

MC SERIES

PCB-MOUNT DC/DC HIGH VOLTAGE CONVERTERS

Compact, fully encapsulated DC/DC high voltage converters for direct PCB mounting. Output voltage is proportional to the applied input, with reversible-polarity models through 5 kV and fixed positive or negative models from 10 to 20 kV.


50 V-20 kV

OUTPUT RANGE

UP TO 3 W

RATED POWER

2.8 / 5.6 in3

PACKAGE VOLUME

10 MODELS

STANDARD RANGE

KEY CAPABILITIES

- Compact, low-cost PCB-mount construction
- Output proportional to input voltage
- Floating input and output through 5 kV
- High input/output isolation
- Short-circuit and reverse-polarity protection
- Fully encapsulated package

TYPICAL APPLICATIONS

- Medical electronics
- Photomultiplier tubes
- Ionization chambers
- Geiger tubes

STANDARD MODEL GUIDE

Model	Output voltage range	Polarity	Output current
MC5	50-500 VDC	Reversible	6 mA
MC15	150 V-1.5 kV	Reversible	2 mA
MC30	300 V-3 kV	Reversible	1 mA
MC50	500 V-5 kV	Reversible	200 μ A
MC100P	1-10 kV	Positive	200 μ A
MC100N	1-10 kV	Negative	200 μ A
MC150P	1.5-15 kV	Positive	160 μ A
MC150N	1.5-15 kV	Negative	160 μ A
MC200P	2-20 kV	Positive	150 μ A
MC200N	2-20 kV	Negative	150 μ A

Select the model for the required output-voltage range. Models through 5 kV are reversible; choose P or N for 10, 15, and 20 kV models. Add -RC when the RoHS-compliant version is required.



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HIGH VOLTAGE SOLUTIONS

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ELECTRICAL CHARACTERISTICS

Input voltage	1.75-12 VDC through 10 kV; 1.75-15 VDC for 15 kV; 3.5-24 VDC for 20 kV
Input current	400 mA through 10 kV; 300 mA for 15 kV; 375 mA for 20 kV
Output voltage	Proportional to input; approximately linear from 10% to maximum output
Output current	See model guide; up to 3 W maximum depending on model
Load regulation	5% from half load to full load
Ripple	1% peak-to-peak typical

INTEGRATION AND CONTROL

- Apply the specified DC input for the selected voltage class
- Output voltage follows the input voltage from approximately 10% to maximum output
- Models through 5 kV provide floating input and output connections
- MC100, MC150, and MC200 use fixed positive or negative polarity
- Maintain appropriate high voltage spacing and isolation on the PCB

PHYSICAL AND ENVIRONMENTAL

Dimensions	Through 5 kV: 1.5 x 2.5 x 0.75 in; 10, 15, and 20 kV: 1.5 x 2.5 x 1.5 in
Volume	2.8 cubic inch through 5 kV; 5.6 cubic inch for 10, 15, and 20 kV
Weight	4 oz through 5 kV; 7 oz for 10, 15, and 20 kV
Packaging	Solid encapsulation
Terminations	Four PCB pins through 5 kV; three PCB pins plus high voltage conductor for 10, 15, and 20 kV; use 0.045 in PCB holes
Temperature range	-20 to +60 deg C

CONFIGURATION NOTES

- Reversible output connection through 5 kV
- Fixed positive or negative polarity from 10 to 20 kV
- Custom electrical configurations available
- RoHS-compliant version: add -RC suffix

MODEL NUMBER FORMAT

MC[Voltage Code][Polarity][RC]

