

# ULTRAVOLT XS SERIES

## EXTRA-SMALL HIGH VOLTAGE BIASING SUPPLIES



The UltraVolt® XS series of extra-small high voltage power supplies is the smallest regulated DC-to-DC high voltage power supply for applications that require a bias voltage ranging from 0 to 100 V. Measuring only 1.3 cc (0.08 in<sup>3</sup>), these modules are ideal for use in size-critical applications.

### PRODUCT HIGHLIGHTS

- Extra-small size: 1.3 cc
- Lightweight: 5 g
- PCB flat mounting: 11 mm height
- Output from 0 to 100 V
- 100 mW output power
- Low ripple (< 50 mV peak to peak)
- Tight line/load regulation < ±0.01%
- Low temperature coefficient < ±50 ppm per °C
- Programmable HV output ±2.0% F.S.
- Output current limit protection
- 5 or 9 VDC input
- Metal case for low radiated noise

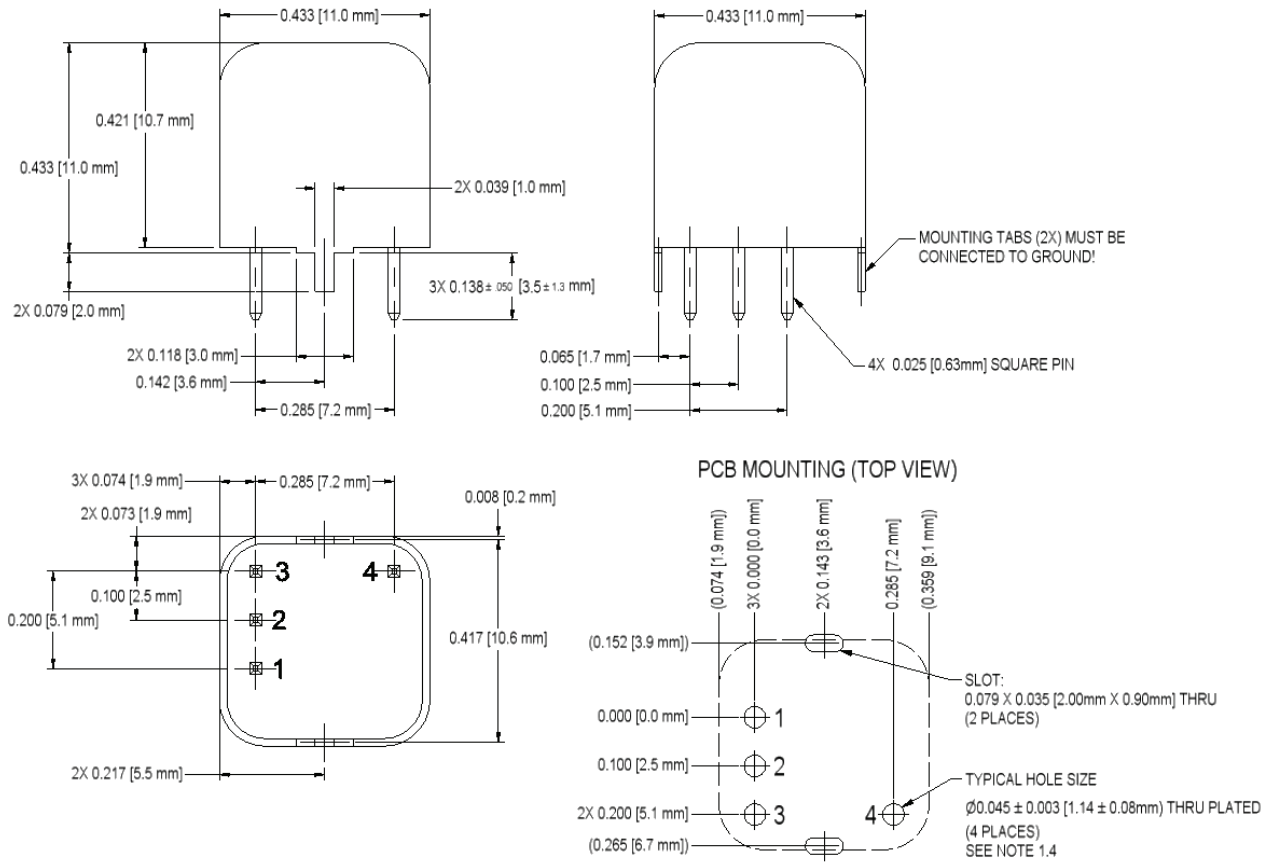
### TYPICAL APPLICATIONS

- Small, lightweight, portable devices
- Thin-film bias
- Avalanche photo diodes (APD)
- Silicon photomultipliers (SiPM)
- Multi-pixel photon counters (MPPC)
- Ultrasonic transducers
- Small PZT drivers
- ATE leakage testing
- Bias supplies

**ELECTRICAL SPECIFICATIONS**

Parameter	Specifications	Units
Input Voltage Vin (Pins 1 and 2)	5 VDC ±0.5 (recommended) max: 12 VDC (reverse: -0.2 V)	VDC
Input Current	For 0 V output voltage: < 1.6	mA
	For 100 V, no load: < 3	
	At full output voltage, full load: < 50	
HV Output Vout (Pin 4)	0 to 100 programmable	VDC
Output Power	0 to 100	mW
Polarity	Fixed positive or negative	-
HV Setting (Pin 3)	Via external voltage source 0/2.5 V	-
	Accuracy: ±2% at full scale	
Max Output Current Iout	1 nominal	mA
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	< 50 mV pk to pk — ripple can be reduced to < 10 mV by adding an external 100 nF small CMS capacitor	-
Temperature Coefficient	< 50	PPM/°C
Output HV Monitoring	N/A	-
Output Reference Voltage	N/A	-
HV Power ON/OFF	N/A	-
Operating Temperature	-10 to +65, full load, max Eout, case temp.	°C
Storage Temperature	-10 to +70	°C
Safeguards	Output current internally limited	-
	Soft start feature: low overshoot	
Shielding	Ground return is to metal enclosure	-

## MECHANICAL SPECIFICATIONS



Drawing views: third angle projections.

Construction	
Casing	Steel, tin-plated, thickness 0.5 mm (0.02")
Insulation	Fully potted in RTV
Pins	
Gold-plated	0.63 mm (0.025") square
Length	> 2 mm (0.079")
Spacing	2.54 mm (0.1")
Volumes and Weights	
Volume	1.331 cc (0.081 in <sup>3</sup> )
Weight	5 g (0.176 oz)

## INTERFACE

Connections	
Pin	Function
1	Positive Power Input
2	Ground Return
3	Remote Adjust Input
4	HV Output

Mounting tabs must be connected to ground.

**ORDERING INFORMATION**

Type	0 to 100 VDC Output	0.1XS
Input	5 VDC Nominal	5
Power	W Output	0.1
Case	Steel, Tin-plated	(Standard)
Polarity	Positive Output	-P
	Negative Output	-N

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

The XS series is not available in all territories. Please contact Advanced Energy for details concerning sales in your area.

