

“US” Series

PCB-mount microsize, regulated, high-voltage DC-DC converter



MAKING HIGH VOLTAGE
EASIER!®



Vin : 5Vdc, 12Vdc or 15Vdc
Vout : 0 to 200V, 300V, 400V or 500V
Pout : 100mW

At only 0.35in³ [5.75cc], the highly-compact microsize “US” Series is specially designed to meet the needs of professionals working to develop products for commercial, military, industrial and research applications. These units enable customers in domains including laser range finders, fiber-optic telecommunications and particle physics to achieve greater quantum efficiency and reduced total leakage current.



- miniature and lightweight
- PCB flat mounting
- inhibition mode
- option: flying wire for HV output
- tight line/load regulation
- output current limit protection
- temperature coefficient 50ppm/°C
- low ripple (<20mV p. to p.)
- low noise due to metal shielding
- 2.5V reference

Parameters	Specifications
Input voltage Vin (pins 1 & 2)	5Vdc ± 0.5Vdc or 12 to 15Vdc ± 0.5Vdc according to type
Input current	inhibition mode <5mA, at full output voltage, full load : <65mA for the 200V model <60mA for the 300V model <55mA for the 400V model <50mA for the 500V model
HV output Vout (pin 7 or lead - optional)	programmable nominal voltage, refer to the Selection Guide for voltage ranges
Polarity	fixed positive or negative
HV setting (pins 3)	via external potentiometer, minimum resistance 10kΩ or via external voltage source 0/2.5V ±0.5% at full scale, and input impedance >1MΩ
Max. output current Iout	refer to the Selection Guide
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	less than 20mV peak-to-peak at full output voltage and current less than 5mV peak-to-peak at 200V and 200μA
Temperature coefficient	<50ppm/°C
Output HV monitoring (pin 2)	0/2.5V signal accuracy : ±0.2% output impedance : 1kΩ
Output reference voltage (pin 4 - optional)	2.5V ±0.5%, TC :50ppm/°C, max. output current : 1mA
HV power ON/OFF (pin 5)	ON : 0 volt, connected to ground OFF : not connected open collector compatible
Operating temperature	-10°C to +50°C
Storage temperature	-40°C to +70°C
Safeguards	▪ output current internally limited ▪ soft start feature : start is guaranteed without overshoot

Typical Applications
<ul style="list-style-type: none"> ▪ Bias Supplies ▪ Avalanche Photo Diodes (APD) ▪ Silicon Photomultipliers (SiPM)

Package Configuration	
Case material	tin steel plate thickness 0.5mm
Case dimensions LxHxW	25.5 x 11.0 x 20.5 mm
Pins	0.63 x 0.63mm square pins, length : >2mm spacing : 2.54mm
Weight	13g
Lead (optional)	coaxial cable (RG178), diameter = 2mm, length = 500mm
Insulation	fully potted in an epoxy resin

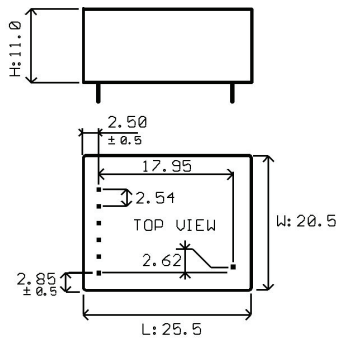
Pin Connections	
Line input :	1.Vin 2.GND
HV setting :	3.control input 4.output reference
Inhibition input :	5. ON/OFF
HV monitoring :	6.Vout monitoring
HV output :	7.Vout

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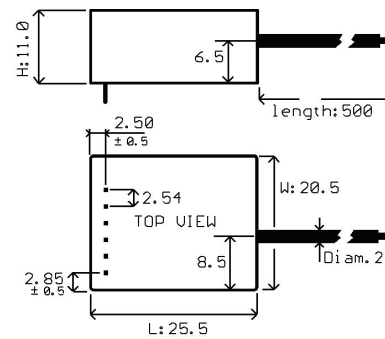
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Mechanical Dimensions

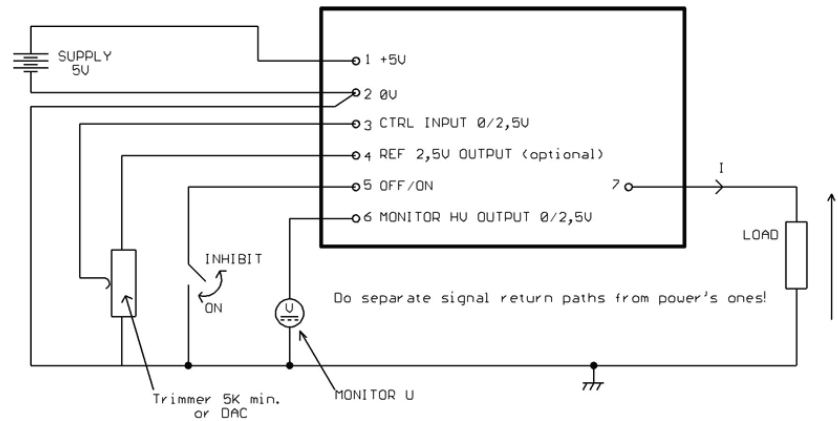


seven pins: square 0.63x0.63 mm



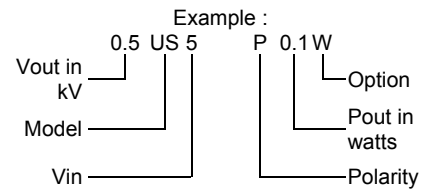
six pins: square 0.63x0.63 mm
 option: flying wire for HV output

Functional Diagram



Ordering Information

Model	name of the series	US
Vin	4.5Vdc to 5.5Vdc	5
	11.5Vdc to 15.5Vdc	12
Polarity	positive output voltage	-P
	negative output voltage	-N
Vout	output voltage	see Ordering Code
Pout	output power	see Ordering Code
Option	output voltage lead wire	-W



+500V@100mW psu under 5Vdc with the flying wire for the HV output

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“US” Series Selection Guide

Vout	Iout / Pout	Vin	Polarity	Model Number
500V	200 μ A / 100mW	5V	+	0.5US5-P0.1
			-	0.5US5-N0.1
		12V-15V	+	0.5US12-P0.1
			-	0.5US12-N0.1
400V	250 μ A / 100mW	5V	+	0.4US5-P0.1
			-	0.4US5-N0.1
		12V-15V	+	0.4US12-P0.1
			-	0.4US12-N0.1
300V	330 μ A / 100mW	5V	+	0.3US5-P0.1
			-	0.3US5-N0.1
		12V-15V	+	0.3US12-P0.1
			-	0.3US12-N0.1
200V	500 μ A / 100mW	5V	+	0.2US5-P0.1
			-	0.2US5-N0.1
		12V-15V	+	0.2US12-P0.1
			-	0.2US12-N0.1