ULTRAVOLT V SERIES

VERTICAL, MICRO-SIZED HIGH VOLTAGE BIASING SUPPLIES



The vertical, micro-sized V series is the ideal solution for applications that require a bias voltage ranging from 0 to 3000 V and very small current, at only 13.8 cc (0.84 in^3). With a footprint under 2.54 cm^2 (1 in^2), these modules are perfect for applications with limited board space.

PRODUCT HIGHLIGHTS

- 7 models from 0 to 600, 1000, 1250, 1500, 2000, 2500, or 3000 V
- 0.5, 0.8, or 1 W of output power
- Tight line/load regulation
- Arc and continuous short circuit protection
- Self-restoring output voltage
- Low cost, miniature, and lightweight
- Voltage monitoring
- Low ripple (0.01% peak to peak)
- Optional flying lead for high-voltage output
- UL/cUL recognized, IEC-60950-1, CE Mark (LVD and RoHS)

TYPICAL APPLICATIONS

- Bias supplies
- Electrostatic chucks
- Hand held x-ray florescence (XRF)
- Avalanche photo diodes (APD)
- Photomultiplier tubes (PMT)
- Silicon detector (SiD)
- X-ray flat panel detector (FPD)
- Ionization chamber detector

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ELECTRICAL SPECIFICATIONS

Parameter	Specifications												Units
Input Voltage Vin (Pins 1 and 2)	5 ±0.5 (2 to 3 kV only) 12 ±1, 15 ±1 (600 V to 1.5 kV only), or 24 ±2												VDC
Input Voltage	5 (2 to 3 kV only)			12			15 (600 V to 1.5 kV only)			24			V
Input Current	No load: 55, full load: 450			No load: 45, full load: 200			No load: 40, full load: 190			No load: 35, full load: 160			mA
Polarity	Fixed positive and fixed negative												-
Output Voltage	0 to 600			0 to 1000			0 to 1250			0 to 1500			VDC
Input Voltage	12	15	24	12	15	24	12	15	24	12	15	24	VDC
Output Power	0.5	0.8	1	0.5	0.8	1	0.5	0.8	1	0.5	0.8	1	W
Output Current	0.83	1.33	1.67	0.5	0.8	1	0.4	0.64	0.8	0.33	0.53	0.67	mA
Output Voltage	0 to 2000			0 to 2500			0 to 3000						VDC
Input Voltage	5	12	24	5	12	24	5	12	24				VDC
Output Power	0.5	0.8	1	0.5	0.8	1	0.5	0.8	1				W
Output Current	0.25	0.40	0.50	0.20	0.32	0.40	0.167	0.267	0.333				mA
HV Setting	10 to 100K (potentiometer across vRef. and signal ground, wiper to adjust)												-
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	< 0.01% at full load												V pk to pk
Temperature Coefficient	100 ppm/°C for the max output voltage after starting and over temperature range 0 to 50°C												-
Output Voltage Monitor (600 to 1500 V)	+1 V/1 kV max or -1 V/-1 kV max according to model polarity output impedance = 200 kΩ ±1%												-
Output Voltage Monitor (2 to 3 kV)	12 to 24 V input only: 0 to +5 V ±2%												-
	5 V inputs: 0 to +2.5 V ±2%												-
Reference Voltage	12 to 24 V input only: 5 V ±1%, TC: 100 ppm/°C, max output current: 1 mA												-
	5 V inputs: 2.5 V ±1%, TC: 100 ppm/°C, max output current: 1 mA												-
Operating Temperature	-10 to +65, full load, max Eout, case temp.												°C
Storage Temperature	-20 to +70												°C
Safeguards	Arc and short circuit protection												-
Options	Flying lead for HV output												-
Enhanced Interface (-EI) Option (2 to 3 kV Only)	Enable/disable (ON/OFF): 0 V to +0.5 V enable, +2.4 V to V_input disable (default = disable)												-
	Output current monitor (5 V input only): 0 to +2.5 V ±2%												-
	Output current monitor (12 to 24 V input): 0 to +5.0 V ±2%												-

