V SERIES

Vertical, Microsize High Voltage Biasing Supply

The vertical, microsize V Series is the ideal solution for applications that require a bias voltage ranging from 0 to 3000V and very small current, at only 0.84in³ (13.8cc). With a footprint under 1in² (2.54cm²), these modules are perfect for applications with limited board space.

- 7 models from 0 to 600V, 1000V, 1250V, 1500V, 2000V, 2500V, or 3000V
- 0.5, 0.8, or 1 watt 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 HV output

Typical applications for the V Series include the following:

Bias Supplies	Scanning Electron Microscopes (SEM)
Avalanche Photo Diodes (APD)	Photomultiplier Tubes (PMT)

Please contact UltraVolt's customer service department for an analysis of your requirements.

PARAMETER	SPECIFICATION												UNITS
Input voltage Vin (pins 1 & 2)	5 ± 0.5 (2-3kV ONLY) 12 ± 1, 15 ± 1 (600V-1.5kV ONLY), or 24 ± 2												VDC
Input Voltage	5 (2-3kV Only)			12			15 (600V-1.5kV 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	10K to 100K (Potentiometer Across Vref. & 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												Vpk-pk
Temperature coefficient	100ppm/°C for the maximum output voltage after starting and over temperature range 0 to 50°C												-
Output Voltage Monitor (600V-1500V)	+1V/1kV max. or -1V/-1kV max. according to model polarity output impedance = 200kΩ ±1%												-
Output Voltage Monitor (2kV-3kV)	12-24V Input Only: 0 to +5V±2% 5V Inputs: 0 to +2.5V±2%												VDC
Reference Voltage	12-24V Input Only: 5V ±1%, TC:100ppm/°C, max. output current: 1mA 5V Inputs: 2.5V ±1%, TC:100ppm/°C, max. output current: 1mA												-
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 wire for HV output • Suitable for use with an external potentiometer												-
Enhanced Interface (-EI) Option (2kV-3kV Only)	Enable/Disable (ON/OFF): 0V to +0.5V Enable, +2.4V to V_input Disable (Default = Disable)												-
	Output Current Monitor (5V Input Only): 0 to +2.5V±2% Output Current Monitor (12-24V Input): 0 to +5.0V±2%												-

Specifications subject to change without notice.

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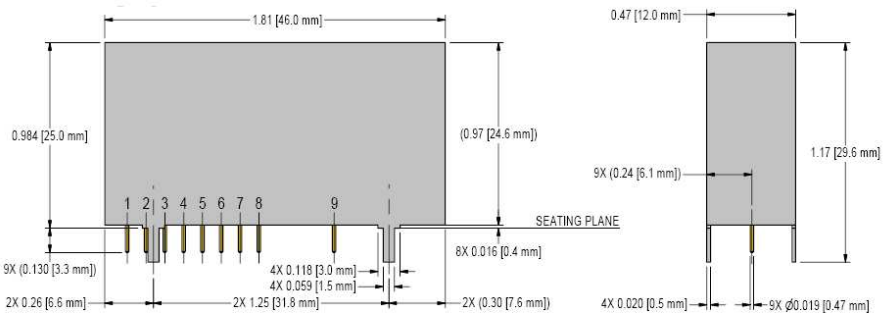
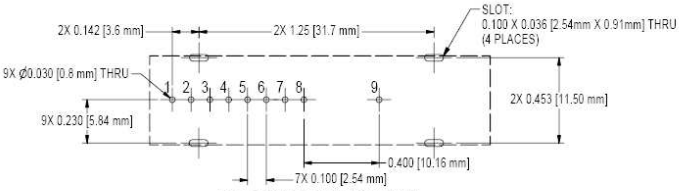
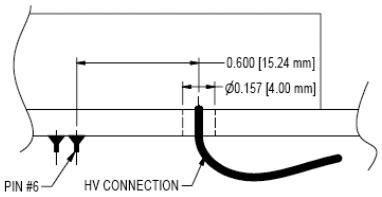
Note: Pins 7 & 8 are available for 2k-3kV units with Enhanced Interface option ONLY





PCB MOUNTING (TOP VIEW)



FLYING LEAD OPTION "-WS"

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

Note: Mounting tabs must be connected to ground.

RoHS COMPLIANT

Non-RoHS compliant units are available. Please contact the factory for more information.

CE cULus IEC-60950-1

CONSTRUCTION

Steel, tin plated, thickness 0.02" (0.5)
Insulation: fully potted in an epoxy resin

SIZE

Volume: 0.84in³ (13.8cc)
Weight: 1.23oz (35g)

TOLERANCE

Overall ±0.0030" (0.76)
Pin to Pin ±0.015" (0.38)
Tabs location ±0.020" (0.51)
Tab to Tab ±0.010" (0.25)

NOTES

0.019" (0.47) round pins, length: 0.12" (3), spacing: 0.1" (2.54)
PCB mounting through 4 mounting tabs: Length: 0.2" (5), width: 0.059" (1.5), thickness: 0.02" (0.5)
Optional flying lead for HV output: Coaxial cable (RG178), diameter = 0.079" (2) length = 19.685" (500)

DRAWING VIEWS

Third angle projections

ORDERING INFORMATION		
Type	0 to 600 VDC Output	0.6V
	0 to 1,000 VDC Output	1V
	0 to 1,250 VDC Output	1.25V
	0 to 1,500 VDC Output	1.5V
	0 to 2,000 VDC Output	2V
	0 to 2,500 VDC Output	2.5V
	0 to 3,000 VDC Output	3V
Input	5VDC Nominal (2-3kV Only)	5
	12VDC Nominal	12
	15VDC Nominal (600V-1.5kV Only)	15
	24VDC Nominal	24
Power	0.5 Watt Output	0.5
	0.8 Watt Output	0.8
	1 Watt Output	1
Case	Tin Steel Case	(Standard)
Polarity	Positive Output	-P
	Negative Output	-N
Option	Shielded Flying Lead for HV Output (600V-1.5kV Only)	-WS
	Flying Lead for HV Output (2-3kV Only)	-W
	Current Monitor/Enable Pin (2-3kV Only)	-EI

Example: 1.5V24-P1-WS

Type — Voltage — Model — Input
Option — Power — Polarity

Popular accessories ordered with this product include the PCB-CONN-M/V.

*The V Series is not available in all territories. Please contact an UltraVolt Applications Engineer for details concerning sales in your area.

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1800 Ocean Avenue, Ronkonkoma, NY 11779
Phone: 1-631-471-4444 Fax: 1-631-471-4696 www.ultravolt.com