Advanced Energy®

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

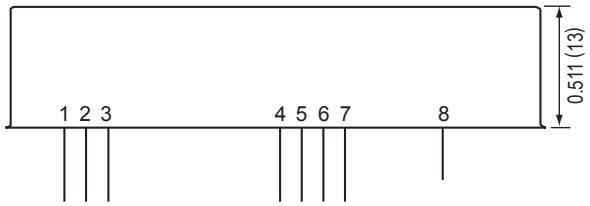
- 4 models from 0 to 1 kV through 0 to 6 kV
- 1, 2, 4 or 6 W output power
- Low ripple (< 0.02% peak to peak)
- Tight line/load regulation
- Output current limit protection
- Adjustable from 0 to full output
- Buffered voltage and current monitoring
- 15 or 24 VDC Input
- Low profile and lightweight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

Typical Applications

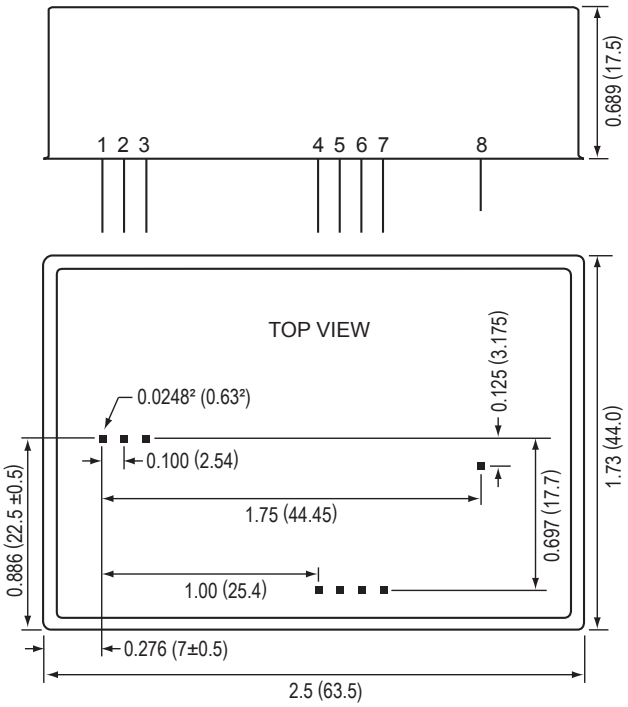
- Scanning electron microscopes (SEM)
- Mass spectrometry
- Gas chromatography
- Spectrometers
- Electrostatic chuck (e-chuck)
- PZT drivers
- Pulse generators
- Laser electro-optic modulation
- Fiber-optic telecom detectors
- Particle physics detectors
- Laser range finder detectors
- Detectors
- Geiger-Muller 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 ±0.1% at full scale, and input impedance = 94 kΩ																-
Max Output Current Iout	Limited to 110% of nominal current																-
Load Voltage Regulation	±0.01% of full output voltage for no load to full load																VDC
Line Voltage Regulation	±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/°C
Output HV Monitoring (Pin 7) {still operating in inhibition mode}	Analog 0 to +5 V buffered output signal, accuracy ±0.2%																-
	Output impedance = 1 kΩ																
	Temperature coefficient: 50 ppm/°C for ≤ 4 kV units, 100 ppm/°C for 6 kV units																
Output Current Monitoring (Pin 5) {still operating in inhibition mode}	Analog 0 to +5 V buffered output signal, accuracy ±2%																-
	Output impedance = 1 kΩ																
	Temperature coefficient: 100 ppm/°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																°C
Storage Temperature	-10 to +70																°C
Safeguards	Protected against reverse Vin																-
	Soft start feature: the start is guaranteed with no overshoot																
	Auto inhibition if case > 75°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 in³)
	1 to 4 kV, 6 W and 1 to 6 kV, 1 to 6 W: 48.6 cc (2.97 in³)
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

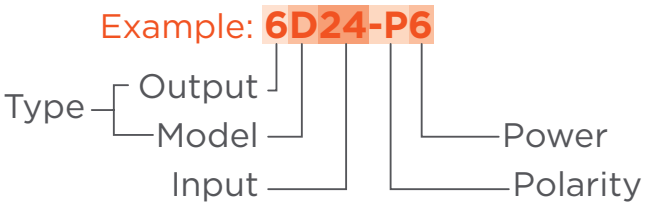
CE cULus IEC-60950-1

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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For international contact information, visit
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