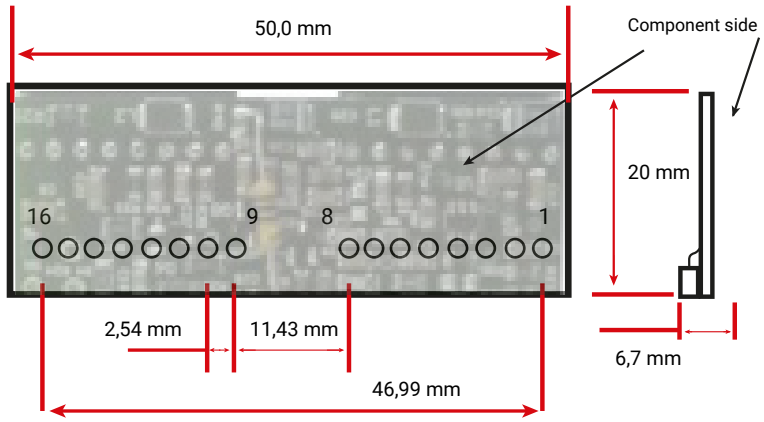
PAF100 SERIES - LOW POWER PREAMPLIFIER DESIGNED FOR SiPM

The amplifier PAF100 is a low noise preamplifier for positive input signals. Preamplifier has 50 Ω input impedance. The output-amplified signal can be terminated by 50 Ω. The preamplifier is optimized specially for SiPM detectors (but can also be used for standard PMT) and on the board there are pins to connect bias voltage (through a 10KΩ resistor). Maximum applied bias voltage is 200Volt(theboarddimensionsare50x20mm)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.



1 - Cathode;
3 - Anode;
14 - Output;

5 - VSS;
10 - VDD;
2,4,8,9,13,16 - Ground

PERFORMANCE

Input impedance	50 Ω
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 V
Output termination	50 Ω
Gain temperature coefficient	0,03%/C
Input equivalent Noise	8 µV RMS
Shaping time	5-40 ns
Maximum Bias Value	250 VDC

ORDER INFORMATION

BOX Version PAF1XXCXX.

The PCB boards can be housed in NAICAM standard cases (up to 4 channels) or in a bigger box 160x165x51mm (up to 16 channels). Custom solutions can be designed up to 16 channels.

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

POWER SUPPLY REQUIREMENTS

Min. Voltage	-8,5 V	+5,2 V
Nom. Voltage	-9 V	+5,3 V
Max. Voltage	-12 V	+6 V
Nom. Current	13,1 mA	5,8 mA

Power supply pin out:

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

BOX DIMENSIONS

box dimensions	111x80x40 mm
weight	5,8 g
cable length	3 m