

high voltage DC/DC converter modules

ultra-miniature DC/DC high voltage power supplies for PCB mounting

- ⚡ output voltage: 100 VDC to 10 kVDC
- ⚡ positive or negative output polarity
- ⚡ output power up to 6 W
- ⚡ single or dual output
- ⚡ input voltage 5, 12, 15 or 24 VDC



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high voltage DC/DC converter modules

AMS Technologies offers a broad range of professional high voltage DC/DC converters in modular form primarily for PCB mounting. Encompassing several different package forms, these modules start at 100 V output types of just over 1 cm³ in size and reach all the way to 6 kV output versions with 6 W output power.

Many optical applications, such as APD and Pockel cell drivers, as well as industrial capacitor charging applications require this feature set of high voltage and low power. The customer can choose between devices with fixed voltage output and solutions whose output voltage can be modulated via analog input or via a PC interface.

applications

Typical applications for this product range are mainly in the field of photonics (such as photomultiplier tubes, flash lamps, avalanche photodiodes, focusing optics or gas chromatography) but also include electro chuck, inkjet printing or spectrometers.

SDS High Voltage DC/DC Modules

Series	μAPD	APD	PRV	MTV	MTM	WRV	WRM	DA	DE
Input Voltage Vin	5, 12 VDC	5, 12 VDC	2.5 to 15 VDC	12, 15, 24 VDC	12, 15, 24 VDC	5, 12, 24 VDC	5, 12, 24 VDC	15, 24 VDC	15, 24 VDC
HV Output Vout	0 to 100 VDC	200, 300, 400, 500 VDC	0.5, 1, 2, 4 kVDC	0.6, 1, 1.25, 1.5 kVDC	0.6, 1, 1.25, 1.5 kVDC	2, 2.5, 3 kVDC	2, 2.5, 3 kVDC	1, 2, 4 kVDC	1, 2, 4, 6 kVDC
Polarity	Fixed Pos. or Neg.	Fixed Pos. or Neg.	Customizable	Fixed Pos. or Neg.	Fixed Pos. or Neg.	Fixed Pos. or Neg.	Fixed Pos. or Neg.	Fixed Pos. or Neg.	Fixed Pos. or Neg.
HV Output Programmable	Yes	Yes	Proportional to Input Voltage	Yes	Yes	Yes	Yes	Yes	Yes
HV Power ON/OFF	No	Yes	Yes	No	No	Yes	Yes	Yes	Yes
Output Current	1 mA	500, 330, 250, 200 μA	6, 3, 1.5 mA	0.33 to 1.67 mA	0.33 to 1.67 mA	500, 400, 330 μA	500, 400, 330 μA	0.25 to 4 mA	0.16 to 6 mA
Ripple	<25 mV pp	<20 mV pp	1%, TBC	<10 to <40 mV pp	<10 to <40 mV pp	0.002%	0.002%	0.005% pp	0.005% pp
Load Voltage Regulation	±0.01% of full output voltage	±0.01% of full output voltage	+40% no to full load	±0.01% of full output voltage	±0.01% of full output voltage	±0.01% of full output voltage	±0.01% of full output voltage	±0.01% of full output voltage	±0.01% of full output voltage
Temperature Coefficient	<15 ppm/°C	<50 ppm/°C	<300 ppm/°C	100 ppm/°C	100 ppm/°C	<50 ppm/°C	<50 ppm/°C	100 ppm/°C	100 ppm/°C
Operating Temperature	-10 to +50 °C	-10 to +50 °C	-10 to +70 °C	-40 to +50 °C	-40 to +50 °C	-40 to +80 °C	-40 to +80 °C	-10 to +70 °C	-10 to +70 °C
Dimensions	11 x 11 x 11 mm	25.5 x 11.0 x 20.5 mm	47 x 28 x 12.5 mm	46.0 x 12.0 x 24.6 mm	47.0 x 28.0 x 12.5 mm	46.0 x 12.0 x 24.6 mm	47.0 x 28.0 x 12.5 mm	63.5 x 13.0 x 44.0 mm	63.5 x 13.0 x 44.0 mm
Weight	5 g	13 g	<40 g	35 g	35 g	35 g	35 g	72 g	72 g
Mounting	Flat	Flat	Flat	Raised	Flat	Raised	Flat	Flat	Flat
Options	Pos./Neg. Polarity	Pos./Neg. Polarity	Single/Dual Output Versions	3 Power Versions: 0.5, 0.8, 1 W; Polarity +/-	3 Power Versions: 0.5, 0.8, 1 W; Polarity +/-	Pos./Neg. Polarity	Pos./Neg. Polarity	3 Power Versions: 1, 2, 4 W; Polarity +/-	4 Power Versions (6 kV): 1, 2, 4, 6 W; Polarity +/-



