Beam Divergence Angle	Parallel	θ <sub>∥</sub>	-	17	25	deg.
	Perpendicular	θ <sub>⊥</sub>		35	45	deg.
Spectral Width rms	I <sub>op</sub> =2 x I <sub>th</sub>	σ	-	-	2.4	nm
RO Frequency	@20°C I <sub>op</sub> =35mA	F <sub>RO</sub>	10	-	-	GHz
Rise Time (20-80%)	@ 95°C I <sub>op</sub> =75mA	t <sub>r</sub>	-	-	45	ps
Fall Time (80-20%)		t <sub>f</sub>	-	-	45	ps
Operating Voltage	I <sub>op</sub> =75mA	V <sub>op</sub>	-	-	1.8	V

ABSOLUTE MAXIMUM RATINGS						
Parameter	Conditions	Symbol	Min.	Typ.	Max.	Unit
Submount Temperature		T	-40	-	95	°C
Storage Temperature		T <sub>St</sub>	-40	-	100	°C
Laser Reverse Voltage		V <sub>R</sub>	-	-	2	V
Laser Forward Current		I <sub>F</sub>	-	-	150	mA

PHYSICAL CHARACTERISTICS			
Parameter	Symbol	Typical	Unit
Bond Pad	l x w	100 x 110	μm
Chip Dimensions	l x w x h	250 x 250 x 100	μm



ORDERING INFORMATION	
Part Number	Description
131F-10I-LWF11-S01	1310 FP, EEL, 10G, Industrial Temp (-40 to 85°C), Wafer level
131F-10F-LWF11-S01	1310 FP, EEL, 10G, Extended Industrial Temp (-40 to 95°C), Wafer level
131F-10I-LCT11-S01	1310 FP, EEL, 10G, Industrial Temp (-40 to 85°C), chip-on-tape
131F-10F-LCT11-S01	1310 FP, EEL, 10G, Extended Industrial Temp (-40 to 95°C), chip-on-tape
131F-10I-LCG11-S01	1310 FP, EEL, 10G, Industrial Temp (-40 to 85°C), chip on GelPack
131F-10F-LCG11-S01	1310 FP, EEL, 10G, Extended Industrial Temp (-40 to 95°C), chip on GelPack