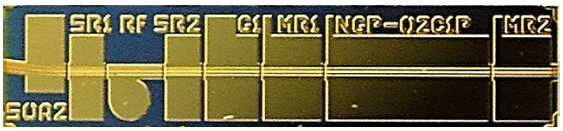
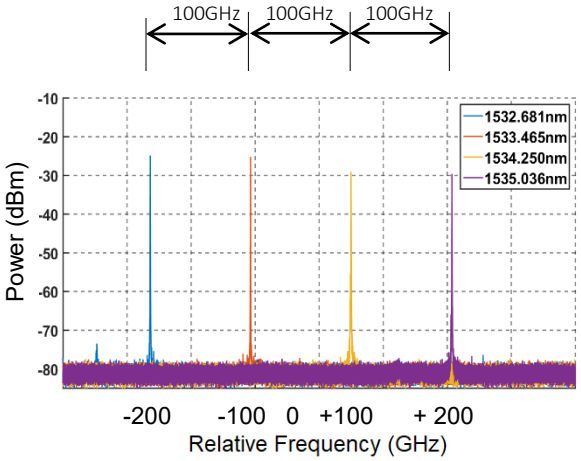
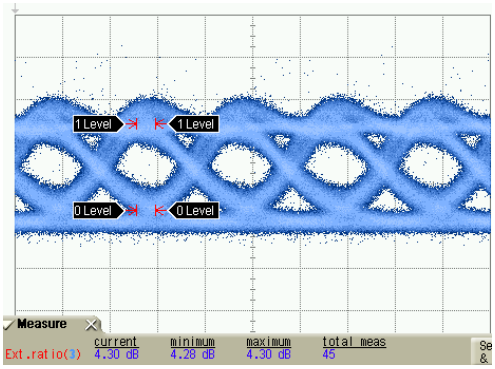
Wavelength Tunable Directly Modulated Laser



Pilot Photonics' wavelength tunable directly modulated laser is based on a multi-section directly modulated laser design with integrated amplifier and proprietary chirp reduction system. It is ITU-T G.989.2 class 1, compliant. Sampling in high-speed butterfly packages, or benchtop unit with driving controllers now available. Qualified, production devices shipping in bare die, or TOSA packaged formats, in Q1 2024.



4 x 100GHz Channels can be selected via current tuning with nanosecond switching speeds



10 Gbit/s OOK

Features

- 4 x100 GHz ITU NG-PON2 compliant wavelengths
- Side Mode Suppression Ratio > 50 dB
- Simple wavelength selection
- Class 1 wavelength switching
- 10 Gbit/s direct modulation
- Modulated power > 5 dBm, Extinction Ratio > 4 dB
- 50 km DML transmission with chirp control
- Chirp reduction system
- Integrated blanking SOA for burst mode functionality and PSD-WNE <-63 dBm
- Low spectral excursion < 0.5 GHz

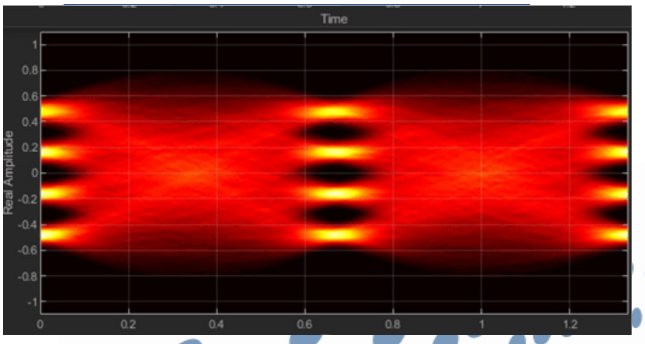
Applications

- NG-PON2
- High Speed Passive Optical Networks (G.9804, HS-PON)
- Long reach direct modulation network architectures

Typical Specifications

Frequency	195.6 THz, 195.5 THz, 195.4 THz, 195.3 THz.
Tuning Time	<10 µs
Data Rate	9.95328 Gbit/s
Output Power	7 dBm (Type B)
Extinction Ratio	4 dB (Type B)
Form Factor	Bare die, TOSA, 7pin Butterfly

30 Gbit/s PAM4



Pilot PHOTONICS

Wavelength Tunable Directly Modulated Laser

Optical Specifications	Min.	Typ.	Max.	Unit	Notes
Nominal line rate	-	9.95328	-	Gbit/s	
Operating wavelength	1532.68	-	1535.03	nm	4 ch, 100 GHz spacing
Channel spacing	50	100	-	GHz	
Spectral excursion	-	15	+/- 20	GHz	
Extinction Ratio	-	4	5	dB	Type B (P4, ER4)
Mean channel launch power	-	5	-	dBm	Type B (P4, ER4)
Side-mode suppression ratio	30	40	60	dB	
Transmission Distance	-	-	50	km	
Tx channel tuning time	-	5	10	µs	
Tx enable transient time	-	80	128.6	ns	
Power when-not-enabled, WNE-PSD	-	-63.8	-62.6	dBm/15 GHz	
Out-of-channel optical PSD - OOC1	-	-41	-40.5	dBm/15 GHz	
Out-of-channel optical PSD – OOC2	-	-42	-41.6	dBm/15 GHz	
Operating Specifications					
Bias Current	-	-	110	mA	Total of 8 sections
Reverse Voltage (any section)	-	-	2	V	
Modulator Drive Voltage	-	2.5	-	Vpp	
TEC Voltage	-	-	2	V	
TEC Current	-1	0	1	A	
Chip Temperature	15	20	40	°C	
Case Temperature	10	25	45	°C	
Storage Temperature (Non-operational)	-40	-	60	°C	
Thermistor Resistance at 25 C	-	10	-	kΩ	NTC, Beta 3575 k
Physical Specifications					
Dimensions	-	2055 x 375	-	µm	Bare die
Fiber type	-	Corning PANDA PM	-	-	In butterfly package, slow axis aligned
Fiber connector	-	FC/APC	-	-	In butterfly package, narrow key