



ULTRAVOLT® US SERIES
MICRO-SIZED HIGH VOLTAGE POWER SUPPLIES





Single-output micro-sized HV modules

Measuring only 5.75 cc (0.35 in³), 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 |
|---------------------------------|--|-------------------|
| 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 | μ A |
| HV Setting | Via external potentiometer, minimum resistance 10 k Ω or via external voltage source 0/2.5V $\pm 0.5\%$ at full scale, and input impedance > 1 M Ω | - |
| Load Voltage Regulation | $\pm 0.01\%$ of full output voltage for no load to full load | - |
| Line Voltage Regulation | $\pm 0.01\%$ 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/ $^{\circ}$ C |
| Output HV Monitoring | 0/2.5 V signal Accuracy: $\pm 0.2\%$ F.S. Output impedance: 1 k Ω | - |
| Output Reference Voltage | 2.5 V $\pm 0.5\%$, TC: 50 ppm/ $^{\circ}$ 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. | $^{\circ}$ C |
| Storage Temperature | -40 to +70 | $^{\circ}$ C |
| Safeguards | 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

Construction

Steel, tin-plated, thickness 0.5 mm (0.02")

Insulation: fully potted in RTV

Volume

5.750 cc (0.351 in³)

Weight

13 g (0.459 oz)

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")

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.

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



For international contact information, visit advanced-energy.com.