

ECHVR Series

Low Cost Regulated HV DC to DC Converter

- Miniature Case Size (1.8" L x 1.0" W x 0.40" H)**
- in a Low Profile PCB Mount Configuration**
- High Impedance Programming Input**
- Voltage Monitor Output**
- Low Quiescent Input Current**
- 5V or 12V Input, Models up to 10kV @ 1W**
- Excellent Output Regulation and Stability**
- Adjustable from 3% to Full Output**
- Low Ripple and EMI/RFI**
- Wide Operating Temp Range**

RoHS



Mechanical Characteristics

- **Size:** 1.8" L x 1.0" W x 0.40" H
- **Weight:** 15 grams typical
- **Packaging:** Encapsulated in high performance epoxy

Environmental Characteristics

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

Description

The ECHVR Series is an economical and versatile regulated high voltage DC to DC converter perfectly suited for small, portable, high performance equipment requiring high voltage biasing. Designed for affordability and reliability, the ECHVR Series is manufactured using all surface mount construction and tested using state-of-the-art automatic test equipment.

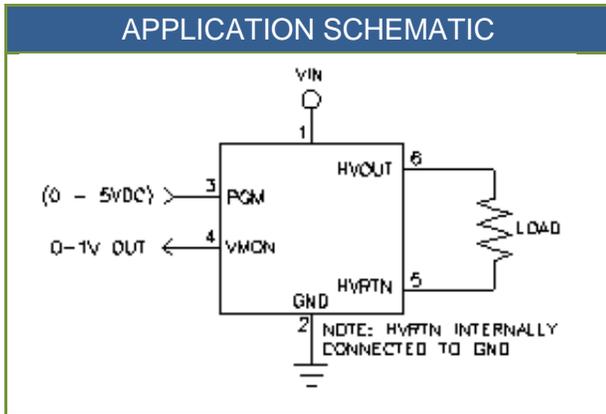
The ECHVR Series includes a range of models with output voltages up to 10kV. Fully encapsulated in a compact (1.8" L x 1.0" W x 0.40" H) package, the ECHVR Series has easy-to-use features that enable the designer to quickly integrate high voltage into any design. A high impedance programming input makes the ECHVR Series very easy to use. The ECHVR also has a high voltage monitor output (VMON) that provides the user with a low voltage representation of the high voltage output.

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, making it ideal for battery powered applications.

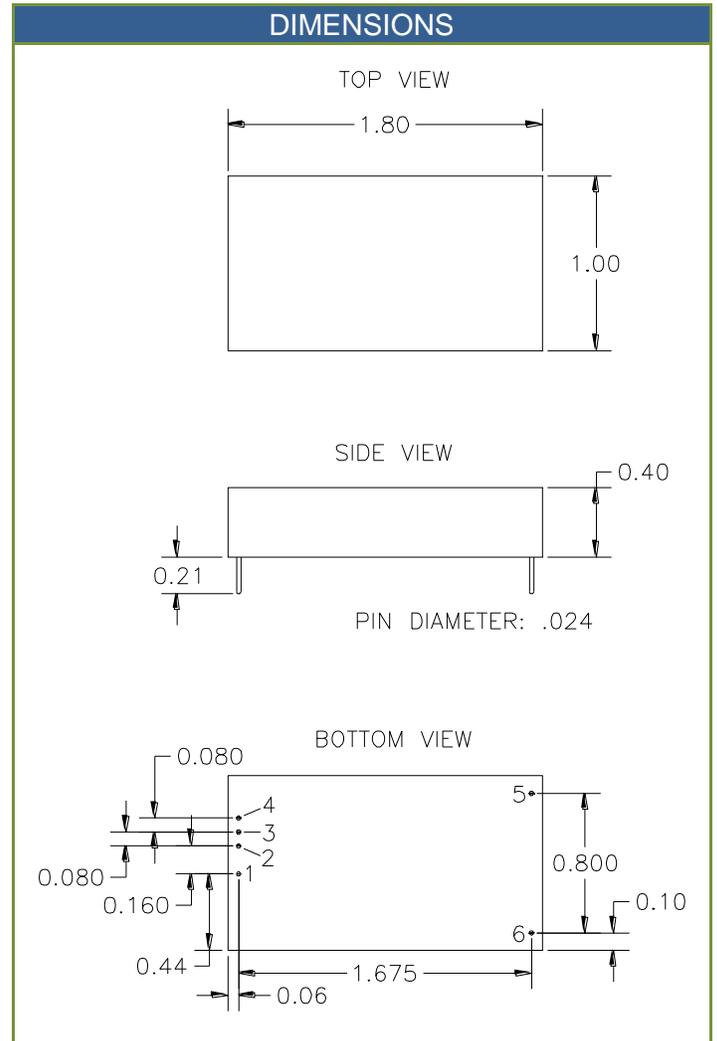
The device operates directly from 5V or 12V input and the output power rating is 1W. Output voltage is independent of input power voltage and is proportional to the programming voltage (0 to 5V produces 0 to full scale output) and features excellent linearity. The ECHVR Series is designed for stable operation over a wide temperature range of -55°C to +70°C.



