

**200V – 2kV; 3W
REGULATED, PROGRAMMABLE, LOW RIPPLE
HIGH VOLTAGE POWER SUPPLIES**

▪ **FEATURES**

- Ultra Compact Package, PCB Mountable
- Very Low Ripple, High Stability
- Analog Programmable
- 6-sided Metal Shielding
- Remote ON, Voltage Monitor
- High Performance, Low Cost
- Made in Germany

▪ **APPLICATIONS**

- PMT/MCP Supply
- APD / Photodetector Bias
- Radiation Detectors, Sensor Supply
- Mass Spectrometry



The HM36 Series is a family of ultra compact high performance - high voltage DC to DC converters with 24V supply voltage and 3W output power. Designed for PMT applications these converters are equally suitable for other applications requiring low ripple, noise and high stability. They are encapsulated in a metal package providing 6-sided shielding.

These compact converters are ideal for applications requiring high power in a small package, high performance, low cost and ease of use.

The devices are available for 24V_{DC} input voltage. The output voltage is programmable via an analog voltage, such as the output from a DAC or by a potentiometer connected locally to the converter's reference voltage output (VREF). The output voltage is directly proportional to the programming voltage. It features excellent linearity.

The output can be enabled via the /ON input by means of a TTL level signal or just by an external contact (internal pull-up). A voltage monitor output is provided.

Load regulation is excellent and the output voltage is independent of the input supply voltage. The output is not isolated. High voltage return is internally connected to ground (GND). The output power rating is 3W at rated output voltage.

Output Voltage	Max. Output Current	Model		Ripple / Noise *3
		Positive Polarity Output	Negative Polarity Output	
0 – 200V	15mA	HM36-0.2P15-24	HM36-0.2N15-24	10mV _{PP}
0 – 500V	6.0mA	HM36-0.5P6-24	HM36-0.5N6-24	10mV _{PP}
0 – 1000V	3.0mA	HM36-1P3-24	HM36-1N3-24	15mV _{PP}
0 – 1500V	2.0mA	HM36-1.5P2-24	HM36-1.5N2-24	20mV _{PP}
0 – 2000V	1.5mA	HM36-2P1.5-24	HM36-2N1.5-24	30mV _{PP}

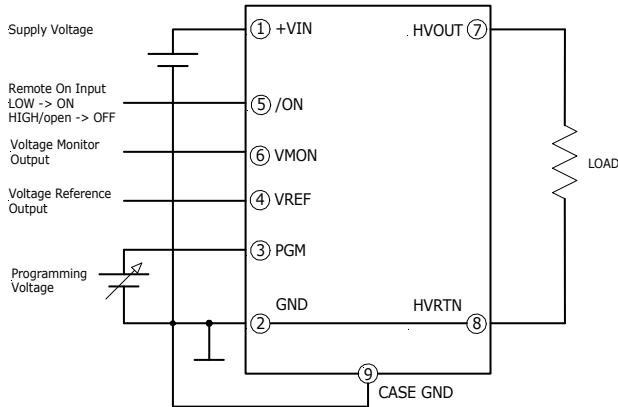
▪ **SPECIFICATIONS**

Input Supply Voltage (+V _{IN}):	+24V _{DC} ±10%		
Input Supply Current:	190mA typ. @ rated load *1 / 25mA typ. @ no load *2		
Programming Input (PGM):	0 to +5.00V results in 0 to full rated output; Input impedance: >30kΩ. The output voltage can be adjusted from 0 to 100%. Full specifications will be maintained from 10% to 100% output voltage.		
Output Voltage Tolerance:	< ±0.5% (actual V _{OUT} vs. rated V _{OUT} , V _{PGM} =5.00V) *1		
Load Regulation:	< 0.005% (10% load to rated load) *2		
Line Regulation:	< 0.001% (±1V input voltage change) *1		
Temperature Coefficient:	25ppm/K typ. (V _{OUT} vs. V _{PGM}) *1		
Voltage Reference (VREF):	5.00V ±1%, max. 2mA, 25ppm/K typ.		
Voltage Monitor (VMON):	0 to 5.00V ±0.5%, Output impedance: 10kΩ		
/ON Input:	ON: 0V – 0.8V; I _{ENABLE} = 0.1mA OFF: 2.4V – 5V or open internal Pull-up: 47kΩ		
Protection:	Arc, overload and continuous output short circuit; max. one arc per second		
Temperature Range:	Operating: -20°C to +55°C	Dimensions (LxWxH):	40.6 x 25.4 x 12.3mm ³
	Storage: -25°C to +85°C	Weight:	ca. 40g

Operating Conditions:
All voltages are referenced to GND.