- Optical Technologies
- Power Technologies
- Thermal Management



μAPD series



The μAPD series of PCB-mount, ultra compact, regulated, high voltage DC/DC-converters is the smallest regulated DC/DC power supply for APDs and MPPCs that need a bias voltage ranging from 0 to 100 V.

Key Features:

- Ultra Miniature and Lightweight
- Tight Line/Load Regulation, Low Ripple
- PCB Flat Mounting
- Output Current Limit Protection

Applications: Avalanche Photodiodes (APD); Silicon Photomultipliers (SiPM)

APD series



The highly compact APD-Series is specifically designed to meet the needs of professionals working to develop products for the growing commercial, and research, applications of avalanche photodiodes. These units enable customers in domains including laser range finders, fiber optic telecommunications and particle physics to achieve greater quantum efficiency and reduced total leakage current.

Key Features:

- Enable/Disable/Inhibit
- Optional Flying Lead for HV Output

Applications: Fiber-optic Telecom Detectors; Avalanche Photodiodes (APD); Particle Physics Detectors; Laser Range Finders; Silicon Photomultipliers (SiPM); Multi-pixel Photon Counters (MPPC)

PRV series



The PRV Series is a dual-output, high voltage power module with high efficiency. The module's isolated output voltage is proportional to its input voltage. Designed for flat mounting, the PRV series devices are micro-size and lightweight. Features for the PRV series include up to 500 VDC isolation, ON/OFF input and protection against over voltage and over temperature (shutdown plus signaling).

Key Features:

- Input/Output Proportional HV DC/DC Power Module
- Output Configuration: Single or Dual
- Output Power: 6 W

Applications: DC to High Voltage DC Bias Supplies for General Purpose Uses; Ink-jet Printers; Electrostatic Separators; PMT, MCP and Radiation Counters; Electron-beam Deflectors and Focusing Optics

MTM/MTV series



The MTM and MTV series of PCB mount, ultra compact, regulated, high voltage DC/DC converters are ideal solutions for PMTs and other devices that need a bias voltage ranging from 0 to 1,5 kV, with very low current. While MTM series modules are designed for flat PCB mounting, MTV variants with a smaller footprint but more height are designed to be mounted vertically or raised onto the PCB.

Key Features:

- Miniature and Lightweight
- Tight Line/Load Regulation, Low Ripple
- Arc and Continuous Short Circuit Protection
- Flat or Raised PCB Mounting
- Voltage Monitoring

Applications: Photomultiplier Tubes (PMT); Avalanche Photo Diodes (APD); Photodiodes (PD)

WRM/WRV series



The WRM and WRV Series of PCB mount, ultra compact, regulated, high voltage DC/DC converters for flat (WRM) or raised (WRV) mounting onto the PCB allow an exceptional wide input voltage range. These converters are recommended for unregulated supplies such as batteries, solar cells, etc. as well as for systems with versatile sources of power. A pre-regulator is not required.

- Wide Input Ranges
- Tight Line/Load Regulation, Low Ripple
- Arc and Continuous Short Circuit Protection
- Flat or Raised PCB Mounting
- Voltage Monitoring

DA/DE series



The DA (up to 4 kV output voltage at up to 4 W) and DE (up to 6 kV at up to 6 W) series of PCB mount, ultra compact, regulated, high voltage DC/DC converters are particularly adapted to controlling photonic detectors that need high bias voltages and currents. Industrials, integrators and researchers will benefit from the units' small size, lightweight design, excellent voltage regulation and reduced residual ripple.

- Small Height and Lightweight
- Tight Line/Load Regulation, Low Ripple
- Voltage and Input Monitoring
- Logical ON/OFF Input

Applications: Avalanche Photo Diodes (APD); Electrostatic Chuck; E-Beam Lithography; Focused Ion Beam; Laboratory; Gas Chromatography; Geiger-Mueller Tubes; HV & Insulator Testing; Photomultiplier Tubes (PMT); Spectrometers; Other



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