Compact, 10 Watt, High Voltage Modules

0 to + or - 100 through 0 to + or - 12,000 VDC @ 10 Watts
F Series

EMCO HIGH VOLTAGE CORPORATION

The F Series is a broad line of versatile, robust, DC to HV DC converters providing 100 VDC to 12,000 VDC (positive or negative polarity) at 10 Watts continuous output power.*[1] The output is proportional to the input voltage and features a low 0.7 typical turn-on voltage. Nineteen models are available covering the range of 0 to 100 through 0 to 12,000 volts, positive or negative. These modules exhibit very low EMI/RFI, noise and ripple by means of a quasi-sinewave oscillator, a fully enclosed transformer, input and output filtering, and a five sided metal enclosure. The isolated output allows for user selectable output polarity. Options include two mounting holes and an output center-tap option which, when grounded, provides both positive and negative outputs from one compact, low cost module. Contact our Applications Department for immediate technical assistance.

FEATURES
Metal Case and Shielded Transformer *result in Very Low EMI/RFI*
Low Ripple
Short Circuit Protection
Compact Package
PCB Mountable
Input/Output Isolation
Input/Output Filtering
Proven Reliability
Cost Effective HV Power

OPTIONS
Mounting Holes, **F01 – F60 add H to model number (e.g. F10H)**
Output Center Tap, See CT Series
Epoxy: **A**. Low Outgassing (NASA approved per ASTM E-959-93)
B. UL 94 V0 flammability rating

APPLICATIONS
Capacitor Charging
Spectrometry
Piezo Devices
Lamp Ignition
Lamp Drive
Q Switches
Ion Pumps
Electrostatic Field Generation
Grid Bias
Electrophoresis
Lasers
Electrostatic Chucks

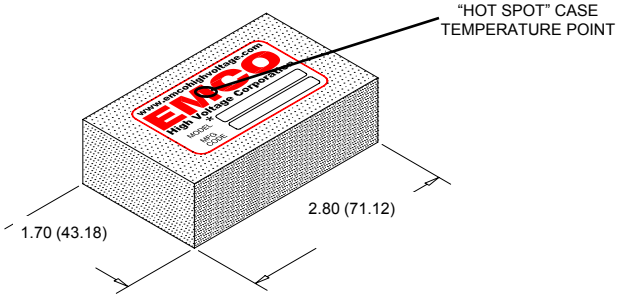
PHYSICAL CHARACTERISTICS
F01-F60: 2.8 x 1.7 x 0.85 (71 x 43 x 21) *see Dwg on Sheet 2*
F70-F121: 2.8 x 1.7 x 0.95 (71 x 43 x 24) *see Dwg on Sheet 2*
WEIGHT: <5 Ounces (142 grams)
PACKAGING: Epoxy Encapsulated
CASE MATERIAL: Black Anodized Aluminum

ELECTRICAL SPECIFICATIONS
INPUT VOLTAGE: *See Table*
TYPICAL TURN-ON VOLTAGE: 0.7 Volts
OUTPUT VOLTAGE: *See Table*
OUTPUT CURRENT: *See Table*
RIPPLE: *See Table*
ISOLATION: 3,500 Volts + Vout
F70 – F121: 500V + Vout
EFFICIENCY: >70% Typical
OPERATING TEMP: -10° to +50° C
MAXIMUM CASE TEMP:+85° C (measured at point indicated)
F70 – F121: +70° C (measured at point indicated)

SEE SHEET 2 FOR MECHANICAL DETAILS

MODEL	INPUT VOLTAGE	INPUT CURRENT NO LOAD	INPUT CURRENT FULL LOAD	OUTPUT VOLTAGE*[2]	OUTPUT*[1] CURRENT	RIPPLE P-P
F01	0 to 12	<500 mA	<1.75	0 to +/-100	100 mA	<1.0%
F02	0 to 12	<500 mA	<1.5 A	0 to +/-200	50 mA	<1.0%
F03	0 to 12	<500 mA	<1.5 A	0 to +/-300	33.3 mA	<1.0%
F04	0 to 12	<500 mA	<1.5 A	0 to +/-400	25 mA	<1.0%
F05	0 to 12	<500 mA	<1.5 A	0 to +/-500	20 mA	<0.1%
F06	0 to 12	<500 mA	<1.5 A	0 to +/-600	16 mA	<0.1%
F08	0 to 12	<500 mA	<1.5 A	0 to +/-800	12.5 mA	<0.1%
F10	0 to 12	<500 mA	<1.5 A	0 to +/-1,000	10 mA	<0.1%
F12	0 to 12	<500 mA	<1.5 A	0 to +/-1,200	8.3 mA	<0.1%
F15	0 to 12	<500 mA	<1.5 A	0 to +/-1,500	6.6 mA	<0.1%
F20	0 to 12	<500 mA	<1.5 A	0 to +/-2,000	5 mA	<1.0%
F30	0 to 15	<500 mA	<1.5 A	0 to +/-3,000	3.3 mA	<1.0%
F40	0 to 15	<500 mA	<1.5 A	0 to +/-4,000	2.5 mA	<1.0%
F50	0 to 15	<500 mA	<1.5 A	0 to +/-5,000	2 mA	<1.0%
F60	0 to 15	<500 mA	<1.5 A	0 to +/-6,000	1.66 mA	<1.0%
F70	0 to 15	<500 mA	<1.5 A	0 to +/-7,000	1.5 mA	<2.5%
F80	0 to 15	<500 mA	<1.5 A	0 to +/-8000	1.25 mA	<2.5%
F101	0 to 15	<500 mA	<1.5 A	0 to +/-10,000	1 mA	<2.5%
F121	0 to 15	<500 mA	<1.5 A	0 to +/-12,000	.834 mA	<2.5%

