PAF100 series
Low power preamplifier designed for SiPM.

The amplifier **PAF100** is a low noise preamplifier for positive input signals. Preamplifier has 50 ohm input impedance. The output-amplified signal can be terminated by 50 Ohm. The preamplifier is optimized specially for SiPM detector (but can be used for standard PMT) and on the board there are pins to connect bias voltage (though resistor 10KΩ). Maximum applied bias voltage is 200 Volt. The board has small size 50x20 mm and can be supplied with male or female connectors.
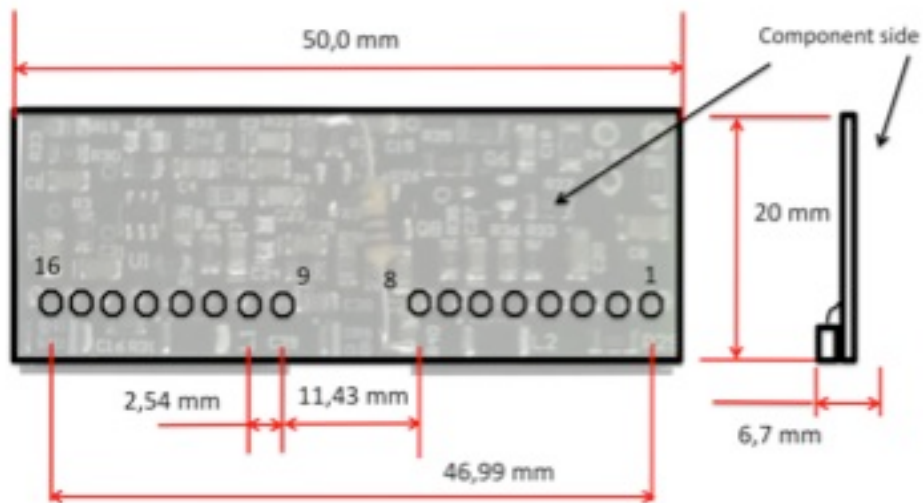
The preamplifier has two circuits: fast preamplifier and shaper/driver. The shaper/driver permit change a shaping time of signal to adapt timing of amplified signal to sampling rate of ADC.

The preamplifier was tested with HAMAMATSU MPPC S10931-050P type detector.

PERFORMANCE

Input impedance	50 Ohm
Input dynamic range	Accepts positive signal.
Output signal	Negative polarity
Rise time	3,5 ns (fixed gain equal 10)
Gain	10,20,30.50 (custom gain solution from 10 up to 100)
Dynamic output range	2 Volt
Output termination	50 Ohm
Gain temperature coefficient	0,03%/C
Input equivalent Noise	8 uV RMS
Shaping time	from 5 up to 40 ns
Maximum Bias Value	250 VDC

1 – Cathode;   5 - VSS;
3 – Anode;   10 - VDD;
14 – Output;   2,4,8,9,13,16 – Ground

POWER SUPPLY REQUIREMENTS:

Min.Voltage	Nom.Voltage	Max.Voltage	Nom. Current
- 8,5 V	- 9 V	- 12 V	13,1 mA
+ 5.2 V	+ 5,3 V	+ 6 V	5,8 mA

Order information.

BOX Version PAF1XXCXX.

The PCB boards can be housed in NAICAM standard cases (up to 4 channels) or largest box 160x165x51 mm (up to 16 channels). Custom solution can be designed up to 16 channels.

Box dimensions: 111x80x40 mm

Cable length 3 m.

Pin number	
3	+6 Volt
9	-12 Volt
1	Ground
2	Ground

Order information:

PAF	1	XX	C	XX
Name of model	Series	Fixed gain	B – PCB board (socket pins) D – SIL version (male pins) C – box version 111x80x40 mm A – Alum. box 165x160x52mm	Number of channel in box case

Example: PAF120DXX - single board preamplifier with fixed gain 20 and
                                    male connectors.
           PAF110C04 – 4 preamplifiers in one box with fixed gain 10.