EXAMPLE

MC100P-RC 10 kV | Positive | 200 uA | RoHS compliant

P = positive N = negative -RC = RoHS-compliant version

HIGH VOLTAGE SOLUTIONS

©2026 Gamma High Voltage Research | MC Series Data Sheet | Rev A

Get in touch

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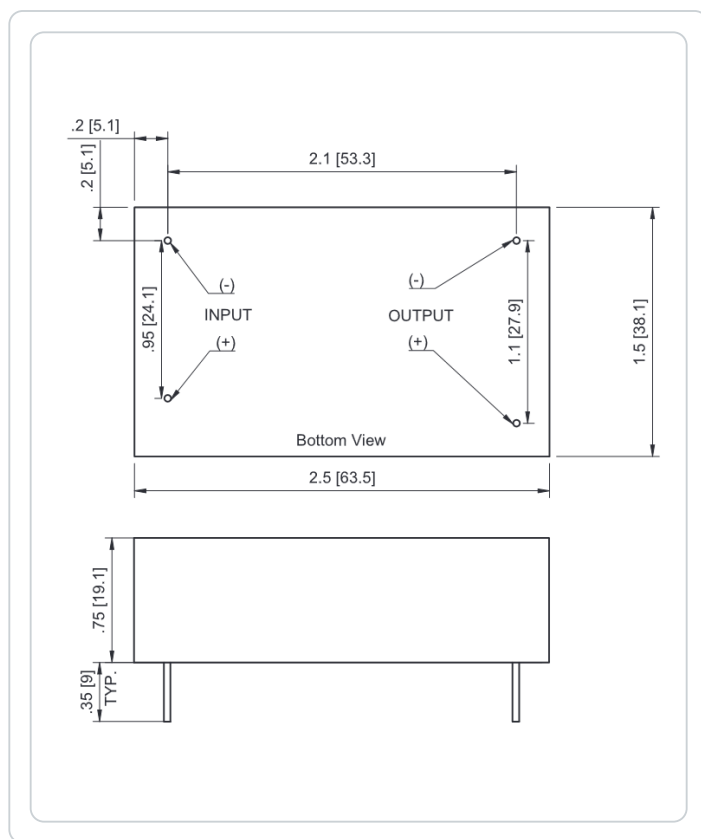
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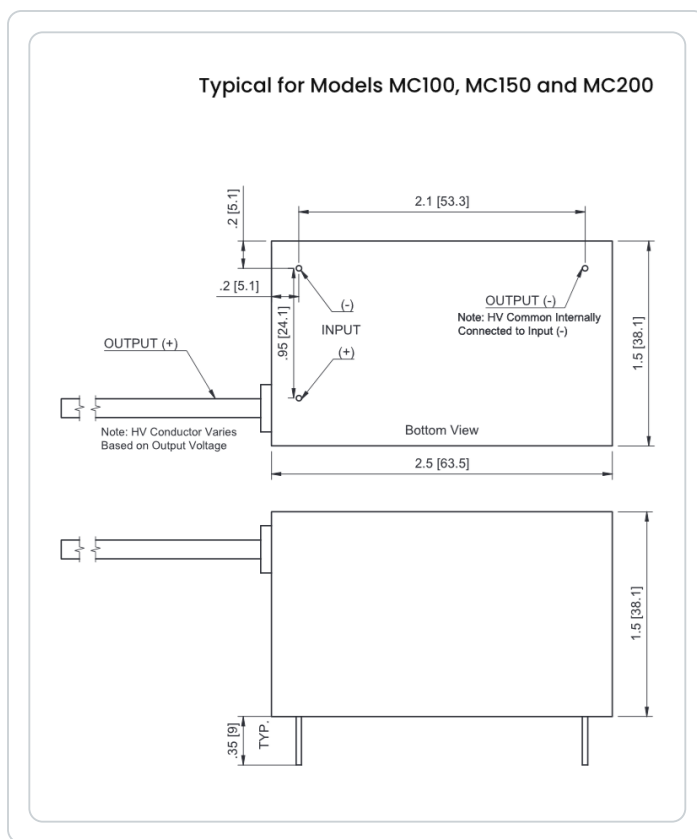
PCB MOUNTING AND PACKAGE DIMENSIONS

Mechanical dimensions for the two standard MC package heights are shown below. Dimensions are in inches with millimeters in brackets.

MODELS THROUGH 5 kV



MODELS MC100, MC150, AND MC200



PCB AND HIGH VOLTAGE CONNECTION NOTES

- Models through 5 kV use four PCB pins with separate floating input and output connections.
- MC100, MC150, and MC200 use three PCB pins; the negative high voltage output is internally common with input negative.
- The positive high voltage output conductor on MC100, MC150, and MC200 varies with the selected output voltage.
- Use approximately 0.045 in diameter PCB holes and maintain suitable high voltage clearance around all output connections.