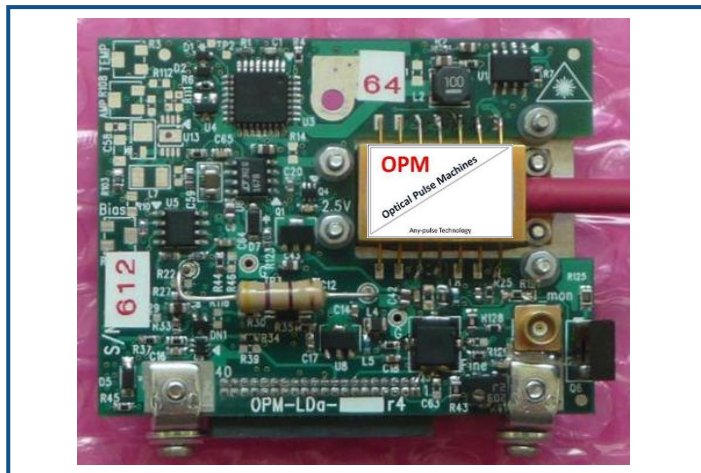


OPM-LDa-YYY

Seed Laser / Optical Pulser Assembly

Features

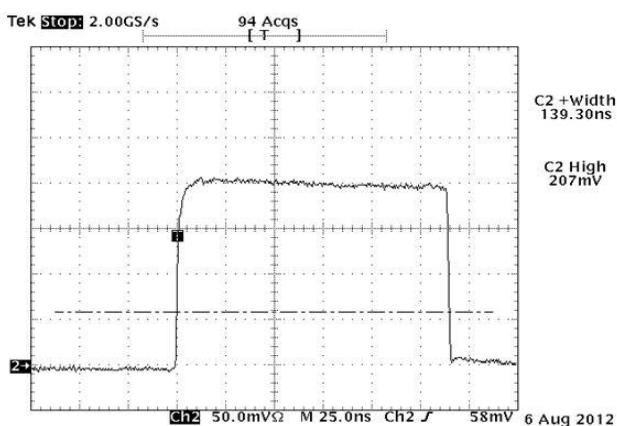
- All seeder's functions integrated in one assembly:
 - Adjustable pulse generator 1ns to 1250ns in 4 product versions
 - Pulse driver
 - Efficient TEC controller
 - Laser diode
- Designed for OEM in laser systems
- Compact: 63mm x 50mm
- Peak laser current of 2A / Optical peak power up to 1W
- Bias current control
- Efficient protection on the laser diode
- On board 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 and a cable assembly is available for connecting to customer's system



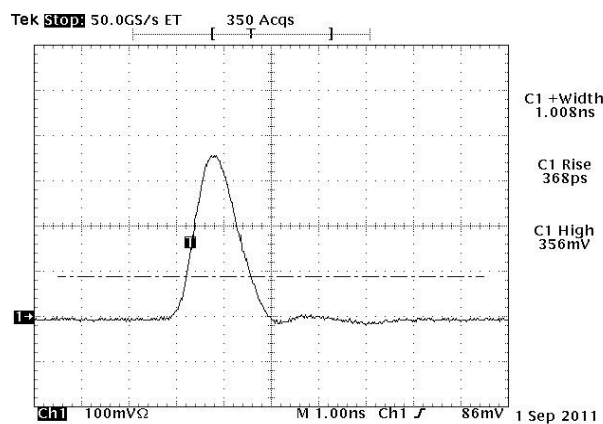
Product Applications

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

Optical Waveform 140ns



Optical Waveform 1ns



Description

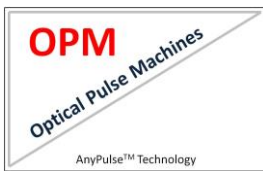
The OPM-LDa-yyyy series seed modules are integrated solutions for the seed (oscillator) part of pulsed MOPA fiber lasers systems. The modules include all the key functions needed in a high performance seeder, including an adjustable pulse-width generator, laser driver, TEC controller and an integrated laser diode.

Each incoming trigger signal (rising edge) results in a generation of a single pulse. The pulse-width is adjustable in 8 bit resolution and an addition of fine tuning. The four products in this series cover total pulse width range from 1ns to 1250ns.

The module also has analog control inputs: Fine 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.

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 options are being offered – See ordering information.



Specifications / Technical Data

Parameter	Value	Comments
Pulse width range	OPM-LDa-64: 1ns to 64ns OPM-LDa-128: 1ns to 128ns OPM-LDa-256: 1ns to 256ns OPM-LDa-1250: 10ns to 1250ns	Resolution of 0.25ns Resolution of 0.5ns Resolution of 1ns Resolution of 5ns
Fine pulse-width tuning	At least +/- 1ns	
Peak laser current	At least 2A	Using 24V power supply
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 10MHz	Subjected to duty-cycle and thermal limitations
Trigger input	TTL/LVTTL	Rising edge, high impedance. Trigger pulse-width must be larger than the programmed pulse-width
Enable driver	TTL/LVTTL	Laser enable, TEC enable
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
Dimensions	63mm x 50mm	
Installation options	Vertical or horizontal	
Laser diode heat-sink	Flat type or bracket	

Suitable Laser Diodes

Various laser diodes are available to be used with the OPM-LDa-yyy: 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

	Max Pulse Width (ns)	Power Supply	Mounting	TEC Controller	Potentiometers	Laser Diode
OPM-LDa-yyy	64/128/256/1250	5/5V (5), 5/12V (12) or 5/24V (24)	Horizontal (H) / Vertical (V)	Yes (T) / No (X)	Yes (P) / No (X)	Laser diode description
Example of a product code for an OPM-LDa-128 module that operates on power supply of 12V, horizontal mounting, with TEC controller, no potentiometers and a 1064 FBG laser diode: OPM-LDa-128-12-H-T-X-1064FBG						
OPM-LDa	128	12 V	Horizontal	Yes	No	1064 FBG laser diode

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

- Application note for OPM-LDa-64/128/256/1250 modules
- User manual for test jig for OPM-LD-yyy modules