*Note 1. At Maximum Rated Output Voltage.
2. Output Voltage is load dependent. Under light or no load conditions, reduce input voltage so maximum rated output voltage is not exceeded.



Dimensions are in inches
Dimensional Tolerances: ± .03 (.76mm)
(Metric equivalents in parenthesis)

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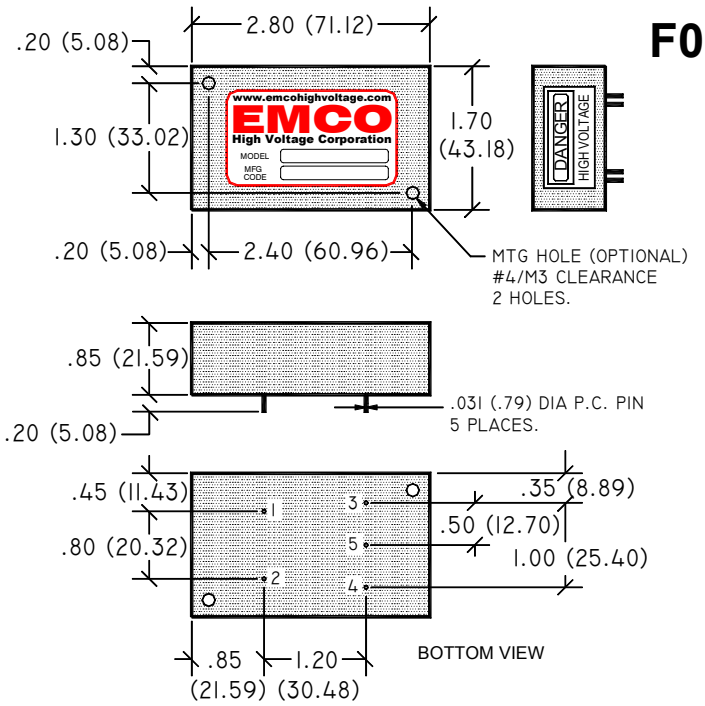
www.emcohighvoltage.com
EMCO
High Voltage Corporation

F01-F60

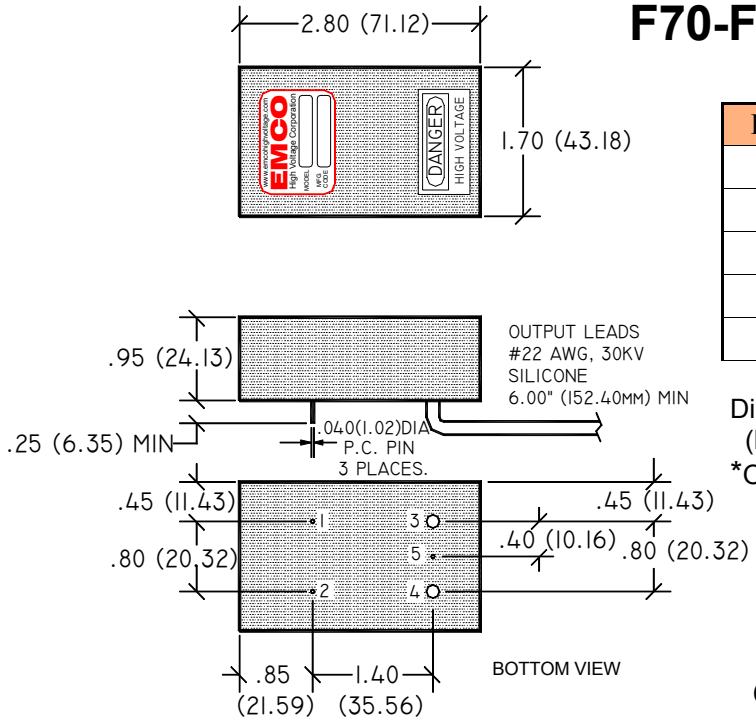


PIN #	FUNCTION
1	(+) Input
2	(-) Input
3	(+) Output
4	(-) Output
5	Center tap (optional)

Dimensions are in Inches
Dimensional Tolerances: ±.03 (±.76)
(Metric equivalents in parenthesis)

Note: Case is internally connected to (-) input.

F70-F121



PIN #	FUNCTION
1	(+) Input
2	(-) Input
3*	(+) Output
4*	(-) Output
5	Center tap (optional)

Dimensions are in Inches
Dimensional Tolerances: ±.03 (±.76)
(Metric equivalents in parenthesis)
*Output Leads

Note: Case is internally connected to (-) input.

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