

# ULTRAVOLT US SERIES

## MICRO-SIZED HIGH VOLTAGE POWER SUPPLIES

Measuring only 5.75 cc (0.35 in<sup>3</sup>), 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

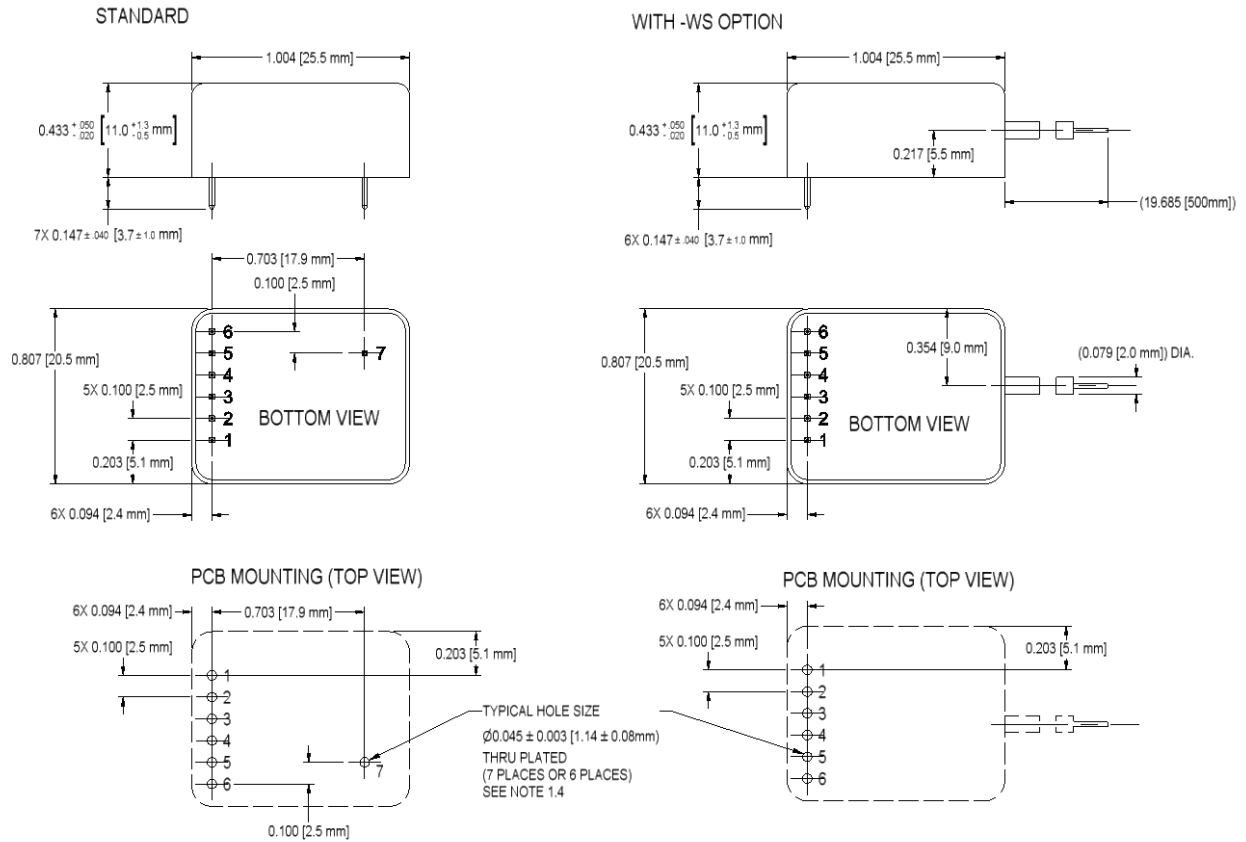
### TYPICAL APPLICATIONS

- 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

**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				
	<table border="1"> <tr> <td>&lt; 65 (200 Vout)</td> <td>&lt; 60 (300 Vout)</td> <td>&lt; 55 (400 Vout)</td> <td>&lt; 50 (500 Vout)</td> </tr> </table>	< 65 (200 Vout)	< 60 (300 Vout)	< 55 (400 Vout)	< 50 (500 Vout)	mA
< 65 (200 Vout)	< 60 (300 Vout)	< 55 (400 Vout)	< 50 (500 Vout)			
Polarity	Fixed positive or negative	-				
Output Voltage	<table border="1"> <tr> <td>0 to 200</td> <td>0 to 300</td> <td>0 to 400</td> <td>0 to 500</td> </tr> </table>	0 to 200	0 to 300	0 to 400	0 to 500	VDC
0 to 200	0 to 300	0 to 400	0 to 500			
Output Current	<table border="1"> <tr> <td>500</td> <td>330</td> <td>250</td> <td>200</td> </tr> </table>	500	330	250	200	µA
500	330	250	200			
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")

Volumes and Weights		
	cc <sup>3</sup>	in <sup>3</sup>
Volume	5.750	0351 in <sup>3</sup>
	g	oz
Weight	13	0.459 oz

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")

**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.

