



**ULTRAVOLT® XS SERIES**  
EXTRA-SMALL HIGH VOLTAGE BIASING SUPPLIES





# Single-output micro-sized HV modules

The 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.

## Features

- › 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

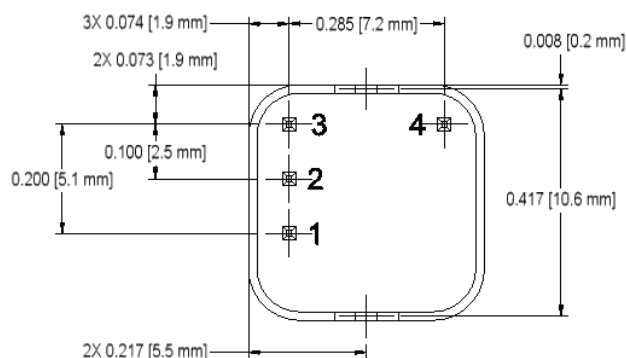
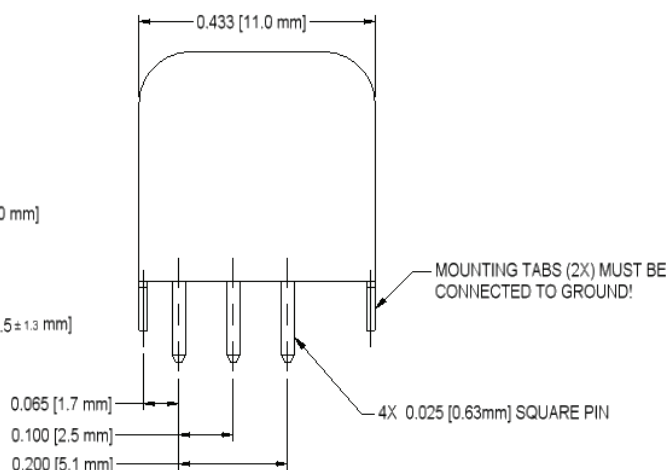
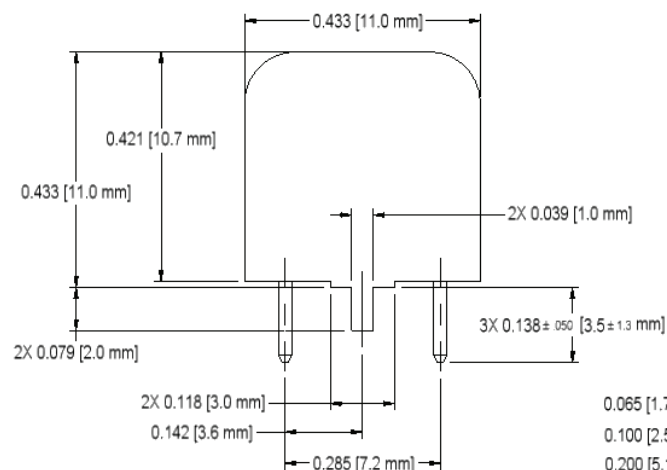
## Typical Applications

- › 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

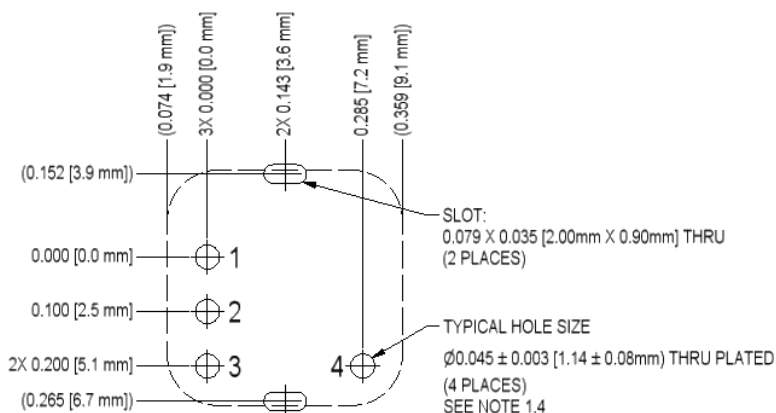




PARAMETER	SPECIFICATIONS	UNITS
Input Voltage $V_{in}$ (Pins 1 and 2)	5 VDC $\pm 0.5$ (recommended) max: 12 VDC (reverse: -0.2 V)	VDC
Input Current	For 0 V output voltage: < 1.6	mA
	For 100 V, no load: < 3	
	At full output voltage, full load: < 50	
HV Output $V_{out}$ (Pin 4)	0 to 100 programmable	VDC
Output Power	0 to 100	mW
Polarity	Fixed positive or negative	-
HV Setting (Pin 3)	Via external voltage source 0/2.5 V	-
	Accuracy: $\pm 2\%$ at full scale	
Max Output Current $I_{out}$	1 nominal	mA
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	< 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/ $^{\circ}\text{C}$
Output HV Monitoring	N/A	-
Output Reference Voltage	N/A	-
HV Power ON/OFF	N/A	-
Operating Temperature	-10 to +65, full load, max $E_{out}$ , case temp.	$^{\circ}\text{C}$
Storage Temperature	-10 to +70	$^{\circ}\text{C}$
Safeguards	Output current internally limited	-
	Soft start feature: low overshoot	
Shielding	Ground return is to metal enclosure	-



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
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<b>Volume</b>	1.331 cc (0.081 in <sup>3</sup> )
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<b>Weight</b>	5 g (0.176 oz)
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### Pins

<b>Gold-plated</b>	0.63 mm (0.025") square
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<b>Length</b>	> 2 mm (0.079")
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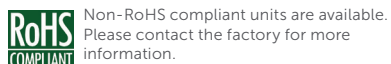
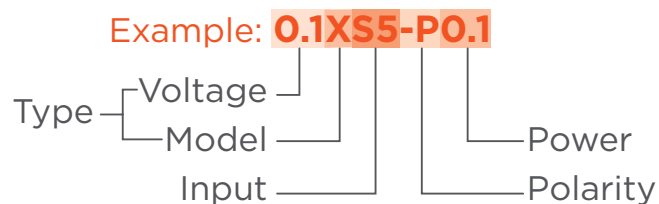
<b>Spacing</b>	2.54 mm (0.1")
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CONNECTIONS	
Pin	Function
1	POSITIVE POWER INPUT
2	GROUND RETURN
3	REMOTE ADJUST INPUT
4	HV OUTPUT

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.



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

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