

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 in³). With a footprint under 2.54 cm² (1 in²), 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

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%	-

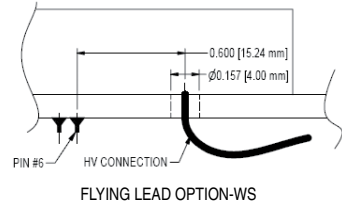
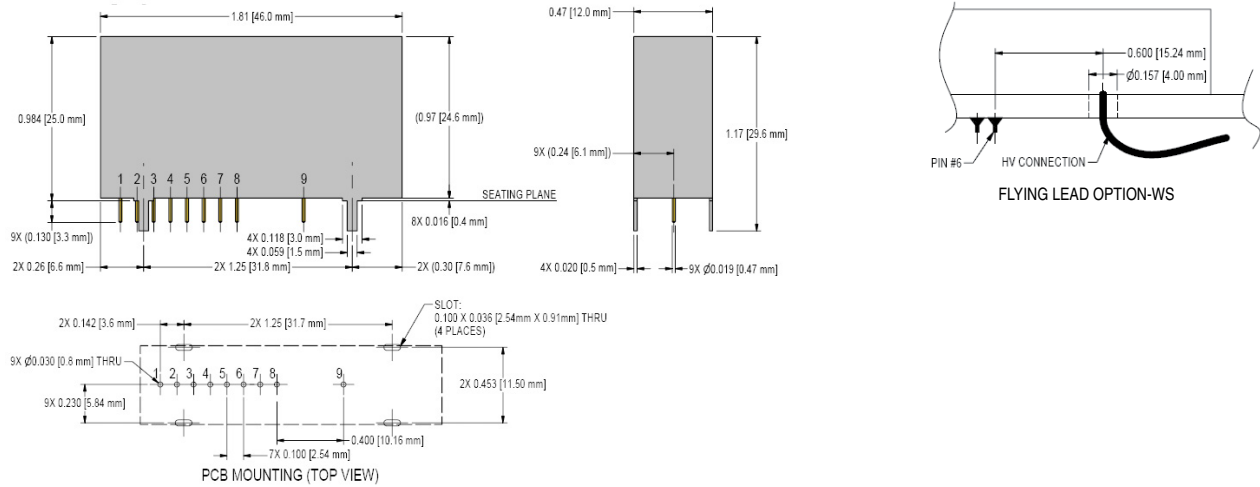
MECHANICAL SPECIFICATIONS

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")



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).

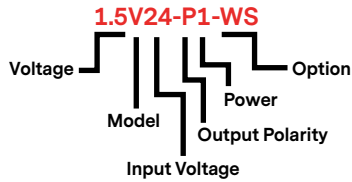
INTERFACE

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