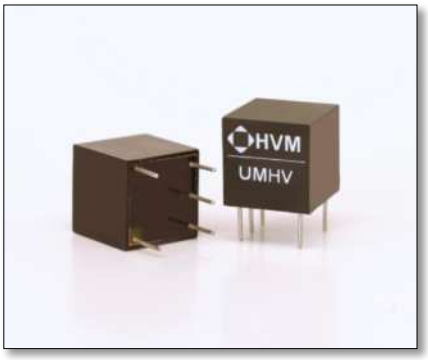
HVM TECHNOLOGY
Innovative High Voltage Products



UMHV Series

Ultra-Miniature High Voltage DC to Dc Converter

Ultra-Miniature Case Size (0.5” x 0.5” x 0.5”)
High Impedance Programming Input (10kΩ)
Extremely Low Quiescent Current (5mA typical)
No External Components Required
PCB Mountable
Low Ripple and EMI/RFI
High Input/Output Isolation
Wide Operating Temp Range (-55°C to +70°C)
Available in positive or negative outputs

RoHS

Description

The UMHV Series is a family of ultra-miniature single-output DC to DC converters supplying up to 5kV in 0.125 cubic inches (0.5” x 0.5” x 0.5”). These ultra-compact converters are ideal for applications requiring small size and ease of use. A high impedance programming input makes it very easy to use, eliminating the need for a low impedance adjustable power source voltage.

HVM’s proprietary resonant converter design minimizes quiescent current and operating noise while delivering maximum performance and reliability. A special feature of this power supply is its extremely low input current, typically 1/10th of that of similar devices on the market, making it ideal for battery powered applications.

The devices operate directly from 5VDC ± 0.5VDC input. Output voltage is independent of input power voltage and is proportional to the programming voltage (0 to IN+ produces 0 to full scale output) and features excellent linearity. The output power rating is 0.5W and the input to output isolation is ± 500V. The UMHV Series is very stable over a wide operating temperature range.

Available with alternate output voltages, consult sales for additional information.

Mechanical Characteristics

- **Size:** 0.5” x 0.5” x 0.5”
- **Weight:** 4.1 grams typical
- **Packaging:** Encapsulated in high performance epoxy
- **Case Material:** Thermoset plastic (Diallyl Phthalate)

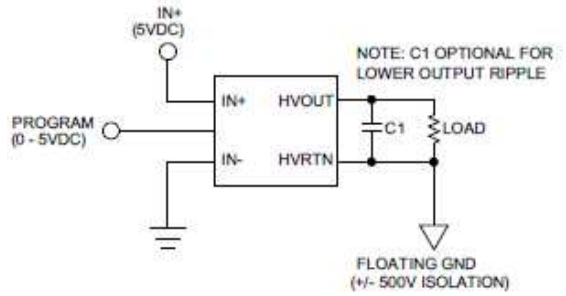
Environmental Characteristics

- **Operating Temp Range:** -55°C to +70°C
- **Storage Temp Range:** -55°C to +85°C

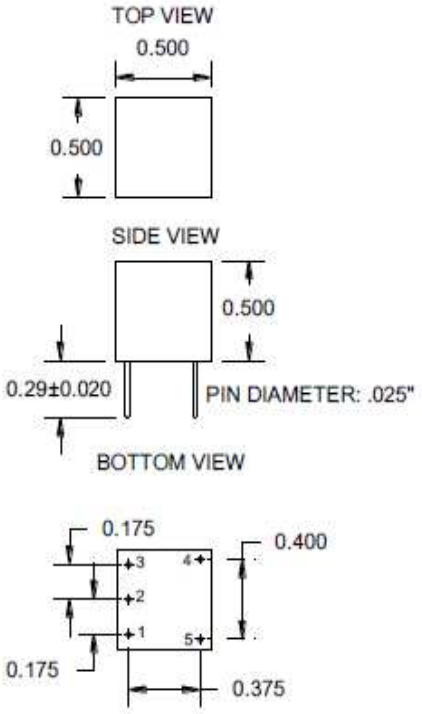
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www.hvmtech.com

APPLICATION SCHEMATIC



MECHANICAL



ELECTRICAL CHARACTERISTICS

Input Power Voltage (V+):	5V or 12V ± 10%
Programming Voltage:	0 to 5V IN+ results in 0 to rated output voltage
Programming Input Impedance:	10kΩ
Output Tolerance at No Load:	± 5%
Input-Output Isolation:	± 500Vdc
Load Regulation:	20% (drop from no load to full load)
Output Ripple:	<2% typical at full load; Note: additional external capacitance can be added to reduce ripple
Oscillator Frequency:	45 kHz – 80 kHz
Efficiency:	55% typical at full load

PIN#	FUNCTION
1	Program
2	IN -
3	IN +
4	HVOUT
5	HVRTN

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Model Selection Guide

Model	Input Voltage	Output Voltage	MAX Output Current	Input Current	
				NO Load	MAX Load
UMHV0505	5V	0 to ±500V	1mA	<10mA	<175mA
UMHV1205	12V	0 to ±500V	1mA	<10mA	<100mA
UMHV0510	5V	0 to +1kV	500µA	<10mA	<175mA
UMHV0510N	5V	0 to -1kV	500µA	<10mA	<175mA
UMHV1210	12V	0 to +1kV	500µA	<10mA	<100mA
UMHV1210N	12V	0 to -1kV	500µA	<10mA	<100mA
UMHV0520	5V	0 to +2kV	250µA	<10mA	<175mA
UMHV0520N	5V	0 to -2kV	250µA	<10mA	<175mA
UMHV1220	12V	0 to +2kV	250µA	<10mA	<100mA
UMHV1220N	12V	0 to -2kV	250µA	<10mA	<100mA
UMHV0530	5V	0 to +3kV	167µA	<15mA	<175mA
UMHV0530N	5V	0 to -3kV	167µA	<15mA	<175mA
UMHV1230	12V	0 to +3kV	167µA	<15mA	<100mA
UMHV1230N	12V	0 to -3kV	167µA	<15mA	<100mA
UMHV0540	5V	0 to +4kV	125µA	<15mA	<175mA
UMHV0540N	5V	0 to -4kV	125µA	<15mA	<175mA
UMHV1240	12V	0 to +4kV	125µA	<15mA	<100mA
UMHV1240N	12V	0 to -4kV	125µA	<15mA	<100mA
UMHV0550	5V	0 to +5kV	100µA	<15mA	<175mA
UMHV0550N	5V	0 to -5kV	100µA	<15mA	<175mA
UMHV1250	12V	0 to +5kV	100µA	<15mA	<100mA
UMHV1250N	12V	0 to -5kV	100µA	<15mA	<100mA