APPLICATION SCHEMATIC



DIMENSIONS



ELECTRICAL CHARACTERISTICS

Input Power Voltage (VIN):	5V or 12V ± 0.5V
Programming Voltage:	0 to 5VDC results in 0 to rated output; Note: regulation not guaranteed below 3% of full scale
Programming Input Impedance:	>50kΩ
Output Tolerance at No Load:	± 2%
Input/Output Isolation:	None; HVRTN internally connected to GND
Load Regulation:	0.1% (over entire load range)
Output Ripple:	<0.1%
Oscillator Frequency:	45 kHz – 100 kHz
Efficiency:	60% typical at full load

PIN#	FUNCTION
1	Vin
2	GND
3	Program
4	VMON
5	HVRTN
6	HVOUT



Model Selection Guide

Model	Input Voltage	Output Voltage	Maximum Output Load
ECHVR0505	5V	0 to +500V	250k Ω
ECHVR0505N	5V	0 to -500V	250k Ω
ECHVR1205	12V	0 to +500V	250k Ω
ECHVR1205N	12V	0 to -500V	250k Ω
ECHVR0510	5V	0 to +1kV	1M Ω
ECHVR0510N	5V	0 to -1kV	1M Ω
ECHVR1210	12V	0 to +1kV	1M Ω
ECHVR1210N	12V	0 to -1kV	1M Ω
ECHVR0520	5V	0 to +2kV	4M Ω
ECHVR0520N	5V	0 to -2kV	4M Ω
ECHVR1220	12V	0 to +2kV	4M Ω
ECHVR1220N	12V	0 to -2kV	4M Ω
ECHVR0530	5V	0 to +3kV	9M Ω
ECHVR0530N	5V	0 to -3kV	9M Ω
ECHVR1230	12V	0 to +3kV	9M Ω
ECHVR1230N	12V	0 to -3kV	9M Ω
ECHVR0540	5V	0 to +4kV	16M Ω
ECHVR0540N	5V	0 to -4kV	16M Ω
ECHVR1240	12V	0 to +4kV	16M Ω
ECHVR1240N	12V	0 to -4kV	16M Ω
ECHVR0550	5V	0 to +5kV	25M Ω
ECHVR0550N	5V	0 to -5kV	25M Ω
ECHVR1250	12V	0 to +5kV	25M Ω
ECHVR1250N	12V	0 to -5kV	25M Ω
ECHVR0560	5V	0 to +6kV	36M Ω
ECHVR0560N	5V	0 to -6kV	36M Ω
ECHVR1260	12V	0 to +6kV	36M Ω
ECHVR1260N	12V	0 to -6kV	36M Ω
ECHVR0580	5V	0 to +8kV	64M Ω
ECHVR0580N	5V	0 to -8kV	64M Ω
ECHVR1280	12V	0 to +8kV	64M Ω
ECHVR1280N	12V	0 to -8kV	64M Ω
ECHVR05100	5V	0 to +10kV	100M Ω
ECHVR05100N	5V	0 to -10kV	100M Ω
ECHVR12100	12V	0 to +10kV	100M Ω
ECHVR12100N	12V	0 to -10kV	100M Ω