

## A7501

**1 Ch 2100 V/100  $\mu$ A  
High Efficiency HV  
Power Supply  
Module**



## Features



- High efficiency
- 2100 V/100  $\mu$ A output ranges
- Available with positive or negative polarity
- Compact package: 29x54x16 mm<sup>3</sup> (WxLxH)

## Description

The **CAEN Mod. A7501** is a high efficiency, low noise single channel High Voltage DC/DC converters in a PCB mount form factor. It provides a programmable and monitorable output voltage ranging from **0** to **2100 V**, when supplied with a **+12 V** input. It is available with either positive or negative output voltage. The output voltage is regulated by providing a **0** to **+2.5 V** external voltage ( $V_{set}$ ). The maximum output current is **100  $\mu$ A**, regulated by providing **0** to **+2.5 V** external voltage ( $I_{set}$ ). The board is provided with an over-current protection: if a current larger than the lout maximum value is drawn, the module is not being damaged. Thanks to its excellent stability and special design, **A7501** power supply is engineered to work in **harsh environment and under severe temperature variations**.

The module is engineered on a **FR4 PCB**, coated and housed in **DC01 steel box**. CAD Altium library components and 3D step models are available on request.

### Safety Features include:

- Overcurrent detection if the channel attempts to draw a current larger than  $I_{set}$ , the output voltage is varied to keep the current below  $I_{set}$  limit. The channel behaves like a current generator.
- Protected against short circuits, sparks and humidity.

## Technical Specifications

### Packaging

Material: DC01; dimension: W=29 mm ; L=54 mm ; H=16 mm

### Number of Channels

1

### Maximum Output Current (I<sub>out</sub>)

100  $\mu$ A at +2100 V

### Output Voltage (V<sub>out</sub>)

0 ÷ 2100 V

### Contact pins

Male strip header; 2.54mm step; phosphor bronze; UL94V0 insulator

### Protection

Over current, short circuit, sparks and humidity

### Operating temperature

-40° C ÷ +70° C

### Storage temperature

-55° C ÷ +85° C

### Output Ripple (Full Load)

Typical 5mVpp;

Maximum 10mVpp

### Efficiency

60% @ V<sub>out</sub> = 2100 (-20° C ÷ +70° C)

### V<sub>out</sub> / Temperature coefficient

<60 ppm / ° C

### DeltaV<sub>out</sub>/V<sub>out</sub> (for $\pm 5\%$ V<sub>in</sub> variations)

<1.5 X 10<sup>-3</sup> @ full scale

### V<sub>out</sub> vs. V<sub>set</sub> Integral Non Linearity

< $\pm 0.3\%$  (-40° C ÷ +70° C)

### V<sub>mon</sub> vs. V<sub>out</sub> Integral Non Linearity

< $\pm 0.3\%$  (-40° C ÷ +70° C)

### Voltage Supply (Vin)

+12 V  $\pm$  5%

### Enable

If Enable > 2.8 V Channel active  
If Enable < 1 V Channel disabled

### Vset Input (positive analog command)

0 ÷ +2.5 V  
Important!: Vset must not exceed 2 V (Vout is not limited)

### Vmon Output (positive analog command)

0  $\pm$  +5 V

### Iset input (positive analog command)

0  $\pm$  +2.5 V

### Imon Output (positive analog command)

0  $\pm$  +2.5 V

### Status OVC bit

0÷5 V (high = OVC)

### Electromagnetic compatibility

Weak emission of electromagnetic impulse and RF; one-piece metal shielding with several ground connections

### Power requirement

<400 mW; @ 2100 V / 110  $\mu$ A (Rload ~ 20 M $\Omega$ )

## Ordering Options

Code	Description	
WA7501NXAAAA	A7501N -2.1kV 100µA HV Power Supply Module (12V in)	RoHS
WA7501PXAAAA	A7501P +2.1kV 100µA HV Power Supply Module (12V in)	RoHS

## Accessories

### DT75XX



HV Carrier Board for A750x PCB Modules

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## Related Products

### A7501B



1 Ch 2100 V / 100  $\mu$ A High Efficiency HV Power Supply Box

### A7502



1 Ch 2100 V/100  $\mu$ A High Efficiency HV Power Supply Module (5V in)

### A7505



1 Ch 1600 V/500  $\mu$ A High Efficiency HV Power Supply Module

### A7526



1 Ch 2600 V/500  $\mu$ A High Efficiency HV Power Supply Module - PCB Mount

### A7508



1 Ch 800 V/50  $\mu$ A High Efficiency HV Power Supply Module (5V in)

## A7504C



1 Ch 4 kV/100  $\mu$ A High Efficiency HV Power Supply Module

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## A7511



1 Ch 1100 V/1000  $\mu$ A High Efficiency HV Power Supply Module

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