



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)
- › 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
Input Voltage Vin (Pins 2 and 3)	15 VDC ± 1.5 V or 24 VDC ± 2 V, according to type	VDC
Input Current	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	-
Polarity	Fixed positive or negative	-
Output Voltage	0 to 1000 0 to 2000 0 to 4000 0 to 6000	VDC
Output Power	1 2 4 6 1 2 4 6 1 2 4 6 1 2 4 6	W
Output Current	1 2 4 6 0.5 1 2 3 0.25 0.5 1 1.5 0.17 0.33 0.67 1	mA
Programming (Pins 4 and 6)	Via external voltage source 0 to +5 V $\pm 0.1\%$ at full scale, and input impedance = 94 k Ω	-
Max Output Current Iout	Limited to 110% of nominal current	-
Load Voltage Regulation	$\pm 0.01\%$ of full output voltage for no load to full load	VDC
Line Voltage Regulation	$\pm 0.01\%$ of full output voltage over specified input voltage range	VDC
Residual Ripple	< 0.02% at full load	V pk to pk
Temperature Coefficient	100	PPM/ $^{\circ}$ C
Output HV Monitoring (Pin 7) {still operating in inhibition mode}	Analog 0 to +5 V buffered output signal, accuracy $\pm 0.2\%$	-
	Output impedance = 1 k Ω	
	Temperature coefficient: 50 ppm/ $^{\circ}$ C for ≤ 4 kV units, 100 ppm/ $^{\circ}$ C for 6 kV units	
Output Current Monitoring (Pin 5) {still operating in inhibition mode}	Analog 0 to +5 V buffered output signal, accuracy $\pm 2\%$	-
	Output impedance = 1 k Ω	
	Temperature coefficient: 100 ppm/ $^{\circ}$ C	
HV ON/OFF (Pin 1)	To disable (opened remote interlock) or enable (closed remote interlock)	-
Operating Temperature	-10 to +65, full load, max Eout, Tcase temp	$^{\circ}$ C
Storage Temperature	-10 to +70	$^{\circ}$ C
Safeguards	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

Construction	Tin steel plate, thickness 0.5 mm
	Insulation: fully potted in an epoxy resin
Volume	1 to 4 kV, 1 to 4 W: 36.2 cc (2.21 in ³)
	1 to 4 kV, 6 W and 1 to 6 kV, 1 to 6 W: 48.6 cc (2.97 in ³)
Weight	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

Overall	±0.3 mm (0.0118")
Pin to Pin	±0.1 mm (0.0039")
Case to Pin	±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.



For international contact information, visit advanced-energy.com.