ULTRAVOLT US SERIES

MICRO-SIZED HIGH VOLTAGE POWER SUPPLIES



Measuring only 5.75 cc (0.35 in^3), the highly compact, micro-sized UltraVolt® US series is specially designed to meet the needs of design engineers working with commercial, military, industrial, and medical applications. These modules allow access to voltages up to 500 V for customers with size-critical requirements.

PRODUCT HIGHLIGHTS

- Micro-sized: 5.75 cc
- Lightweight: 13 g
- PCB flat mounting: 11 mm height
- 4 models from 0 to 200 V to 500 V
- 100 mW output power
- Low ripple < 0.01% peak to peak
- Tight line/load regulation < ±0.01%
- Low temperature coefficient < ±50 ppm per °C
- Programmable HV output ±0.5% F.S.
- Output arc and short circuit protection
- 5, 9 or 12 VDC Input
- Precision 2.5 V reference
- TTL enable/disable/inhibit
- Output voltage monitor
- Metal case for low radiated noise
- Optional flying lead for HV output

TYPICAL APPLICATIONS

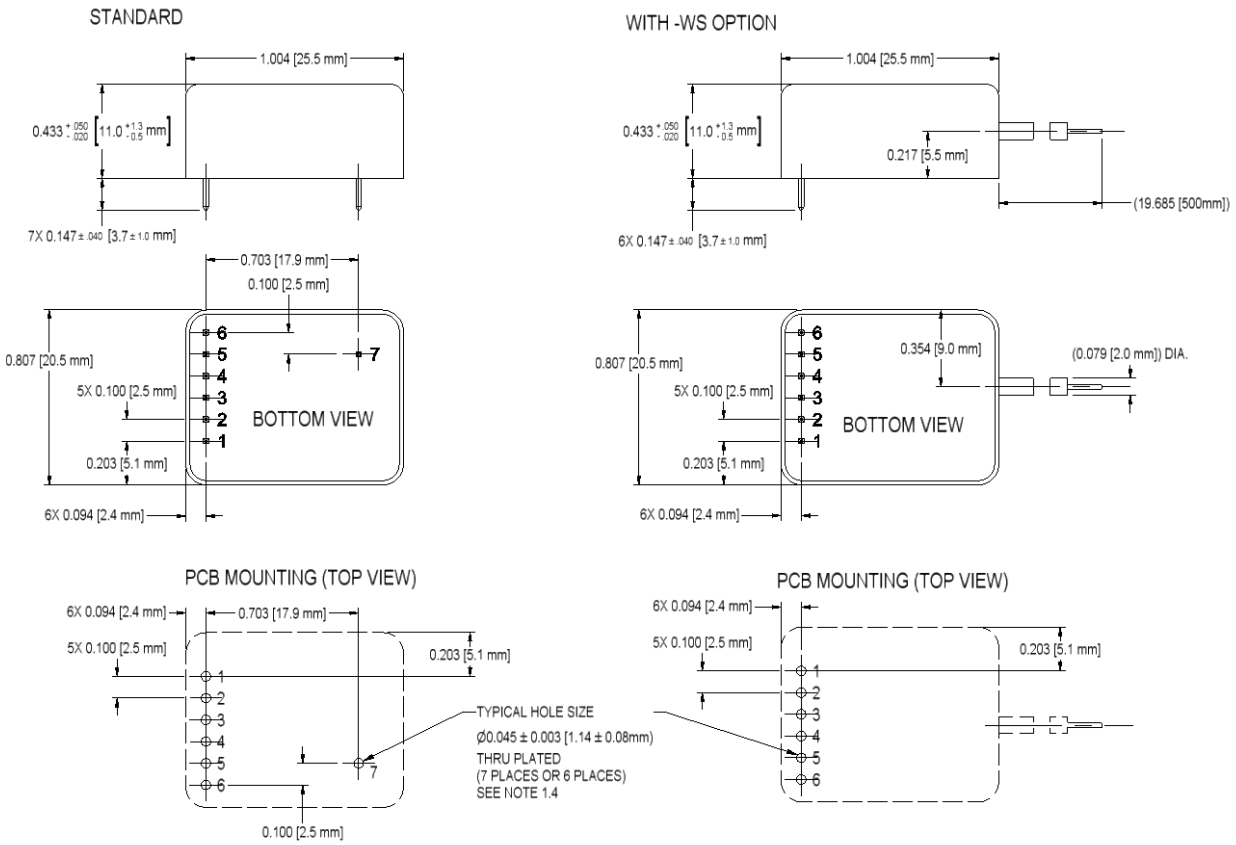
- Small, lightweight, portable devices
- Fiber-optic telecom detectors
- Particle physics detectors
- Laser range finder detectors
- Thin-film bias
- Avalanche photo diodes (APD)
- Silicon photomultipliers (SiPM)
- Multi-pixel photon counter (MPPC)
- Ionization detectors
- Ultrasonic transducers
- Small PZT drivers
- ATE leakage testing
- Bias supplies

