

PRV Series - 1K to 4K Datasheet - Preliminary

Up to 6 Watt, PCB mount compact, isolated, proportional, high voltage DC-DC converter



- 3 standard products with proportional control
- ◇ Output configuration: single or dual.
- ◇ Input voltage: 2.5Vdc to 15Vdc
- ◇ Output voltage depending on the version: 0.16 to 1kVdc, 0.33 to 2kVdc and 0.66 to 4kVdc
- ◇ Output power: 6W at maximum output voltage
- ◇ Reference: see chart for complete reference



General Description

◇ Proportional HV converter ranging from 160V to 4,000 VDC with single or dual polarity.

Miniature and lightweight	Single or Dual Output (center tap). Customizable polarity.	Low noise due to metal shielding and quasi-sinus oscillator.
Upt to 500Vdc isolation (on pin #5 or #6 or #7)	High efficiency.	Over-voltage and over temperature protection with automatic shutdown.
PCB flat mounting	Logical ON-OFF input	Logical status output (thermal and over input voltage protections)

Parameters	Specifications																
Input voltage V_{in} (pins 1 & 3)	<ul style="list-style-type: none"> • 2.5 to 15Vdc (absolute maximum: 30Vdc, see protection section for details) • Reverse: -0.2Vdc max. • Turn on voltage: 2.5Vdc 																
Efficiency	>75% at full load (input current in off state <4mA)																
HV output V_{out} (pin 5, 6 & 7)	The output voltage is proportional to the input voltage																
Polarity	Customizable (see diagram below for details)																
Nominal output current & residual ripple	<table border="1"> <thead> <tr> <th>Version</th> <th>Output voltage</th> <th>Output current</th> <th>Ripple</th> </tr> </thead> <tbody> <tr> <td>1K Series</td> <td>1 kV (2x0.5kV or 1x1kV)</td> <td>6 mA</td> <td>TBC</td> </tr> <tr> <td>2k Series</td> <td>2 kV (1x2kV or 2x1kV)</td> <td>3.0 mA</td> <td>TBC</td> </tr> <tr> <td>4k Series</td> <td>4 kV (1x4kV or 2x2kV)</td> <td>1.5 mA</td> <td>1%</td> </tr> </tbody> </table>	Version	Output voltage	Output current	Ripple	1K Series	1 kV (2x0.5kV or 1x1kV)	6 mA	TBC	2k Series	2 kV (1x2kV or 2x1kV)	3.0 mA	TBC	4k Series	4 kV (1x4kV or 2x2kV)	1.5 mA	1%
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4k Series	4 kV (1x4kV or 2x2kV)	1.5 mA	1%														
Load voltage regulation	+40% for full load to no load. (see diagram below)																
Temperature coefficient	<300 ppm/°C																
HV power ON / OFF (pin 4)	Connect Pin 4 to V_{in} Return (pin 1) to activate the module. Compatible with open collector output.																



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Parameters	Specifications
Operating temperature	-10°C to +70°C (case)
Storage temperature	-10°C to +70°C
Safeguards and status (pin 2)	<ul style="list-style-type: none"> • Over voltage at the input is detected above 15V and the module automatically turns off • Thermal detection automatically turns off the module above 70°C • Status is a logical 5V output which turns high when over voltage or thermal fault is detected.
Shielding	The metal case is internally grounded to the Vin Return pin 1.

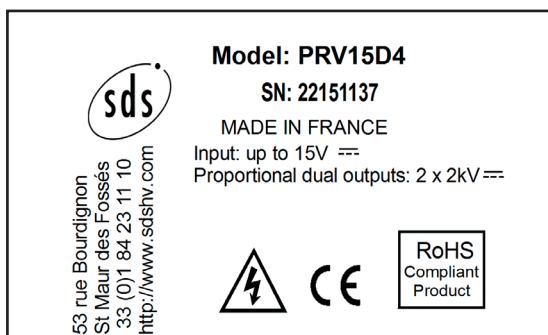
Main Applications

- DC to HVDC bias supplies
- Capacitor charging
- APD/PMT/GM Tubes Power Supplies
- Ink-jet printing
- Electrostatic detector
- Deflection plates
- Electron Beam
- Focusing optics

