



**ULTRAVOLT® US SERIES**  
MICRO-SIZED HIGH VOLTAGE POWER SUPPLIES





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# **Single-output** micro-sized HV modules

Measuring only 5.75 cc (0.35 in<sup>3</sup>), the highly compact, micro-sized 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.

## Features

- › 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





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

### STANDARD



### WITH -WS OPTION



### PCB MOUNTING (TOP VIEW)



### PCB MOUNTING (TOP VIEW)



Note: Drawing views: third angle projections.

## PHYSICAL SPECIFICATIONS

<b>Construction</b>	Steel, tin-plated, thickness 0.5 mm (0.02")
	Insulation: fully potted in RTV
<b>Volume</b>	5.750 cc (0.351 in <sup>3</sup> )
<b>Weight</b>	13 g (0.459 oz)
<b>Pin Length</b>	> 2 mm (0.078"), spacing 2.54 mm (0.1")
<b>Optional Lead</b>	Coaxial cable (RG178), diameter 2 mm (0.079"), length 500 mm (19.685")

## 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

<b>Type</b>	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
<b>Input</b>	5 VDC Nominal	5
	12 VDC Nominal	12
<b>Power</b>	W Output	0.1
<b>Case</b>	Steel, Tin-plated Case	(Standard)
<b>Polarity</b>	Positive Output	-P
	Negative Output	-N
<b>Option</b>	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.

Example: **0.5US5-PO.1-WS**



For international contact information, visit [advanced-energy.com](http://advanced-energy.com).