HVM TECHNOLOGY
Innovative High Voltage Products

RK Series

High-Precision Regulated HV DC to DC Converter

Miniature Size (1.40”L x 1.10”W x 0.50”H)
Easy to Use, No External Components Required
Excellent Load and Line Regulation
Extremely Low Quiescent Current
Miniature PC Board Mountable Package
Low Ripple and EMI/RFI
High Impedance Programming Input (>75kΩ)
Wide Operating Temp Range (-40°C to +60°C)

RoHS

Description

The **RK Series** is a family of miniature single-output, fully regulated DC to DC converters supplying up to 2kV @1W in 0.77 cubic inches (1.40”L x 1.10”W x 0.50”H). 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, ultra-compact resonant converter design minimizes quiescent current and operating noise while delivering maximum performance and reliability. The **RK Series** is sold with a factory installed copper adhesive shield for further noise reduction.

The devices operate directly from 5VDC or 12VDC ± 0.5VDC input. 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. Adjustment pads are available to calibrate the unit to ±5% outside of factory settings. The output power rating is 1W. The **RK Series** is very stable over a wide operating temperature range.

The **RK Series** is available with alternate output voltages. Consult sales for additional information.

Mechanical Characteristics

- **Weight:** 23 grams typical
- **Packaging:** Encapsulated in high performance epoxy
- **Shield Material:** Copper Adhesive

Environmental Characteristics

- **Operating Temp Range:** -40ºC to +60ºC
- **Storage Temp Range:** -55ºC to +85ºC

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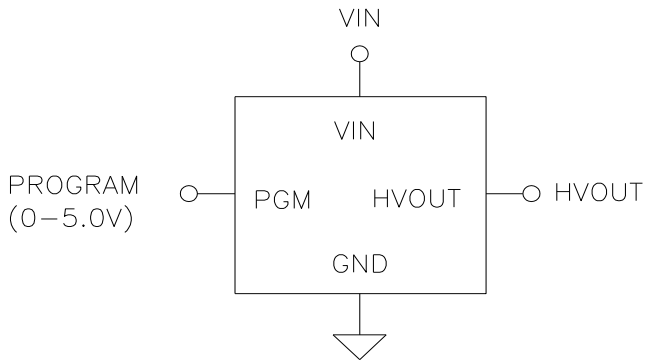
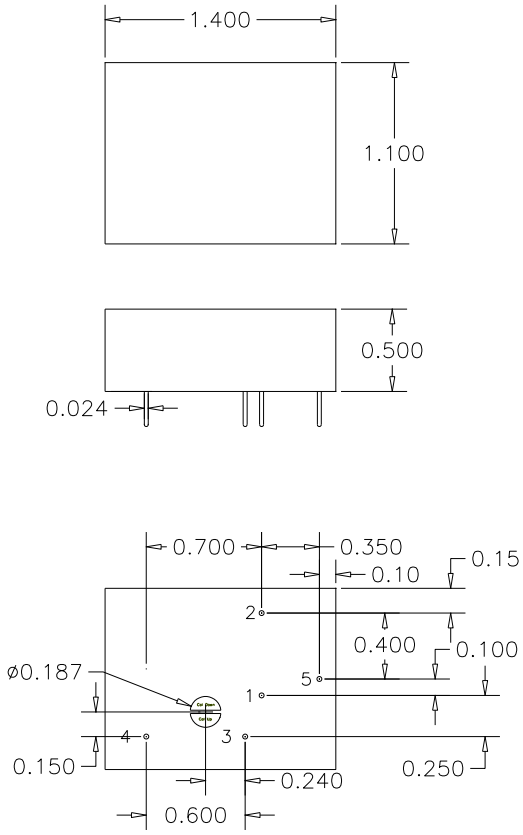
APPLICATION SCHEMATIC



ELECTRICAL CHARACTERISTICS

Input Voltage (VIN)	5V or 12V ± 0.5V
Programming Voltage:	0 to 5V (produces 0 to rated output)
Programming Input Impedance:	>10kΩ
Output Tolerance at No Load:	± 5%
Oscillator Frequency:	50kHz to 100kHz
Load Regulation:	<0.5%
Line Regulation:	0.01%
Output Ripple at Full Load:	<1%
Calibration Adjustment:	Cal Up and Cal Down pads are active when attached to GND. ±5% voltage adjustment typical.
Efficiency:	60% typical at full load

DIMENSIONS



PIN #	FUNCTION
1	VIN
2	GND
3	PROGRAM
4	HVOUT
5	CASE GND

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Model Selection Guide

MODEL	Input Voltage	Output Voltage	MAX Output Current	Input Current No Load	Input Current Max Load
RK0505	5V	0 to +500V	2mA	<35mA	<350mA
RK0505N	5V	0 to -500V	2mA	<35mA	<350mA
RK0510	5V	0 to +1kV	1mA	<35mA	<350mA
RK0510N	5V	0 to -1kV	1mA	<35mA	<350mA
RK0512	5V	0 to +1.2kV	833µA	<35mA	<350mA
RK0512N	5V	0 to -1.2kV	833µA	<35mA	<350mA
RK0520	5V	0 to +2kV	500µA	<35mA	<350mA
RK0520N	5V	0 to +2kV	500µA	<35mA	<350mA
RK1205	12V	0 to +500V	2mA	<35mA	<350mA
RK1205N	12V	0 to +500V	2mA	<35mA	<350mA
RK1210	12V	0 to +1kV	1mA	<35mA	<350mA
RK1210N	12V	0 to -1kV	1mA	<35mA	<350mA
RK1212	12V	0 to +1.2kV	833µA	<35mA	<350mA
RK1212N	12V	0 to -1.2kV	833µA	<35mA	<350mA
RK1220	12V	0 to +2kV	500µA	<35mA	<350mA
RK1220N	12V	0 to -2kV	500µA	<35mA	<350mA