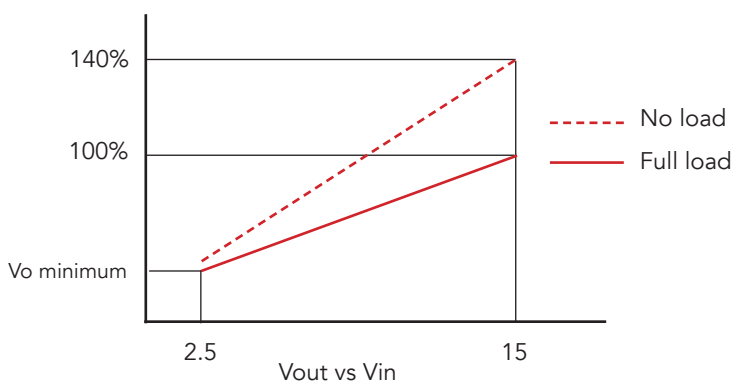
Package Configuration

Case material	Tin steel plate Thickness 0.5 mm
Case dimensions LxHxW	47 x 28 x 12.5 mm
Pins	0.63 x 0.63 mm square pins Length : > 2 mm
Weight	<40 g
Insulation	Fully potted in an epoxy resin. UL certified

Marking



Load voltage regulation (typical)

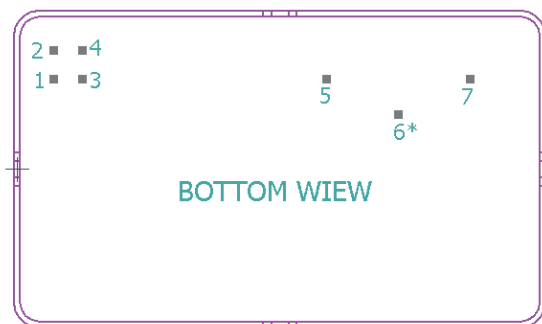


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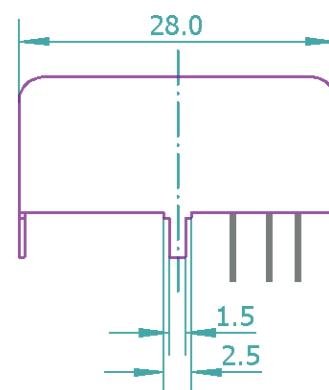
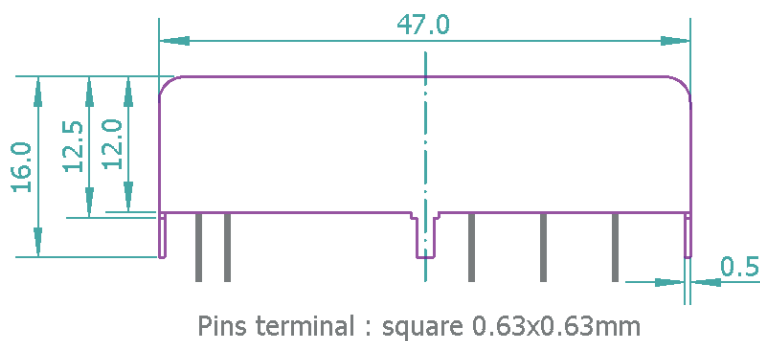
Up to 6 Watt, PCB mount compact, isolated, proportional, high voltage DC-DC converter

Mechanical dimensions

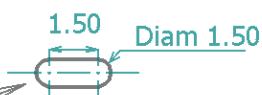
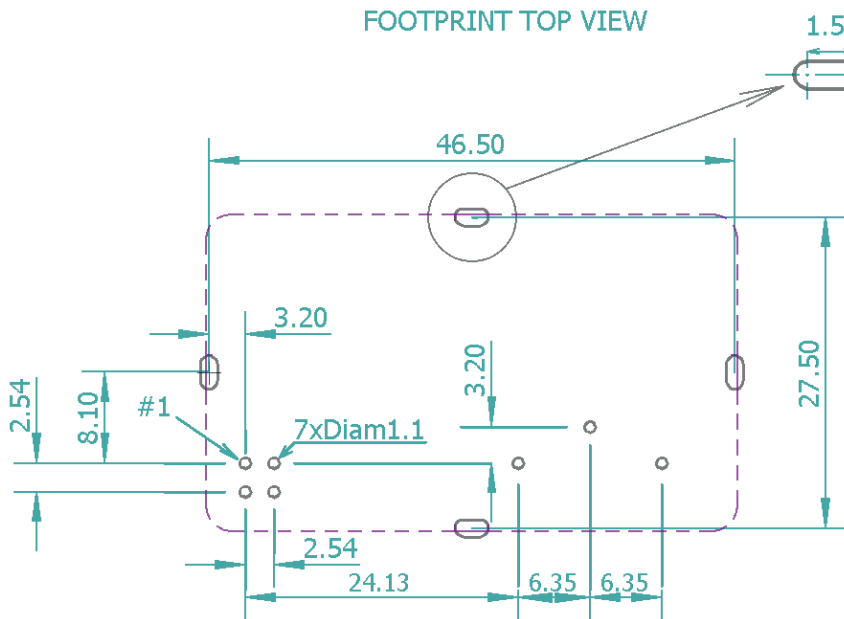
* Pin 6 is optional: only comes with dual output .



