HMA Series

hivolt.de

100V – 1kV; 0.5W, 1W
REGULATED, PROGRAMMABLE
HIGH VOLTAGE POWER SUPPLIES

- **FEATURES**
  - High voltages up to 1kV
  - Positve or negative polarity
  - Internal reference voltage
  - Stable output voltage
  - Patented resonance converter technology
  - Low ripple and noise
  - Made in Germany

The HMA series is a line of small DC to HV converters providing 100V$_{DC}$ to 1000V$_{DC}$, positive or negative, at 0.5W or 1W output power. The output voltage control is achieved by means of a programming resistor or a control voltage. An output voltage monitor and an ON/OFF input are provided. The units are housed in a compact PCB mountable package. The metal box and a patented resonant converter principle guarantee very low EMI. Protected against overload and short circuit. RoHS compliant.

Output Voltage V$_{NOM}$	0.5W Models		1W Models		Ripple / Noise @f>10Hz typ.
	Max. Output Current I$_{NOM}$	Model	Max. Output Current I$_{NOM}$	Model	
0 – 100V	5mA	**HMA-0.1#5-5**	6mA	**HMA-0.1#6-12**	< 10mV$_{PP}$
0 – 200V	2.5mA	HMA-0.2#2.5-5	5mA	**HMA-0.2#5-12**	< 10mV$_{PP}$
0 – 400V	1.2mA	**HMA-0.4#1.2-5**	2.5mA	**HMA-0.4#2.5-12**	< 10mV$_{PP}$
0 – 600V	0.8mA	**HMA-0.6#0.8-5**	1.6mA	**HMA-0.6#1.6-12**	< 10mV$_{PP}$
0 – 800V	0.6mA	**HMA-0.8#0.6-5**	1.2mA	**HMA-0.8#1.2-12**	< 10mV$_{PP}$
0 – 1000V	0.5mA	**HMA-1#0.5-5**	1mA	**HMA-1#1-12**	< 10mV$_{PP}$

#: output polarity designators: '**P**' for positive / '**N**' for negative

- **SPECIFICATIONS**

Input Supply Voltage (+V$_{IN}$):	**-5**:	+5V$_{DC}$ ±10%	**-12**:	+11.5V$_{DC}$ to +15.5V$_{DC}$
Input Supply Current:	**-5**:	180mA max. *1	**-12**:	150mA max. *1

Programming Input (VSET):
1. External control voltage:
   -5: 0 to +2.5V **-12**: 0 to +5.0V
   results in 0 to full rated output ±1%;
   input impedance: 10kΩ to internal reference voltage (2.5V/5.0V);
   Since the output voltage is not internally limited, the control voltage must not exceed the values specified above!
2. External resistor R$_{SET}$ connected between VSET and GND:
   $R_{SET} = V_{OUT} * 10k\Omega / (|V_{NOM} - V_{OUT}|)$

Output Current Limit:	1.5 * I$_{NOM}$
Line Regulation:	< 1 * 10^{-3} * V$_{NOM}$ (ΔV$_{OUT}$ / ΔV$_{IN}$ min to max supply voltage)
Load Regulation:	< 2 * 10^{-3} * V$_{NOM}$ (ΔV$_{OUT}$ / ΔR$_{LOAD}$ no load to rated load)
Temperature Coefficient:	< 50ppm/K
Voltage Monitor (VMON):	**-5**: 0 to 2.5V **-12**: 0 to 5.0V
/ON Input:	ON: 0V or open; OFF (V$_{OUT}$ = 0): 2.5V – 5.5V
Protection:	overload and short circuit
Temperature Range:	Operating: 0°C to +40°C
	Storage: -20°C to +60°C
Dimensions (LxWxH):	39.6 x 15.7 x 11mm³
Weight:	ca. 13g

Operating Conditions:
All voltages are referenced to GND.

*1 at full rated output voltage, rated load, 25°C, after 1h warm up

HMA Series

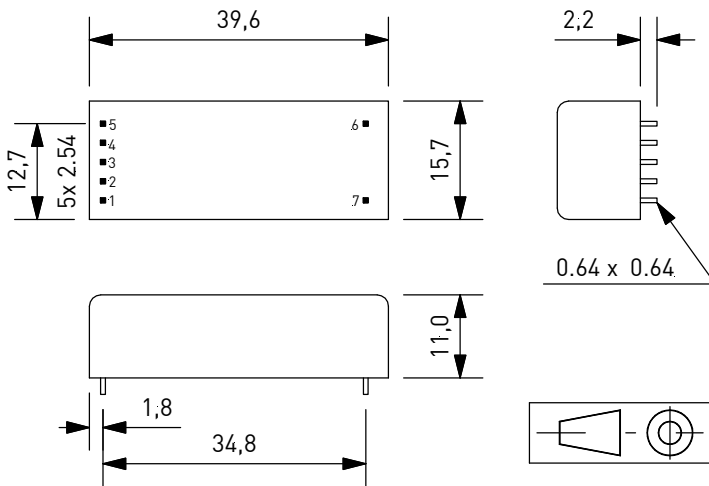## ▪ CONNECTION DIAGRAM
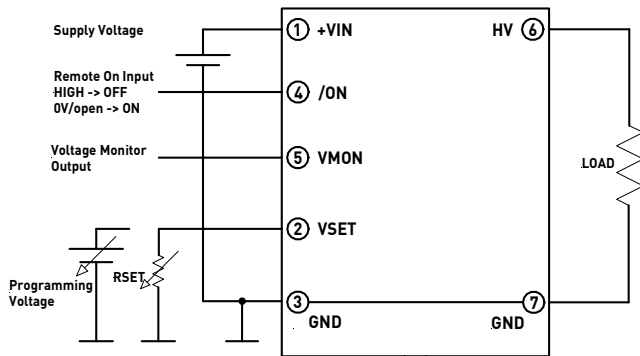
▪ PIN FUNCTION DESCRIPTIONS

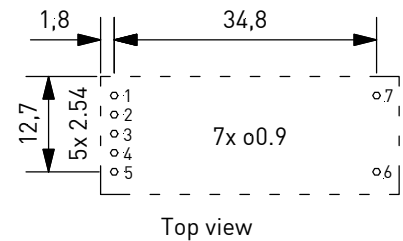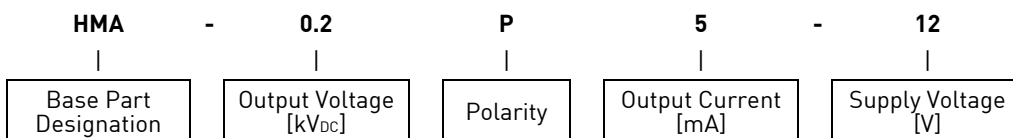| Pin No.	Designation	Function
1	+VIN	Input Supply Voltage
2	VSET	Programming Input
3	GND	Ground Reference
4	/ON	Remote On Input
5	VMON	Voltage Monitor Output
6	HV	High Voltage Output
7	GND	High Voltage Return

- Pins 3 and 7 are internally connected to the case.

▪ DIMENSIONS

All dimensions are in mm; drawings not to scale

▪ FOOTPRINT

Top view

▪ ORDERING INFORMATION

HMA	-	0.2	P	5	-	12

Base Part Designation	Output Voltage [kV$_{DC}$]	Polarity	Output Current [mA]	Supply Voltage [V]

Example: HMA-0.2P5-12 (HMA series, 0.2kV, positive, 5mA, 12V supply)

Disclaimer

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.
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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!