



**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

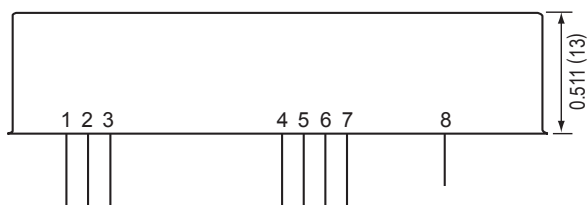
## Typical Applications

- |                                       |                                      |
|---------------------------------------|--------------------------------------|
| › 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                      |

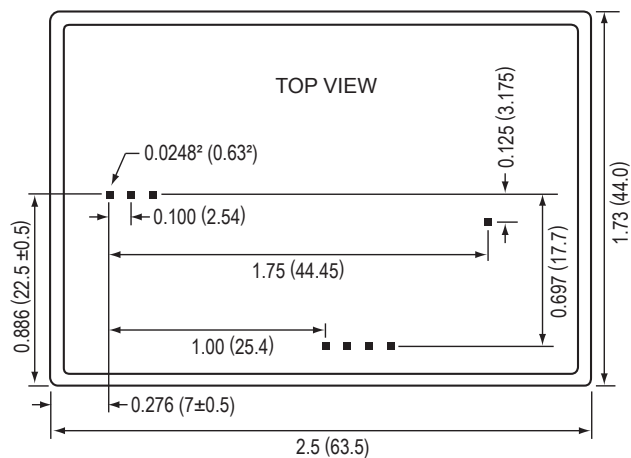
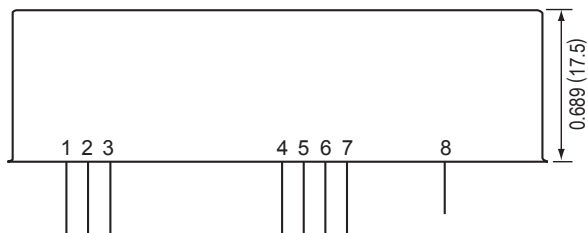


PARAMETERS	SPECIFICATIONS	UNITS
<b>Input Voltage Vin (Pins 2 and 3)</b>	15 VDC $\pm 1.5$ V or 24 VDC $\pm 2$ V, according to type	VDC
<b>Input Current</b>	Example for a 15 VDC, output 6000 V, 1 mA model: inhibition mode: 27 mA at no load and HV = 6000 V 46 mA, at full load < 630 mA	-
<b>Polarity</b>	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

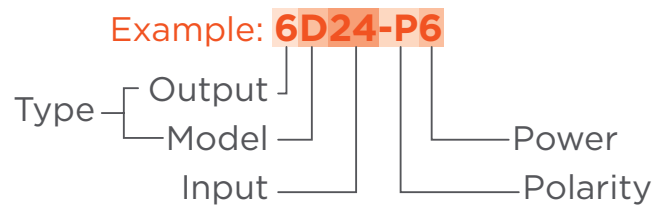


**RoHS**  
COMPLIANT

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.



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