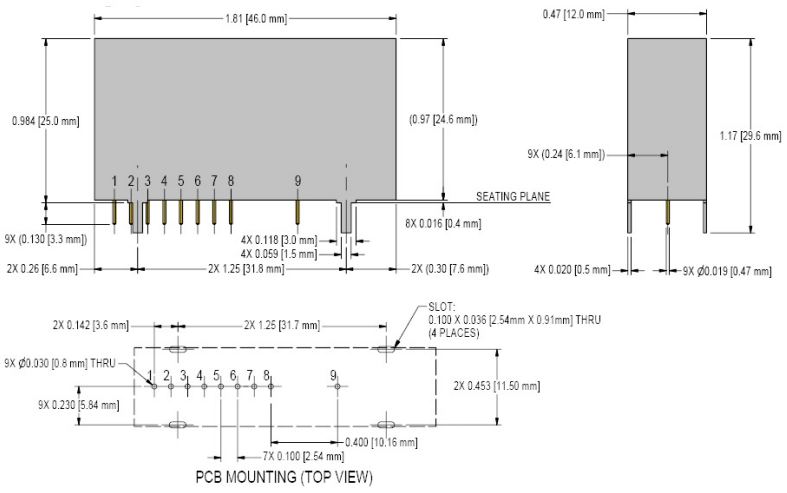
MECHANICAL SPECIFICATIONS

Physical Specifications	
Construction	Steel, tin-plated, thickness 0.5 mm (0.02")
	Fully potted in silicone RTV
Volume	13.8 cc (0.84 in^3)
Weight	35 g (1.23 oz)
Tolerance	
Overall	±0.76 mm (0.0030")
Pin to Pin	±0.38 mm (0.015")
Tabs Location	±0.51 mm (0.020")
Tab to Tab	±0.25 mm (0.010")

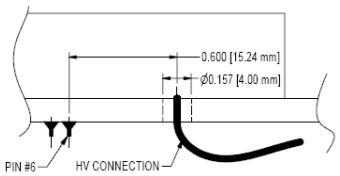
0.47 mm (0.019") round pins, length: 3 mm (0.12"), spacing: 2.54 mm (0.1")

PCB mounting through 4 mounting tabs: length: 5 mm (0.2"), width: 1.5 mm (0.059"), thickness: 0.5 mm (0.02")

Optional flying lead for HV output: coaxial cable (RG178), diameter: 2 mm (0.079"), length: 500 mm (19.685")



PCB MOUNTING (TOP VIEW)



FLYING LEAD OPTION-WS

Pins 7 and 8 are available for 2 k to 3 kV units with enhanced interface option ONLY. Drawing views: third angle projections.

Measurements are in inches (millimeters).

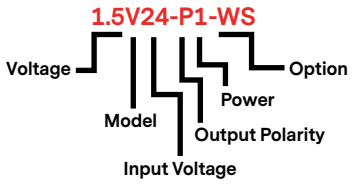
INTERFACE

Connections	
Pin	**Function**
1	Positive Power Input
2	Power Ground
3	Signal Ground
4	Remote Adjust Input
5	Reference Voltage
6	Voltage Monitor
7	Current Monitor (available with -EI option ONLY)
8	Enable (available with -EI option ONLY)
9	HV Output

Mounting tabs must be connected to ground.

ORDERING INFORMATION

Type	0 to 600 VDC Output	0.6 V
	0 to 1000 VDC Output	1 V
	0 to 1250 VDC Output	1.25 V
	0 to 1500 VDC Output	1.5 V
	0 to 2000 VDC Output	2 V
	0 to 2500 VDC Output	2.5 V
	0 to 3000 VDC Output	3 V
Input	5 VDC Nominal (2 to 3 kV Only)	5
	12 VDC Nominal	12
	15 VDC Nominal (600 V to 1.5 kV Only)	15
	24 VDC Nominal	24
Power	0.5 W Output	0.5
	0.8 W Output	0.8
	1 W Output	1
Case	Tin Steel Case	(Standard)
Polarity	Positive Output	-P
	Negative Output	-N
Option	Shielded Flying Lead for HV Output (600 V to 1.5 kV Only)	-WS
	Flying Lead for HV Output (2 to 3 kV Only)	-W
	Current Monitor/Enable Pin (2 to 3 kV Only)	-EI



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

ABOUT ADVANCED ENERGY

Since 1981, UltraVolt® — now part of the Advanced Energy (AE) family — has perfected how power performs for its customers. For both end users and OEMs, AE's comprehensive portfolio of standard and custom high voltage components precisely match system specifications to deliver unparalleled energy, quality, and performance. Through close customer collaboration, design expertise, application insight, and world-class support, AE creates successful partnerships and enables customers to push the boundaries of innovation and stay ahead of evolving market needs.

PRECISION | POWER | PERFORMANCE



CAUTION:
High Voltage

Read and understand all documentation before you install, operate, or maintain Advanced Energy high voltage power supplies. Follow all safety instructions and precautions to protect against property damage and serious or possibly fatal bodily injury. Never defeat safety interlocks or grounds.

Advanced Energy

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