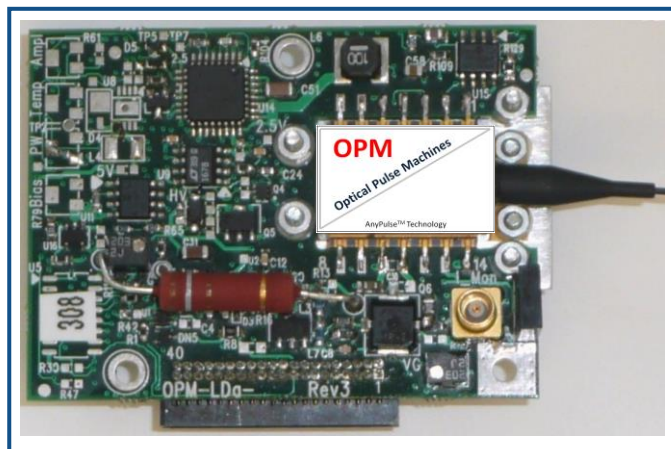


OPM-LDa-3

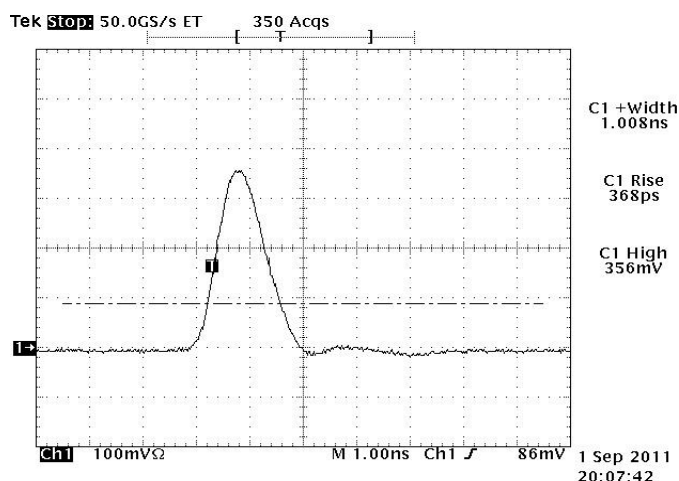
Seed Laser / Optical Pulser Assembly

Features

- All seeder's functions integrated in one assembly:
 - Adjustable pulse generator from gain-switched operation (~60ps) to 1ns
 - Pulse driver
 - Efficient TEC controller
 - Laser diode
- Designed for OEM in laser systems
- Compact: 62mm x 45mm
- Peak laser current of 2A / Optical peak power up to 1W
- Bias current control to control optical spectrum
- Efficient protection on the laser diode
- On board potentiometers or external controls
- Wide selection of laser diodes in wavelength of 1064nm, 1550nm and more
- Monitoring of all key parameters
- An evaluation board is available for quick evaluation
- Cable assembly is available for connecting to customer's system



Optical Waveform 1ns



Product Applications

- Seed Laser for Fiber Lasers
- Optical pulser for LRF or LIDAR target simulators
- Time domain fluorescence microscopy
- 3D Vision systems
- Characterization of high speed optical receivers

Description

The OPM-LDa-3 seed laser assembly is an integrated solution for the seed (oscillator) part of pulsed MOPA fiber lasers systems. The assembly includes all the key functions needed in a high performance seeder, including an adjustable pulse-width generator, laser driver, TEC controller and an integrated laser diode.

Each incoming trigger signal (rising edge) results in a generation of a single pulse. The pulse-width is adjustable in the range from 0.5ns to over 3ns. An on-board trigger generator is an optional feature.

The module has analog control inputs: Pulse-width, bias current and set temperature (also optional amplitude control). Each of the input analog control signals can be replaced by an on-board potentiometer so that the module can either be controlled externally or have internal settings.

With the bias current control the user can impact the optical spectral width or to change the extinction ratio.

The product is designed to operate in a wide temperature range and in maintenance-free conditions – making it a good choice for integration in commercial and industrial laser systems.

Various product option are being offered – See order codes



Specifications / Technical Data

Parameter	Value	Comments
Pulse width range	0.5ns to 3ns	
Peak laser current	2A (@PW=3ns)	24V version; Can be increased upon request
Bias current	0 to 50mA	Can be increased to 100mA upon request
Peak optical power	Typical 600mW, up to 1W	Depends on laser diode
Pulse frequency range	Single shot to 20MHz	Can be optimized to 20MHz to 80MHz operation
Trigger input	TTL/LVTTL	Rising edge, high impedance
TEC driver current	In range of -2.5A to +2.5A	
Laser temperature accuracy	Better than 0.1C	After stabilization
Operating temperature range	0 to 60C	Other range - upon request
Supply voltages	5V / 12V or 5V / 24V	Single 5V power option
Size	62mm x 45mm	
Installation options	Vertical or horizontal	
Main connector	Samtec TFM-120 series	40 pin

Suitable Laser Diodes

Various laser diodes are available to be used with the OPM-LDa-3: DFB, FP or FBG types; wavelengths of 1030nm, 1064nm, 1310nm, 1480nm, 1550nm or other custom wavelengths. Butterfly package (industrial type – see pin-out) or Coaxial package

Pin	Function	Pin	Function
1	Cooler (+)	8	nc
2	Thermistor	9	nc
3	PD Anode (+)	10	LD Anode (+)
4	PD Cathode (+)	11	LD Cathode (-)
5	Thermistor	12	nc
6	nc	13	Case Ground
7	nc	14	Cooler (-)

Ordering Information

	Power Supply	Mounting	TEC Controller	Trigger Generator	Potentiometers	Laser Diode
OPM-LDa-3	5/5V (5) or 5/12V (12) or 5/24V (24)	Horizontal (H) / Vertical (V)	Yes (T) / No (X)	Yes (G) / No (X)	Yes (P) / No (X)	Laser diode description
Example of a product code for an OPM-LDa-3 module that operates on power supply of 24V, vertical mounting, with TEC controller, no trigger generator, no potentiometers and a 1064 DFB laser diode: OPM-LDa-3-24-V-T-X-X-1064DFB						
OPM-LDa-3	24 V (24)	Vertical (V)	Yes (T)	No (X)	No (X)	1064 DFB laser diode

For a comprehensive description of module's pin-out and controls please refer to documents:

- Application note for OPM-LDa-3 and OPM-LDa-gs modules
- User manual for test jig for OPM-LD-yyy modules