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ELECTRICAL SPECIFICATIONS

Parameters	Specifications				Units
Input Voltage Vin	5 VDC ±0.5 or 12 to 15 ±0.5				VDC
Input Current	Inhibition mode: < 5 at full output voltage, full load:				mA
	< 65 (200 Vout)	< 60 (300 Vout)	< 55 (400 Vout)	< 50 (500 Vout)	mA
Polarity	Fixed positive or negative				-
Output Voltage	0 to 200	0 to 300	0 to 400	0 to 500	VDC
Output Current	500	330	250	200	µA
HV Setting	Via external potentiometer, minimum resistance 10 kΩ or via external voltage source 0/2.5V ±0.5% at full scale, and input impedance > 1 MΩ				-
Load Voltage Regulation	±0.01% of full output voltage for no load to full load				-
Line Voltage Regulation	±0.01% of full output voltage over specified input voltage range				-
Residual Ripple	< 0.01% pk to pk at full output voltage and current				-
Temperature Coefficient	< 50				PPM/°C
Output HV Monitoring	0/2.5 V signal				-
	Accuracy: ±0.2% F.S.				
	Output impedance: 1 kΩ				
Output Reference Voltage	2.5 V ±0.5%, TC: 50 ppm/°C, max output current: 1 mA				-
HV Power ON/OFF	ON: 0 V, connected to ground				-
	OFF: not connected				
	Open collector compatible				
Operating Temperature	-10 to +65, full load, max Eout, case temp.				°C
Storage Temperature	-40 to +70				°C
Safeguards	Output current internally limited				-
	Soft start feature: the start is guaranteed with no overshoot				

MECHANICAL SPECIFICATIONS



Drawing views: third angle projections.

Dimensions	
Pin Length	> 2 mm (0.078"), spacing 2.54 mm (0.1")
Optional Lead	Coaxial cable (RG178), diameter 2 mm (0.079"), length 500 mm (19.685")

Construction	
Casing	Steel, tin-plated, thickness 0.5 mm (0.02")
Insulation	Fully potted in RTV
Pin Length	> 2 mm (0.078"), spacing 2.54 mm (0.1")
Optional Lead	Coaxial cable (RG178), diameter 2 mm (0.079"), length 500 mm (19.685")

Volumes and Weights		
	cc^3	in^3
Volume	5.750	0351 in^3
	g	oz
Weight	13	0.459 oz

INTERFACE

Connections	
Pin	**Function**
1	Positive Power Input
2	Power Ground
3	Remote Adjust Input
4	+2.5 VDC Reference Output
5	Enable/Disable
6	Eout Monitor
7	HV Output

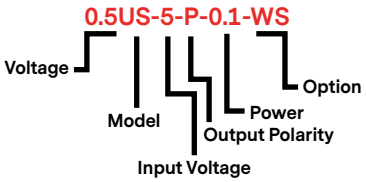
Mounting tabs must be connected to ground.

ORDERING INFORMATION

Type	0 to 200 VDC Output	0.2US
	0 to 300 VDC Output	0.3US
	0 to 400 VDC Output	0.4US
	0 to 500 VDC Output	0.5US
Input	5 VDC Nominal	5
	12 VDC Nominal	12
Power	W Output	0.1
Case	Steel, Tin-plated Case	(Standard)
Polarity	Positive Output	-P
	Negative Output	-N
Option	Output Voltage Lead Wire	-WS

Popular accessories ordered with this product include the PCB-CONN-US.

The US 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

For international contact information, visit advancedenergy.com.

uv-ca@aei.com
+1.970.221.0108

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