



**ULTRAVOLT® D SERIES**  
MICRO-SIZED HIGH VOLTAGE BIASING SUPPLIES





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# **Single-output** micro-sized HV modules

The D series of high voltage power supplies is designed to meet the needs of customers with low-profile, < 13 mm (< 0.511") or < 17.5 mm (< 0.689") applications at 1 to 6 W. These ultra-compact modules are ideal for detectors that require high-bias voltages and currents at low ripple. D series PCB-mount high voltage power supplies feature a lightweight design, state-of-the-art surface-mount technology, and five-sided metal enclosures.

## Features

- › 4 models from 0 to 1 kV through 0 to 6 kV
- › 1, 2, 4 or 6 W output power
- › Low ripple (< 0.02% peak to peak)
- › Tight line/load regulation
- › Output current limit protection
- › Adjustable from 0 to full output
- › Buffered voltage and current monitoring
- › 15 or 24 VDC Input
- › Low profile and lightweight
- › PCB flat mounting

## Typical Applications

- › Scanning electron microscopes (SEM)
- › Mass spectrometry
- › Gas chromatography
- › Spectrometers
- › Electrostatic chuck (e-chuck)
- › PZT drivers
- › Pulse generators
- › Laser electro-optic modulation
- › Fiber-optic telecom detectors
- › Particle physics detectors
- › Laser range finder detectors
- › Detectors
- › Geiger-Muller tubes (GM)
- › Avalanche photo diodes (APD)
- › Photo multiplier tubes (PMT)
- › Photodiodes (PD)
- › Multi-pixel photon counters (MPPC)
- › Channel electron multipliers
- › Silicon detectors (SiD)
- › Silicon photomultipliers (SiPM)
- › Image intensifiers (II and IIT)
- › Microchannel plates (MCP)
- › Ionization chamber detectors
- › Thin-film bias
- › High voltage testing
- › ATE leakage testing
- › General laboratory
- › Bias supplies



| PARAMETERS  | SPECIFICATIONS   | UNITS             |
|---|--|-------------------|
| <b>Input Voltage Vin (Pins 2 and 3)</b>                                       | 15 VDC $\pm 1.5$ V or 24 VDC $\pm 2$ V, according to type  | VDC               |
| <b>Input Current</b>  | Example for a 15 VDC, output 6000 V, 1 mA model:<br>inhibition mode: 27 mA at no load and HV = 6000 V 46 mA, at full load < 630 mA | -                 |
| <b>Polarity</b>   | Fixed positive or negative   | -                 |
| <b>Output Voltage</b>   | 0 to 1000      0 to 2000      0 to 4000      0 to 6000   | VDC               |
| <b>Output Power</b>   | 1   2   4   6   1   2   4   6   1   2   4   6   1   2   4   6  | W                 |
| <b>Output Current</b>   | 1   2   4   6   0.5   1   2   3   0.25   0.5   1   1.5   0.17   0.33   0.67   1  | mA                |
| <b>Programming (Pins 4 and 6)</b>   | Via external voltage source 0 to +5 V $\pm 0.1\%$ at full scale, and input impedance = 94 k $\Omega$                               | -                 |
| <b>Max Output Current Iout</b>  | Limited to 110% of nominal current   | -                 |
| <b>Load Voltage Regulation</b>  | $\pm 0.01\%$ of full output voltage for no load to full load   | VDC               |
| <b>Line Voltage Regulation</b>  | $\pm 0.01\%$ of full output voltage over specified input voltage range   | VDC               |
| <b>Residual Ripple</b>  | < 0.02% at full load   | V pk to pk        |
| <b>Temperature Coefficient</b>  | 100  | PPM/ $^{\circ}$ C |
| <b>Output HV Monitoring (Pin 7) {still operating in inhibition mode}</b>      | Analog 0 to +5 V buffered output signal, accuracy $\pm 0.2\%$  | -                 |
|   | Output impedance = 1 k $\Omega$  |                   |
|   | Temperature coefficient: 50 ppm/ $^{\circ}$ C for $\leq 4$ kV units, 100 ppm/ $^{\circ}$ C for 6 kV units                          |                   |
| <b>Output Current Monitoring (Pin 5) {still operating in inhibition mode}</b> | Analog 0 to +5 V buffered output signal, accuracy $\pm 2\%$  | -                 |
|   | Output impedance = 1 k $\Omega$  |                   |
|   | Temperature coefficient: 100 ppm/ $^{\circ}$ C   |                   |
| <b>HV ON/OFF (Pin 1)</b>  | To disable (opened remote interlock) or enable (closed remote interlock)   | -                 |
| <b>Operating Temperature</b>  | -10 to +65, full load, max Eout, Tcase temp  | $^{\circ}$ C      |
| <b>Storage Temperature</b>  | -10 to +70   | $^{\circ}$ C      |
| <b>Safeguards</b>   | Protected against reverse Vin  | -                 |
|   | Soft start feature: the start is guaranteed with no overshoot  |                   |
|   | Auto inhibition if case > 75 $^{\circ}$ C  |                   |
|   | HV setting internally limited to 5.3 V   |                   |

