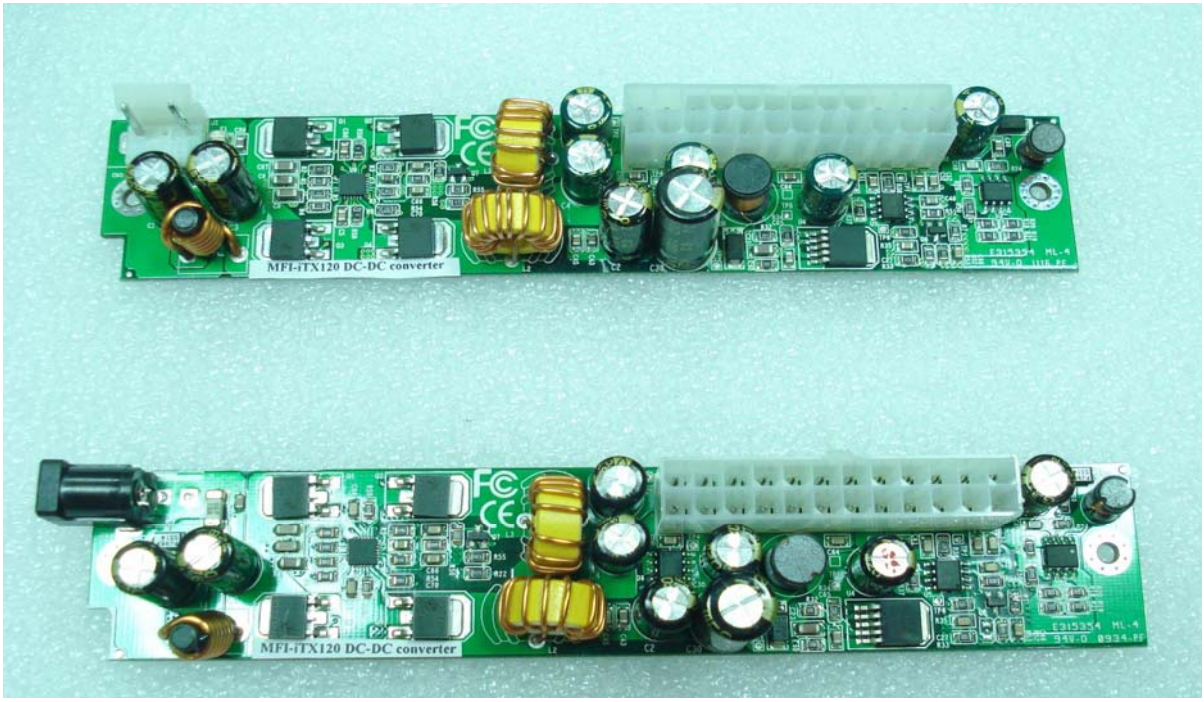
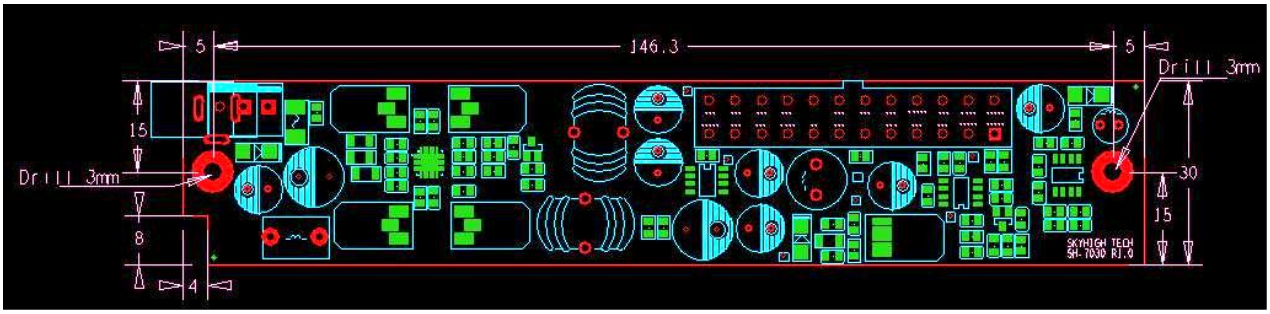
Compact and silent power solution for mini ITX

MFI-iTX120
DC to DC Converter
Specification





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1.0 Scope

This specification defines the physical, functional and electrical characteristics of 120 watts with 5 outputs DC-DC switching power supply that supports **mini ITX mainboard.** Vin is supposed to be AC adaptor with **single 12VDC output**. Testing whole system **in advance for compatibility** is required.

