

## 100W, Rugged, Ultra-compact, Industrial DC/DC Converter MIP 110-FT Series

- Rugged industrial quality
- Single output
- Conduction/convection cooled
- Full electronic protection
- Field-proven design
- Cost optimized



The MIP 110 Series rugged, industrial quality DC/DC converter uses a field proven design to generate 100W output power. It is a mature product with a track record in numerous applications. This converter is a complete turn-key unit with input filter, hold-up capacitors and output filter. Cooling is via baseplate to a heatsinking surface and by natural convection. Low component count, large design headrooms, and the use of components with established reliability result in a high MTBF. It features 135kHz switching frequency. Additional ruggedizing and conformal coating are available for applications requiring higher immunity to shock, vibration and humidity. Customized, potted versions, are also available. This series is suitable for building complex, multi-output DC/DC systems with virtually no NRE cost. Multiple output versions with two, three or four outputs are also available. The MIP 110 is manufactured at our plant under strict quality control.

### SPECIFICATIONS

#### Input Voltage

24Vdc or 48Vdc standard  
Consult factory for other voltages

#### Input Protection

Inrush current limiting  
Varistor  
Reverse polarity protection  
Internal safety fuse  
Lower voltage than the specified minimum input will not damage the unit.

#### Isolation

Depends on the required input/output configuration. At a minimum:  
500VDC input to chassis,  
500VDC input to output,  
500VDC output to chassis

#### Standards

Designed to meet EN 60950 and corresponding UL and CSA standards

#### EMI

Each version meets the requirements of EN55022 Class A with margins

#### Switching Frequency

135kHz +/- 5kHz

#### Output Voltage/Current

12V/8A, 24V/4A, 36V/3A,  
48V/2A, 72V/1.4A are standard  
Consult factory for other voltages

#### Redundancy Diode

None on this series

#### Line/Load Regulation

+/- 1% combined from no load to full load

#### Dynamic Response

Max 5% voltage deviation for 10% to 50% load step, with better than 1msec recovery time

#### Output Ripple / Noise

Better than 1% of output voltage peak to peak or 0.2% RMS of the output voltage (20MHZ BW)

#### Output Overload Protection

Current limiting with short circuit protection (hiccup mode)

#### Output Overvoltage Protection

Double regulator loop and transzorb clamp

#### Efficiency

Output voltage dependent.  
Typically 80% at full load

#### Operating Temperature Range

0 to +50°C. Higher rating depends on available conduction and convection.

#### Temperature Drift

0.03% per °C over operating temperature range

#### Cooling

Conduction to customer heatsink or chassis and natural convection

#### Environmental Protection

Basic ruggedizing  
Conformal coating as option

#### Humidity

5 – 95% non-condensing

#### MTBF

150,000 hours @ 45°C  
Demonstrated MTBF is significantly higher

#### Indicators

None on standard version

#### Control Input

None

#### Alarm Output

None

#### Packaging/Dimensions/Weight

FM Enclosed case:  
66 x 38 x 163 mm  
(2.6" x 1.5" x 6.4") including terminal block and flanges.  
Mounting holes are clear  
Open frame:  
PCB Size: 2" x 5.3"  
Component height: 1.125"

#### Weight

Approx: 0.4 kg (0.9 lb)

#### Connections

5-pole barrier-type terminal block

#### RoHS Compliance

Fully compliant

#### Warranty

Two years subject to application within good engineering practice



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