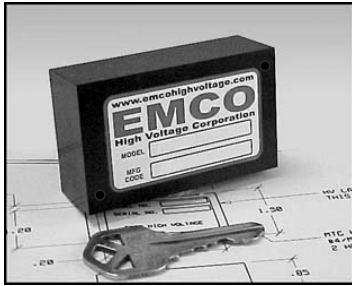


# Proportional DC to HV DC Converters



0 to + or - 100 through 0 to + or - 12,000 VDC up to 3 Watts  
E Series



The E Series is a broad line of small, versatile, component level building blocks that provide up to 12,000 VDC at up to 3 watts continuous output power\*<sup>2</sup> in a PCB mount package. This series features low ripple, noise, and EMI/RFI by utilizing a quasi-sinewave oscillator, excellent filtering techniques and a fully enclosed pot core transformer. The output voltage is

directly proportional to the input voltage, and is linear from approximately 0.7 volts to maximum input. The isolated output allows for user selectable output polarity. Options include external aluminum box, and an output center tap which, when grounded, provides both positive and negative outputs from one low cost module.

## FEATURES

- Low Ripple
- Low EMI/RFI
- Proportional Input/Output
- Exceptional Reliability
- Compact, PCB Mount Package
- Proven Reliability, (model E05)  
MTBF: >2. million hrs per Bellcore TR-332

## OPTIONS

- RoHS(- 'R' suffix denotes the product is designed to meet RoHS requirements i.e. E01R)
- External Mounting Box, See AB Series
- Output Center Tap, See CT Series
- Alternate Pin Patterns Available (see page 2)
- Epoxy: **A.** Low Outgassing (NASA approved per ASTM E-959-93)  
**B.** UL 94 V0 flammability rating
- Extended Operating & Storage Temperature: Contact Factory

## APPLICATIONS

- Electro-Static Field Generation
- HV Op Amps
- Grid Bias
- Spectrometry
- Piezo Devices
- Lamp Ignition
- Q Switches
- Ion Pumps
- Capacitor Charging
- Electrophoresis
- Image Intensifiers
- Printers

## PHYSICAL CHARACTERISTICS

- SIZE: 1.5 x 2.5 x 0.85 (38 x 64 x 22)
- WEIGHT: 3 Ounces (85 grams) Approx.
- PACKAGING: Epoxy Encapsulated
- CASE MATERIAL: Glass-filled Epoxy
- PINS: .031 (.79) Dia., .20 (5.1) Min. Length

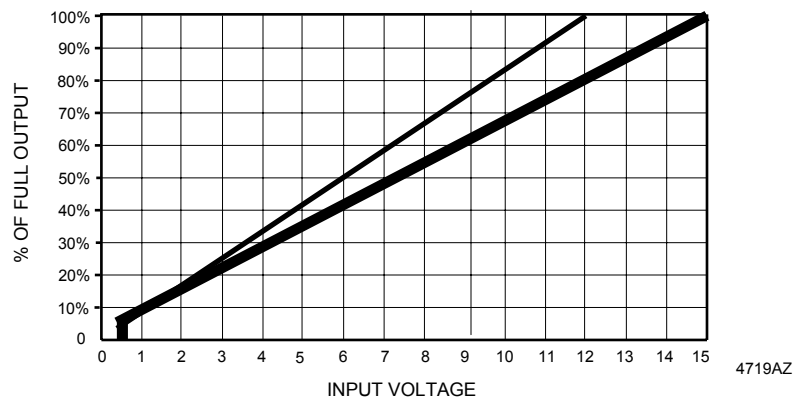
## ELECTRICAL SPECIFICATIONS\*<sup>4</sup>

- INPUT VOLTAGE: See Table
- INPUT CURRENT: (No Load) <175mA
- INPUT CURRENT: (Full Load) <400mA
- TYPICAL TURN-ON VOLTAGE: 0.7 Volts
- OUTPUT VOLTAGE: See Table
- OUTPUT CURRENT: See Table
- RIPPLE: See Table
- ISOLATION: 3,500 Volts +Vout  
E70 – E121: 500V + Vout
- EFFICIENCY: >60% Typical
- OPERATING TEMP: -10° to +60° C  
E70 – E121: -10° to +50° C

