HVM TECHNOLOGY
Innovative High Voltage Products

ECHV Series

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
Low Quiescent Input Current
5V or 12V Input, Models up to 10kV @ 1W
Adjustable from 3% to Full Output
Low Ripple and EMI/RFI
Wide Operating Temperature Range
±1kV Input/Output Isolation

RoHS

Description

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

The ECHV Series includes a range of models with output voltages up to 10kV and input/output isolation of ± 1kV. Fully encapsulated in a compact (1.8”L x 1.0”W 0.40”H) package, the ECHV 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 ECHV Series very easy to use.

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 ECHV Series is designed for stable operation over a wide temperature range of -55°C to +70°C.

Mechanical Characteristics

- **Size:** 1.8” x 1.0” x 0.40”
- **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

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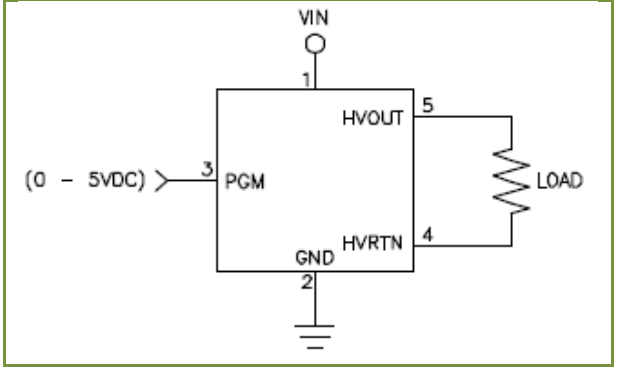
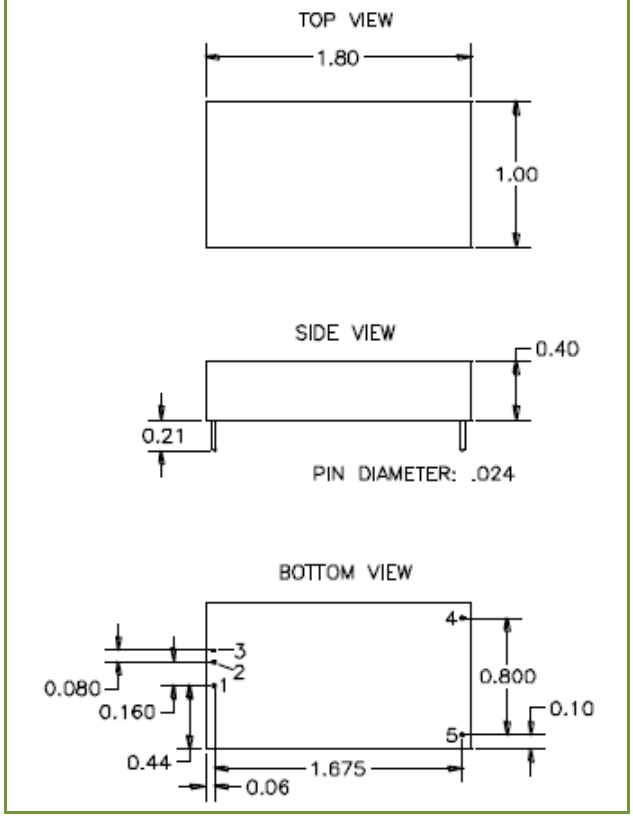
APPLICATION SCHEMATIC



MECHANICAL



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:	± 1kV
Load Regulation:	20% (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	HVRTN
5	HVOUT

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Model Selection Guide

Model	Input Voltage	Output Voltage	Maximum Output Load
ECHV0505	5V	0 to +500V	250kΩ
ECHV0505N	5V	0 to -500V	250kΩ
ECHV1205	12V	0 to +500V	250kΩ
ECHV1205N	12V	0 to -500V	250kΩ
ECHV0510	5V	0 to +1kV	1MΩ
ECHV0510N	5V	0 to -1kV	1MΩ
ECHV1210	12V	0 to +1kV	1MΩ
ECHV1210N	12V	0 to -1kV	1MΩ
ECHV0520	5V	0 to +2kV	4MΩ
ECHV0520N	5V	0 to -2kV	4MΩ
ECHV1220	12V	0 to +2kV	4MΩ
ECHV1220N	12V	0 to -2kV	4MΩ
ECHV0530	5V	0 to +3kV	9MΩ
ECHV0530N	5V	0 to -3kV	9MΩ
ECHV1230	12V	0 to +3kV	9MΩ
ECHV1230N	12V	0 to -3kV	9MΩ
ECHV0540	5V	0 to +4kV	16MΩ
ECHV0540N	5V	0 to -4kV	16MΩ
ECHV1240	12V	0 to +4kV	16MΩ
ECHV1240N	12V	0 to -4kV	16MΩ
ECHV0550	5V	0 to +5kV	25MΩ
ECHV0550N	5V	0 to -5kV	25MΩ
ECHV1250	12V	0 to +5kV	25MΩ
ECHV1250N	12V	0 to -5kV	25MΩ
ECHV0560	5V	0 to +6kV	36MΩ
ECHV0560N	5V	0 to -6kV	36MΩ
ECHV1260	12V	0 to +6kV	36MΩ
ECHV1260N	12V	0 to -6kV	36MΩ
ECHV0580	5V	0 to +8kV	64MΩ
ECHV0580N	5V	0 to -8kV	64MΩ
ECHV1280	12V	0 to +8kV	64MΩ
ECHV1280N	12V	0 to -8kV	64MΩ
ECHV05100	5V	0 to +10kV	100MΩ
ECHV05100N	5V	0 to -10kV	100MΩ
ECHV12100	12V	0 to +10kV	100MΩ
ECHV12100N	12V	0 to -10kV	100MΩ

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