

# Micro APD Series

PCB mount ultra compact, regulated, high voltage DC-DC converter



4 standard products  
Vin: 5Vdc or 12Vdc  
Vout : 0 to 100V  
Pout : 100mW



## General Description

The smallest regulated DC-DC power supply for APDs and MPPCs that need a bias voltage ranging from 0 to 100V.

Miniature and lightweight	Tight line / load regulation	Low ripple (<50Vp. to p.)
Lightweight	Output current limit protection	Low noise due to metal shielding
PCB flat mounting	Temperature coefficient 50ppm/°C	

Parameters	Specifications
Input voltage Vin (pins 1 & 2)	5Vdc $\pm$ 0.5Vdc or 12Vdc (reverse: -0.2V)
Input current	For 0V output voltage: <1.6mA For 100V, no load: < 3mA At full output voltage, full load: <50mA
HV output Vout (pin 7 or lead - optional)	0 to 100V programmable
Polarity	Fixed positive or negative
HV setting (pins 3)	Via external voltage source 0/2.5V $\pm$ 0.1% accuracy at full scale
Max. output current Iout	1mA nominal
Load voltage regulation	$\pm$ 0,01 % of full output voltage for no load to full load
Line voltage regulation	$\pm$ 0,01 % of full output voltage over specified input voltage range
Residual ripple	<25mV peak-to-peak - ripple can be reduced to less than 5mVp-p by adding an external 100nF/100V X7R 0805 SMD ceramic capacitor, or to less than 2mVp-p by adding an external 100nF/200V polyester capacitor
Temperature coefficient	<15ppm/°C

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Parameters	Specifications
Output HV monitoring	Not available on this product
Output reference voltage	Not available on this product
HV power ON/OFF	Not available on this product
Operating temperature	-10°C to + 50°C
Storage temperature	-10°C to + 70°C
Safeguards	<ul style="list-style-type: none"><li>• Output current internally limited</li><li>• Soft start feature : the start is guaranteed without overshoot</li></ul>
Shielding	The case has to be grounded to the customer's circuit board

## Main Applications

- Avalanche Photo Diodes (APD)
- Silicon Photomultipliers (SiPM)

## Package Configuration

Case material	Tin steel plate Thickness 0.5 mm
Case dimensions LxHxW	11 x 11 x 11 mm
Pins	0.63 x 0.63 mm square pins, length: > 2 mm
Weight	5 g
Insulation	Fully potted in an epoxy resin

## Pin Connections

Line input	1. Vin 2. GND
HV setting	3. Control input 0/2.5V
HV output	4. Vout



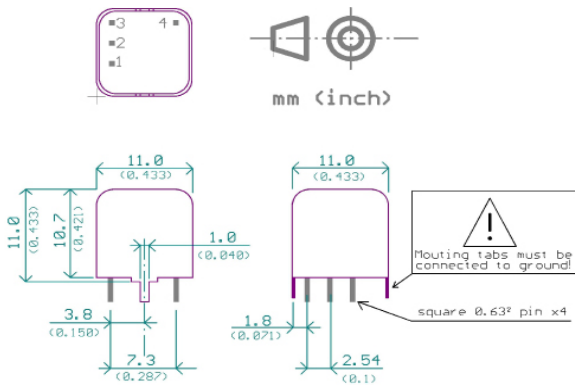
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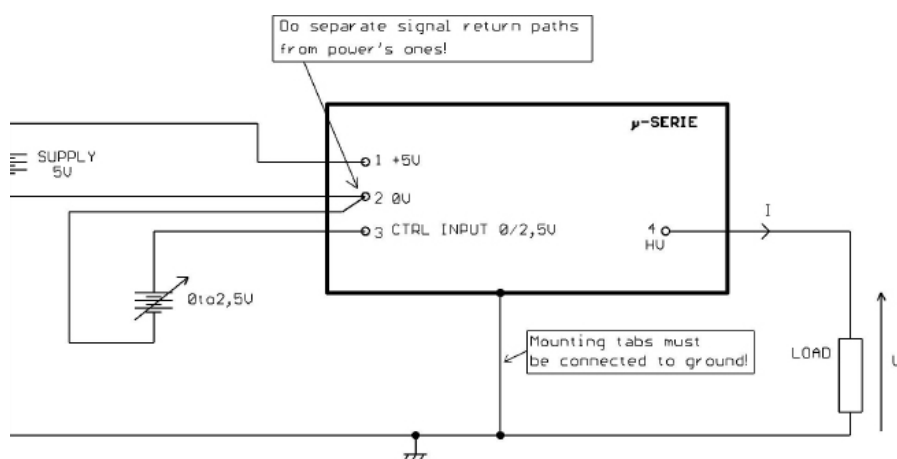
## Marking



## Mechanical Dimensions



## Functional diagram

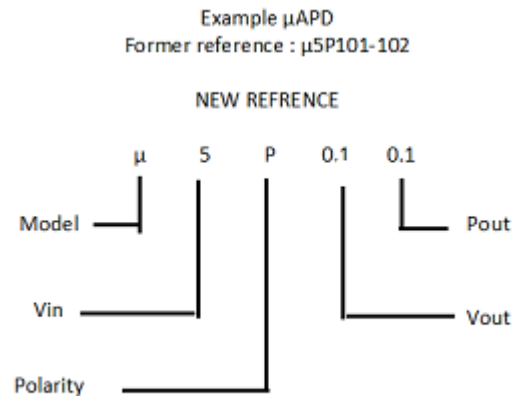


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## Ordering information (new reference)

Model	Name of the series	μ
Vin	4.5Vdc to 5.5Vdc	5
	11,5Vdc; to 15.5 Vdc	12
Polarity	Positive output voltage	P
	Negative output voltage	N
lout	Output voltage	0.1
Pout	Output power	0.1



### Output voltage and power code:

The power supply units have a 5-digit ordering code;

- The first 4 letters refer to the series
- The first digit indicate the input voltage value
- The following letter indicates the polarity
- The next digit indicate the nominal output voltage in kV
- The last digit indicates the power in Watt

### Ordering example

The ordering code of a positive +500V@100mW psu under 5Vdc is:  
μ5P0.1-0.1



This High Voltage power supply satisfies the requirements of EC Directives Safety.

Non contractual document.  
All specifications are subject to change without notice.

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