



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





# 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

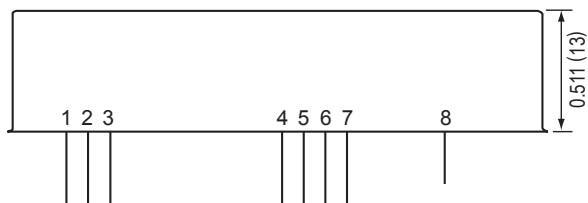
## Typical Applications

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

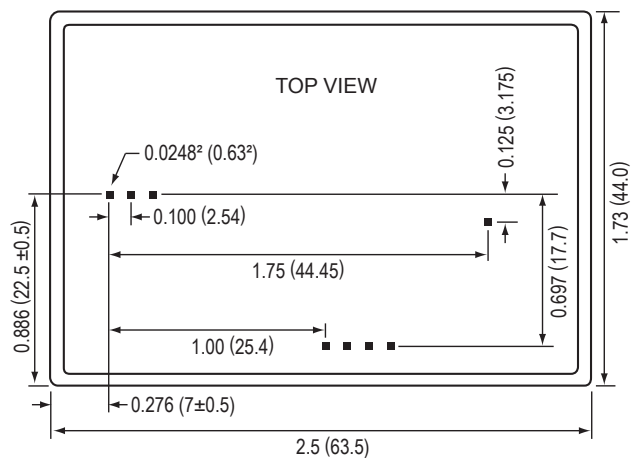
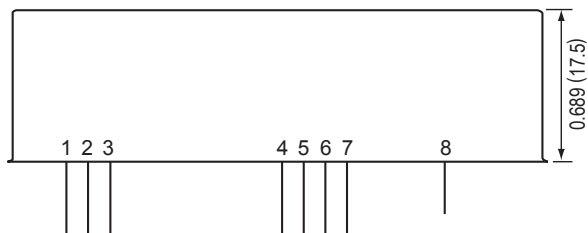


| PARAMETERS                                                                    | SPECIFICATIONS                                                                                                                     | UNITS             |
|-------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| <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)                     |
| <b>Tolerance</b>    |                                                                         |
| <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            |

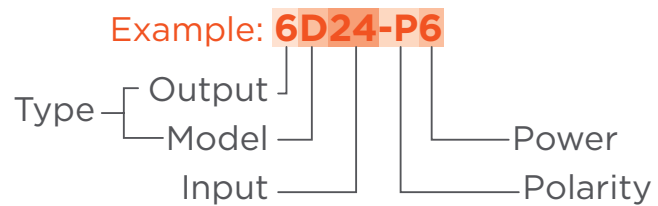


**RoHS**  
COMPLIANT

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

| ORDERING INFORMATION |                      |            |
|----------------------|----------------------|------------|
| Type                 | 0 to 1000 VDC Output | 1D         |
|                      | 0 to 2000 VDC Output | 2D         |
|                      | 0 to 4000 VDC Output | 4D         |
|                      | 0 to 6000 VDC Output | 6D         |
| Input                | 15 VDC Nominal       | 15         |
|                      | 24 VDC Nominal       | 24         |
| Power                | W Output             | 1          |
|                      | W Output             | 2          |
|                      | W Output             | 4          |
|                      | W Output             | 6          |
| Case                 | Steel, Tin-plated    | (Standard) |
| Polarity             | 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.



Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

Мы предлагаем:

- Конкурентоспособные цены и скидки постоянным клиентам.
- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
- Комплексную поставку.
- Работу по проектам и поставку образцов.
- Формирование склада под заказчика.
- Сертификаты соответствия на поставляемую продукцию (по желанию клиента).
- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
- Наличие сертификата ISO.

В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.

Конструкторский отдел помогает осуществить:

- Регистрацию проекта у производителя компонентов.
- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



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