

0.1kV - 6kV, 1W

I/O PROPORTIONAL, LOW POWER CONSUMPTION **EMCO HIGH VOLTAGE CORPORATION**
HIGH VOLTAGE POWER SUPPLIES

- Small Case Size
- Light Weight
- Short Circuit Protection
- Low EMI/RFI
- Isolated Output
- User-Selectable Output Polarity
- Low Cost / High Performance
- MTBF: >2.31 million hrs per Bellcore TR-332

● **APPLICATIONS**

- Portable, Battery Powered Applications
- Sustaining Ion Pumps
- Vacuum Gauges
- Photomultiplier Tubes
- Spectrometry, Electrostatic Chucks, Lamp Ignition
- Displays, Non-impact Printers
- Electrostatic Field Generation, Avalanche Photodiodes
- Piezo Devices, Electrophoresis



The GP Series is a line of miniature, DC to HV DC converters providing 0.1kV_{DC} to 6kV_{DC}, positive or negative, in a compact PCB mount package. This line features low power consumption, making it ideal for portable, battery powered applications. The isolated output is proportional to the input, and is linear from approximately 0.7 volts in. A low noise quasi-sinewave oscillator and shielded transformer provide clean, reliable DC to HV DC conversion with low EMI and RFI. The isolated output allows for user selectable output polarity. No minimum load is required.

Model	Output* ³ Voltage	Output* ⁵ Current	Input Voltage	Input* ² Current (No Load)	Input* ² Current (Full Load)	Ripple
GP01	0 - 0.1kV	10mA	0 - 12V	<45mA	<150mA	<0.75%
GP02	0 - 0.2kV	5mA	0 - 12V	<45mA	<150mA	<1.75%
GP03	0 - 0.3kV	3mA	0 - 12V	<45mA	<125mA	<0.50%
GP05	0 - 0.5kV	2mA	0 - 12V	<15mA	<125mA	<0.50%
GP06	0 - 0.6kV	1.66mA	0 - 12V	<15mA	<125mA	<0.50%
GP08	0 - 0.8kV	1.25mA	0 - 12V	<25mA	<125mA	<0.75%
GP10	0 - 1kV	1mA	0 - 12V	<15mA	<125mA	<0.75%
GP12	0 - 1.2kV	840µA	0 - 12V	<15mA	<125mA	<0.75%
GP15	0 - 1.5kV	660µA	0 - 12V	<20mA	<125mA	<0.75%
GP20	0 - 2kV	500µA	0 - 12V	<30mA	<130mA	<0.75%
GP25	0 - 2.5kV	400µA	0 - 12V	<30mA	<130mA	<1.00%
GP30	0 - 3kV	340µA	0 - 12V	<40mA	<130mA	<1.00%
GP40* ¹	0 - 4kV	250µA	0 - 12V	<50mA	<130mA	<1.00%
GP50* ¹	0 - 5kV	200µA	0 - 12V	<70mA	<150mA	<1.50%
GP60* ¹	0 - 6kV	166µA	0 - 12V	<85mA	<175mA	<1.00%

*1 Models GP40, GP50 & GP60 do not have internal bleeder resistors on the output. Provisions must be made externally to discharge the output capacitors if this feature is desired.

*2 At Maximum Rated Output Voltage.

*3 Output Voltage is load dependent. Under light or no load conditions, reduce input voltage so maximum rated output voltage is not exceeded.

*4 Specifications after 30 minutes warm-up, full load, at 25°C unless otherwise noted.

*5 The rated output current is available at full output voltage and must be derated proportionally as the input voltage decreases. For example: a 500V, 1.5W unit, rated at 3mA at 500V will provide 1.5mA at 250V out.

● **SPECIFICATIONS**

Input Voltage:	See table	Isolation:	3.5kV+Vout
Typical Turn-On Voltage:	0.7 V	Weight:	40 g
Output Voltage Tolerance (Full Load, 12V in, +25°C) :	+1%, -5%	Packaging:	Fully Encapsulated
Output Current:	See Table	Case Material:	Glass-filled Epoxy
Ripple:	See Table		
Operating Temp:	-20°C to +70°C	● ACCESSORIES	
Storage Temp:	-20°C to +105°C	AB External Mounting Box	
Load Regulation:	<10% (No Load to Full Load)		

• OPTIONS

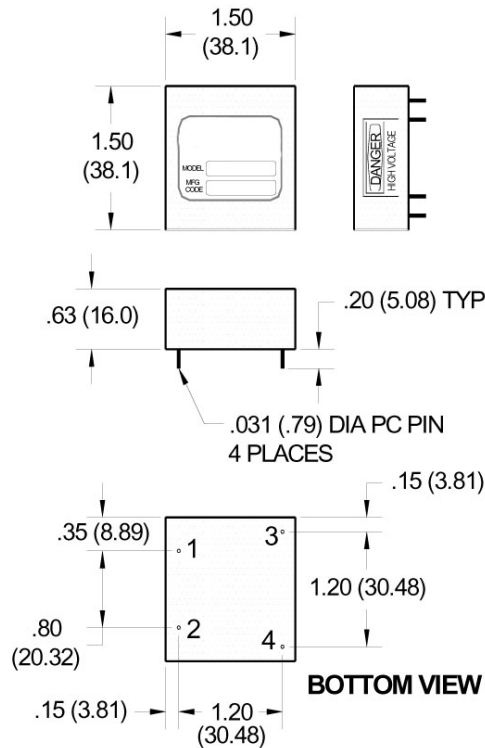
-R RoHS Compliant

Epoxy: **A.** Low Outgassing
(NASA approved per ASTM E-959-93)
B. UL 94 V0 flammability rating

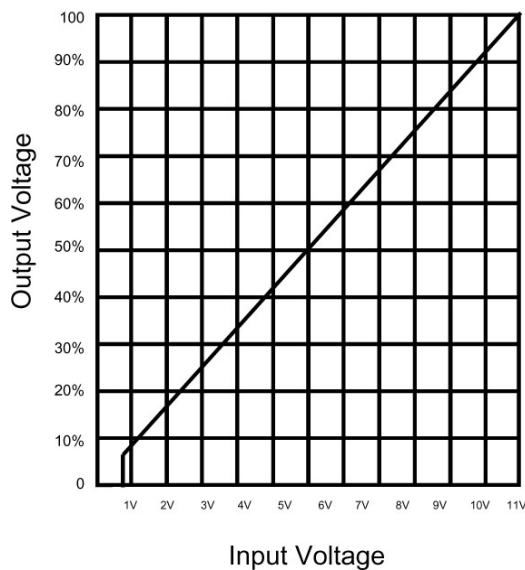
• DIMENSIONS inch (mm)

Pin 1: (+) Input
Pin 2: (-) Input
Pin 3: (+) Output
Pin 4: (-) Output

Pins dimensions: 0.79mm Diameter,
5.1mm Long



• INPUT / OUTPUT CHARACTERISTIC



Design Tips:

- 1) Select a higher voltage model and bias it at a lower input voltage to get the desired output voltage. Power consumption will be substantially lower.
- 2) Ripple can be further reduced by connecting a capacitor across the output.