*1 at $V_{IN}=24V$, full rated output voltage, rated load, 25°C, after 1h warm up
*2 at $V_{IN}=24V$, full rated output voltage, 25°C, after 1h warm up
*3 1Hz to 20MHz

CONNECTION DIAGRAM

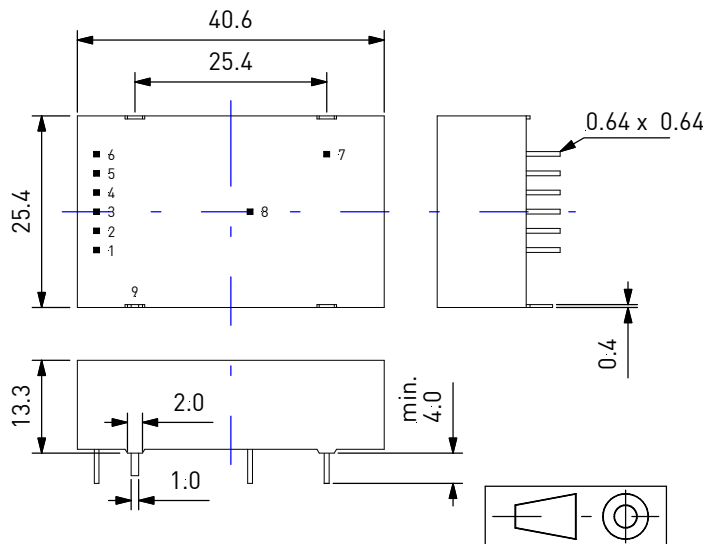


PIN FUNCTION DESCRIPTIONS

Pin No.	Designation	Function
1	+VIN	Input Supply Voltage
2	GND	Ground Reference
3	PGM	Programming Input
4	VREF	Reference Voltage Output
5	/ON	Remote On Input
6	VMON	Voltage Monitor Output
7	HVOUT	High Voltage Output
8	HVRTN	High Voltage Return
9	CASE GND	Case

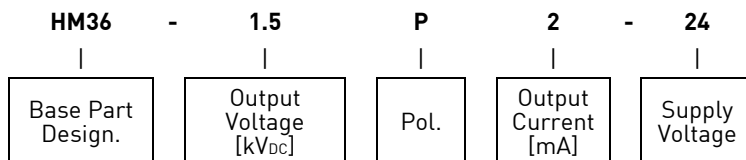
- CASE GND should always be connected to GND
- GND and HVRTN are internally connected

DIMENSIONS



All dimensions are in mm; drawings not to scale

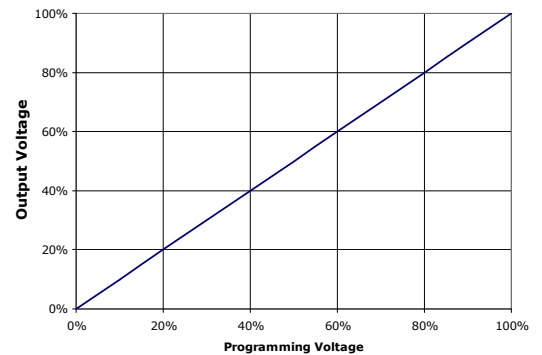
ORDERING INFORMATION



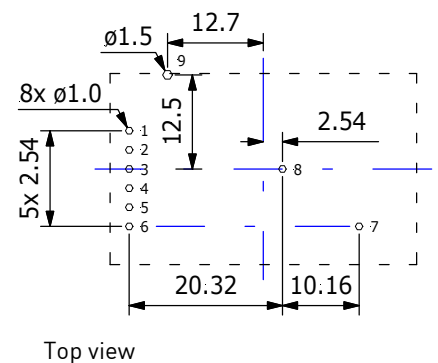
Example: HM36-1.5P2-24 (HM36 series, 1.5kV, positive, 2mA, 24V)

All listed models are RoHS2 compliant.

CONTROL CHARACTERISTICS



FOOTPRINT



The information given in this data sheet is technical data, not assured product characteristics. It has been carefully checked and is believed to be accurate; however, no responsibility is assumed for inaccuracies. The user has to ensure by adequate tests that the product is suitable for his application regarding safety and technical aspects. hivolt.de GmbH & Co. KG does not assume any liability arising out of the application or use of any product described.

Safety Advice Design, installation and inspection of machinery and devices carrying high voltage require accordingly trained and qualified personnel. Appropriate safety rules and directives must be complied with. Improper handling of high voltage can mean severe injuries or death and may cause serious collateral damage!