2.0 INPUT CHARACTERISTICS

2.1 Input Voltage

11.4~13.0 VDC

2.2 Input Current

10A input in Typical

2.3 Maximal Inrush current

45 A @ 12V (at 25°C ambient cold start).

3.0 OUTPUT CHARACTERISTICS

3.1 DC Output Characteristics

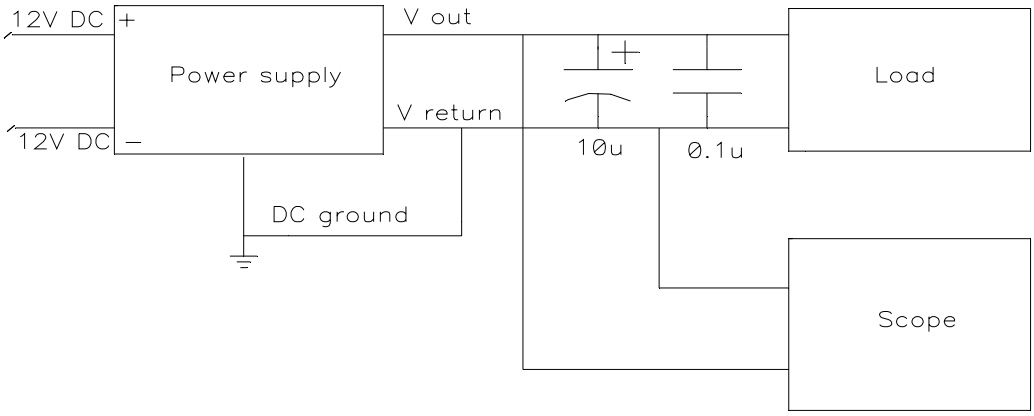
Output Voltage	V1 +5V	V2 +3.3V	V3 +12V	V4 -12V	V5 +5Vsb
Rated Load	**7A**	**7A**	**4.5A**	**0.1A**	**1.5A**
Max Load	**8A**	**8A**	**4.0A**	**0.2A**	**2.0A**
Peak load	**10A**	**10A**	**5.0A**	**0.5A**	**2.5A**
Max Output power	**35.0W**	**23.1W**	**54.0W**	**1.2W**	**7.5W**
Over All Reg. %	**+/-5%**	**+/-5%**	**Switched power**	**+/-5%**	**+/-5%**
Ripple & Noise	**50mVpp**	**50mVpp**	**Note 1**	**120mVpp**	**50mVpp**

Note 1. Regulation Condition

Regulation, ripple & noise of 12Vout are decided by switched power.

Note: 2. The maximum allowed ripple/noise output of the power supply is measured over a bandwidth of 0Hz to 20 MHz at the power supply output connectors. A 10uF electrolytic capacitor in parallel with a 0.1uF ceramic capacitor are placed at the point of measurement.

3.2 Ripple voltage circuit



3.3 Efficiency

88 % minimum at full load.

3.4 Remote on/off control

When the logic level "PS-ON" is low, the DC outputs are to be enabled.

When the logic level is high or open collector, the DC outputs are to be disabled.

4. PROTECTION

4.1 OVER LOAD PROTECTION

This power supply will be shutdown and latch on between 105% and 130% of rated power.

4.2 SHORT CIRCUIT PROTECTION

This power supply is capable of sustaining the application of a short circuit to ground for any duration. Meanwhile this power supply shall restart when the fault is removed and there shall be no damage to this power supply.

4.3 NO LOAD OPERATION

The power supply must be no damage when operating in no load and full input voltage.

4.4 OVER CURRENT PROTECTION ON INPUT

In order to avoid over current on input, fast blow fuse is build in.

5.0 TIMING

5.1 SIGNAL TIMING DRAWING

The figure 1 represents the timing characteristics of the power good signal. The timing relationship is shown as below:

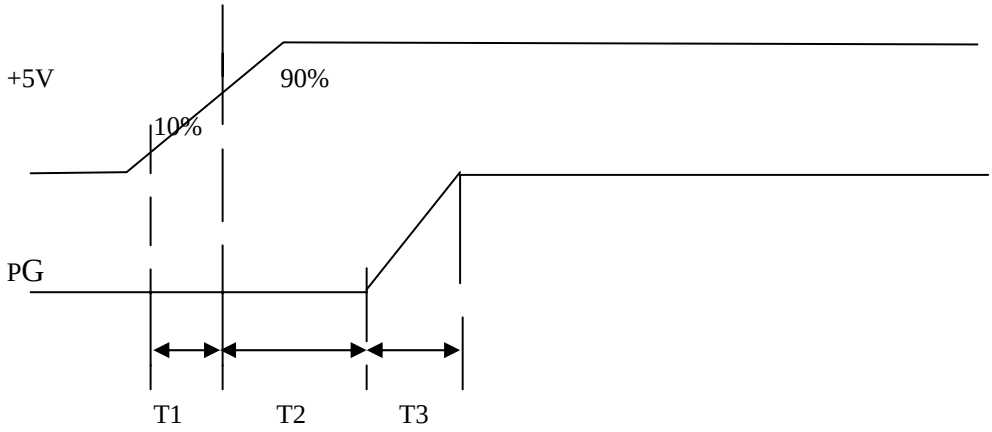


Figure 1.

$2mS \leqq T_1 \leqq 20mS$

$100mS \leqq T_2 \leqq 500mS$

$T_3 \leqq 10mS$

6.0 PHYSICAL CHARACTERISTICS

6.1 Size : 30 mm (W) x 156.3 mm (L) x 18 mm (H)

6.2 weight : 53.0g

7.0 Output DC Connectors

7.1 DC INTPUT CONNECTOR

Connector : DC input (CN1)

Pin	Signal
1	+12V
2	GND

7.2 DC OUTPUT CONNECTOR

Connector : DC output (CN2)

Pin	Signal	Pin	Signal
1	+3.3V	13	+3.3V
2	+3.3V	14	-12V
3	GND	15	GND
4	+5V	16	PS_ON
5	GND	17	GND
6	+5V	18	GND
7	GND	19	GND
8	+PG	20	-
9	+5Vsb	21	+5V
10	+12V	22	+5V
11	+12V	23	+5V
12	+3.3V	24	GND

8.0 Environmental requirement:

8.1 Temperature

8.1.1 Operating : 0°C to 60°C.

8.1.2 None – Operating : -20°C to 85°C

8.2 Relative Humidity

8.2.1 Operating : To 85 % relative humidity (non-condensing)

8.2.2 Non-Operating : To 95 % relative humidity (non-condensing)

9.0 MTBF

100K hours at 25°C operating.