Pin #	FUNCTION
1	Vin RETURN
2	STATUS o/p
3	Vin
4	ENABLE i/p
5	HV-
6*	CENTER TAPE
7	HV+



FOOTPRINT TOP VIEW



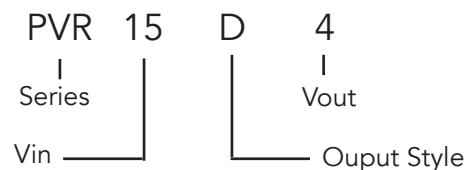
EUROPEAN PROJECTION
Dimensions are in mm.

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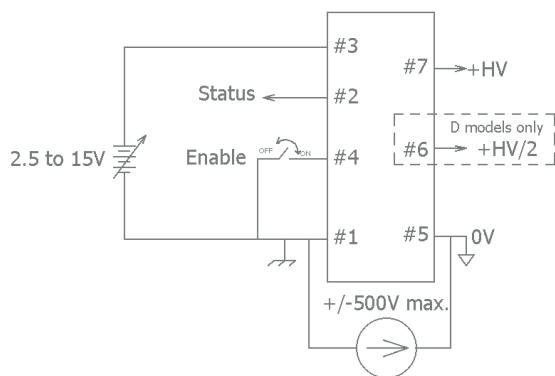
Up to 6 Watt, PCB mount compact, isolated, proportional, high voltage DC-DC converter

Ordering information

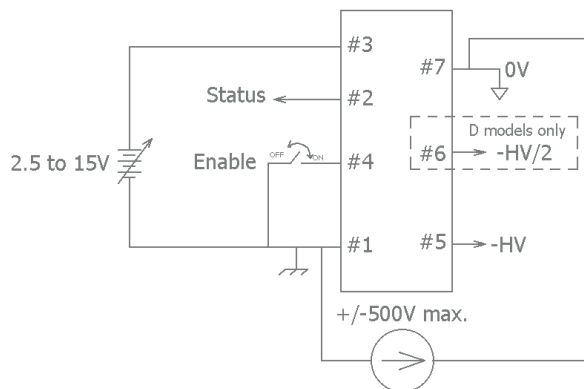
Model	Name of the series	PRV
Input Voltage	Nominal input voltage	15
Output style	Single output	S
	Dual output	D
Output voltage	1kV (1x1kV or 2x0.5kV)	1
	2kV (1x2kV or 2x1kV)	2
	4kV (1x4kV or 2x2kV)	4



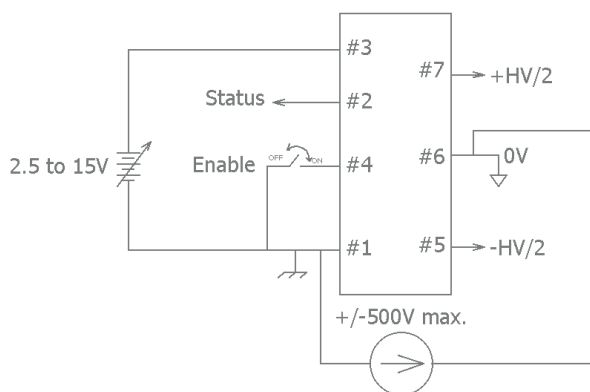
Functional diagram



Positive output



Negative output



Dual polarity output



This High Voltage power supply satisfies the requirements of EC Directives Safety.

Non contractual document.
 All specifications are subject to change without notice.

RevA 05/10