1 to 4 kV, 1 to 4 W



1 to 4 kV, 6 W and 1 to 6 kV, 1 to 6 W



## PHYSICAL SPECIFICATIONS

|                     |   |
|---------------------|---|
| <b>Construction</b> | Tin steel plate, thickness 0.5 mm                                       |
|                     | Insulation: fully potted in an epoxy resin                              |
| <b>Volume</b>       | 1 to 4 kV, 1 to 4 W: 36.2 cc (2.21 in <sup>3</sup> )                    |
|                     | 1 to 4 kV, 6 W and 1 to 6 kV, 1 to 6 W: 48.6 cc (2.97 in <sup>3</sup> ) |
| <b>Weight</b>       | 1 to 4 kV, 1 to 4 W: 72 g (2.54 oz)                                     |
|                     | 1 to 4 kV, 6 W and 1 to 6 kV, 1 to 6 W: 85 g (3 oz)                     |

## Tolerance

|                    |                   |
|--------------------|-------------------|
| <b>Overall</b>     | ±0.3 mm (0.0118") |
| <b>Pin to Pin</b>  | ±0.1 mm (0.0039") |
| <b>Case to Pin</b> | ±1.5 mm (0.0591") |

Standard case length, width, and height specs are 1.27 mm (0.050")

Pin length > 6 mm (0.24"), spacing 2.54 mm (0.1")

## CONNECTIONS

| Pin | Function             |
|-----|----------------------|
| 1   | ENABLE/DISABLE       |
| 2   | POWER GROUND         |
| 3   | POSITIVE POWER INPUT |
| 4   | SIGNAL GROUND        |
| 5   | IOUT MONITOR         |
| 6   | REMOTE ADJUST INPUT  |
| 7   | EOUT MONITOR         |
| 8   | HV OUTPUT            |



**RoHS COMPLIANT** Non-RoHS compliant units are available. Please contact the factory for more information.

## ORDERING INFORMATION

|                 |                      |            |
|-----------------|----------------------|------------|
| <b>Type</b>     | 0 to 1000 VDC Output | 1D         |
|                 | 0 to 2000 VDC Output | 2D         |
|                 | 0 to 4000 VDC Output | 4D         |
|                 | 0 to 6000 VDC Output | 6D         |
| <b>Input</b>    | 15 VDC Nominal       | 15         |
|                 | 24 VDC Nominal       | 24         |
| <b>Power</b>    | W Output             | 1          |
|                 | W Output             | 2          |
|                 | W Output             | 4          |
|                 | W Output             | 6          |
| <b>Case</b>     | Steel, Tin-plated    | (Standard) |
| <b>Polarity</b> | Positive Output      | -P         |
|                 | Negative Output      | -N         |

The D series is not available in all territories. Please contact Advanced Energy for details concerning sales in your area.



For international contact information, visit [advanced-energy.com](http://advanced-energy.com).



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- Поставка более 17-ти миллионов наименований электронных компонентов;
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- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

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