MODEL	INPUT VOLTAGE	OUTPUT* <sup>3</sup> VOLTAGE	OUTPUT* <sup>2</sup> CURRENT	RIPPLE P-P
E01	0 to 12	0 to +/-100	30 mA	0.1%
E02	0 to 12	0 to +/-200	15 mA	0.25
E02-5	0 to 12	0 to +/-250	12 mA	0.75
E03	0 to 12	0 to +/-300	10 mA	1.0%
E05	0 to 12	0 to +/-500	6 mA	0.02
E06	0 to 12	0 to +/-600	5 mA	0.1%
E08	0 to 12	0 to +/-800	3.75 mA	0.03
E10	0 to 12	0 to +/-1,000	3 mA	0.03
E12	0 to 12	0 to +/-1200	2.5 mA	0.2%
E15	0 to 12	0 to +/-1,500	2 mA	0.05
E20	0 to 12	0 to +/-2,000	1.5 mA	0.25
E30	0 to 15	0 to +/-3,000	1 mA	0.25
E40	0 to 15	0 to +/-4,000	0.75 mA	0.5%
E50	0 to 15	0 to +/-5,000	0.6 mA	0.5%
E60	0 to 15	0 to +/-6,000	0.5 mA	0.5%
E70* <sup>1</sup>	0 to 15	0 to +/-7,000	0.43 mA	1%
E80* <sup>1</sup>	0 to 15	0 to +/-8,000	0.25 mA	1.25
E101*	0 to 15	0 to +/-10,000	0.2 mA	1.5%
E121*	0 to 15	0 to +/-12,000	0.16 mA	1.5%

- \*Note: 1. This unit has flying leads on the output and clearance holes for mounting
- 2. At Maximum Rated Output Voltage.
- 3. Output Voltage is load dependent. Under light or no load conditions, reduce input voltage so maximum rated voltage is not exceeded.
- 4. Specifications after 30 minute warm-up, full load, at 25°C unless otherwise noted.

## TYPICAL INPUT vs. OUTPUT VOLTAGES

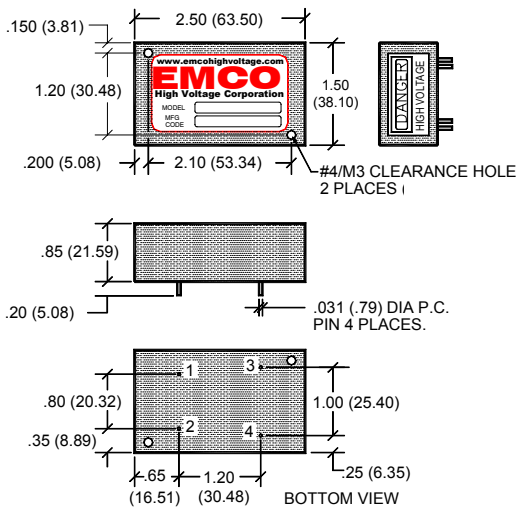


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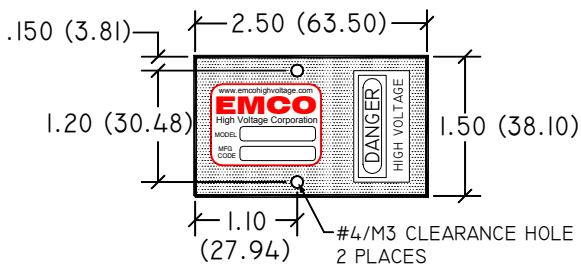
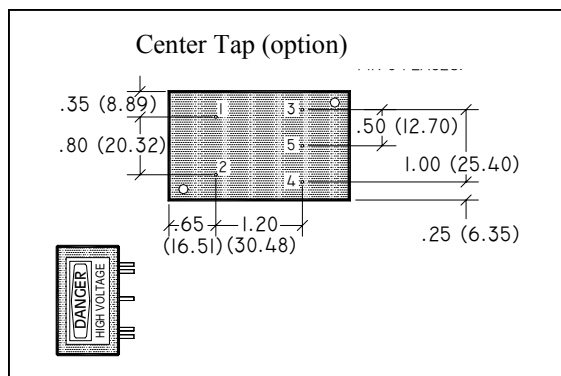
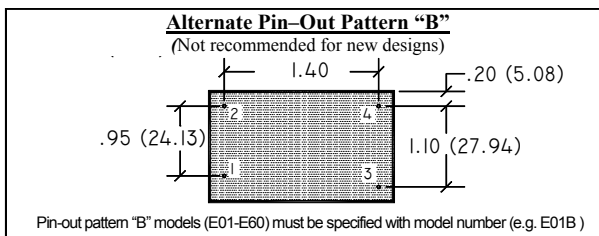
0 to + or - 100 through 0 to + or - 12,000 VDC up to 3 Watts  
E Series



## E01-E60

Dimensions are in Inches  
Dimensional Tolerances:  $\pm .03$  ( $\pm .76$ )  
(Metric Equivalents in Parentheses)

Pin #	Function
1	(+) Input
2	(-) Input
3	(+) Output
4	(-) Output
5	Center Tap ( <i>optional</i> )



## E70-E121

Dimensions are in Inches  
Dimensional Tolerances:  $\pm .03$  ( $\pm .76$ )  
(Metric Equivalents in Parentheses)

Pin #	Function
1	(+) Input
2	(-) Input
3*	(+) Output
4*	(-) Output
5	Center Tap ( <i>optional</i> )

\*Output Leads

