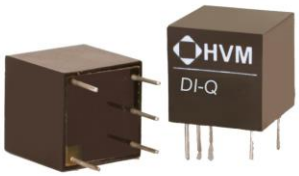
HVM TECHNOLOGY
Innovative High Voltage Products



DI-Q Series

High Voltage DC to DC Converter

Higher Performance Drop-In Replacement for EMCO Q-Series
Case Size (0.5” x 0.5” x 0.5”)
PCB Mountable
No External Components Required
Extremely Low Quiescent Current
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 DI-Q Series is a family of low cost 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”). They are intended to be higher performance, lower cost direct drop-in replacements for EMCO Q-Series devices. These ultra-compact converters are ideal for applications requiring small size and ease of 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 at no load, making it ideal for battery powered applications.

The output voltage is directly proportional to the input voltage from approximately 0.7V input to maximum input voltage, allowing for a controllable output voltage and features excellent linearity.

The output power rating is 0.5W and the input to output isolation is ± 500V.

The DI-Q Series is very stable over a wide operating temperature range.

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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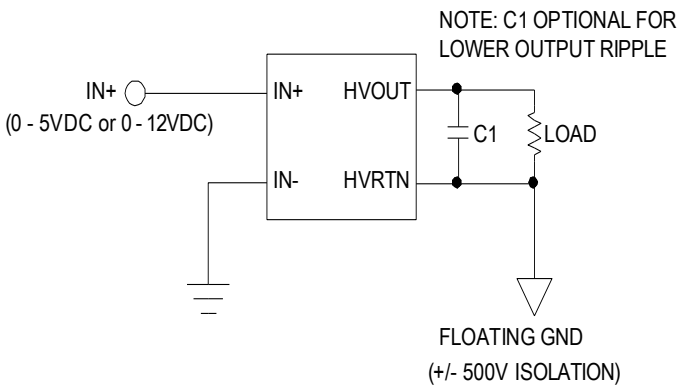
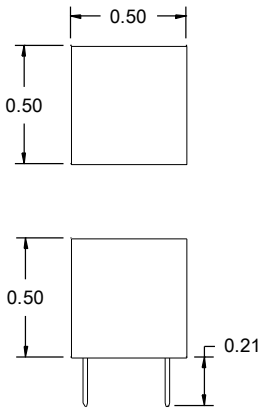
APPLICATION SCHEMATIC



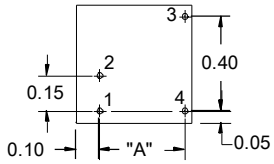
ELECTRICAL CHARACTERISTICS

Input Voltage (IN+): 0 - 5VDC or 0 - 12VDC	Input Voltage (IN+): 0 - 5VDC or 0 - 12VDC
Typical Input Current: 5V input: <175mA @ full load/full output; 12V input: <90mA @ full load	Typical Input Current: 5V input: <175mA @ full load/full output; 12V input: <90mA @ full load
Output Voltage (HVOUT): Linear function of IN+ from approx. 0.7V < IN+ < 5V; full scale output at IN+ = 5V @ full load	Output Voltage (HVOUT): Linear function of IN+ from approx. 0.7V < IN+ < 5V; full scale output at IN+ = 5V @ full load
Output Tolerance @ Full Load, @ 5V IN+: +5%/-10%	Output Tolerance @ Full Load, @ 5V IN+: +5%/-10%
Input-Output Isolation: ± 500Vdc	Input-Output Isolation: ± 500Vdc
Load Regulation: 20% (drop from no load to full load)	Load Regulation: 20% (drop from no load to full load)
Output Ripple: <2% typical at full load	Output Ripple: <2% typical at full load

MECHANICAL



BOTTOM VIEW



Note:
For models up to 2kV: Dimension "A" is .35", pin diameter is .025"
For models greater than 2kV: Dimension "A" is .37", pin diameter is .016

PIN#	FUNCTION
1	IN –
2	IN +
3	HV RTN
4	HV OUT

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Model Selection Guide

Model	Input Voltage	Output Voltage	Max Output Current
DI-Q-0505	5V	0 to ±500V	1mA
DI-Q-0510	5V	0 to +1kV	500µA
DI-Q-0510N	5V	0 to -1kV	500µA
DI-Q-0512	5V	0 to +1.2kV	417µA
DI-Q-0512N-	5V	0 to -1.2kV	417µA
DI-Q-0520	5V	0 to +2kV	250µA
DI-Q-0520N	5V	0 to -2kV	250µA
DI-Q-0530	5V	0 to +3kV	167µA
DI-Q-0530N	5V	0 to -3kV	167µA
DI-Q-0540	5V	0 to +4kV	125µA
DI-Q-0540N	5V	0 to -4kV	125µA
DI-Q-0550	5V	0 to +5kV	100µA
DI-Q-0550N	5V	0 to -5kV	100µA

Model	Input Voltage	Output Voltage	Max Output Current
DI-Q-1205	12V	0 to ±500V	1mA
DI-Q-1210	12V	0 to +1kV	500µA
DI-Q-1210N	12V	0 to -1kV	500µA
DI-Q-1212	12V	0 to +1.2kV	417µA
DI-Q-1212N	12V	0 to -1.2kV	417µA
DI-Q-1220	12V	0 to +2kV	250µA
DI-Q-1220N	12V	0 to -2kV	250µA
DI-Q-1230	12V	0 to +3kV	167µA
DI-Q-1230N	12V	0 to -3kV	167µA
DI-Q-1240	12V	0 to +4kV	125µA
DI-Q-1240N	12V	0 to -4kV	125µA
DI-Q-1250	12V	0 to +5kV	100µA
DI-Q-1250N	12V	0 to -5kV	100µA