

# picoPSU-150-XT

12V, 150Watt, 24pin ATX Power Supply

## Quick Installation Guide

Version 1.0a

P/N 120008

[www.short-circuit.com](http://www.short-circuit.com)

### Introduction

The picoPSU-150-XT is a small yet powerful and fully compliant ATX power supply designed to power a wide variety of motherboard from a single 12V regulated power source.

The picoPSU-150-XT is the only snap power supply solution for general purpose motherboards. Compatible with an entire range of mini-ITX, UATX or full size ATX motherboards the picoPSU-150-XT provides cool, silent power for system. The picoPSU-150-XT has many advantages over a regular power supply:

- Smallest 24 pin ATX PSU to date
- 100% silent operation
- Low heat dissipation with efficiency over 95%
- Plugs directly into the motherboard's power connector, no cable mess
- Solid Capacitor design, very long life design.
- 12V Aux power connector designed to support processors with TDP of 35 or 65Watts.
- 2<sup>nd</sup> HDD power harness connector.

## Quick installation Instructions

The picoPSU-150-XT has been specifically designed for the Mini-ITX form factor, thus eliminating the need for ATX power cables. It is also 1U compliant – height will not exceed 1U formfactor.

1) After the picoPSU module is snapped in, hook the hard drive power or floppy power to your floppy/hard drives. If more hard drives or floppy connectors are needed, use a HDD/floppy “Y” splitter cable.



*Fig 1.1 picoPSU-120 plugged into ATX connector.*

2) Connect a 12 VDC power adapter (or any 12V source) to the DC-to-DC connector, center pin / white wire is positive (+).

3) Turn on the PC using the motherboard ON/OFF switch

## Typical configuration

The picoPSU-150-XT has been tested with all mini-ITX board under virtually any disk/floppy/CDROM/PCI configuration. Additionally, the picoPSU-150-XT can power boards that require 4 pin 12V aux power connector to be used with processors with TDP ranging from 35 to 65 watts.

## Removing the picoPSU-150-XT

In order to remove the picoPSU you must release the power connector latch and then remove the unit. Gently lift the picoPSU out from the ATX connector by grabbing from the picoPSU PCB, not from components or the wire harness.

## Specifications, picoPSU-150-XT, 150Watts DC-DC ATX Power Supply

Power Ratings (max load = 150watts)

Volts (V)	Max Load (A)	Peak Load (A)	Regulation %
5V	6A	8A	+/- 1.5%
5VSB	1.5A	2A	+/- 1.5%
3.3V	6A	8A	+/- 1.5%
-12V	0.05A	0.1A	+/- 5%
12V	8A	10A	Switched input

### Precautions for operating this DC-DC converter:

- For fanless operation de-rate the output of the 3.3 and 5V rails by ~35% or ensure PSU surface temperature should not exceed 65C, whichever comes first.
- Combined and sustained output should not exceed 65% of total power or ensure PSU surface temperature should not exceed 65C, whichever comes first.
- Input current should not exceed 8A. For current higher loads, we suggest using a 2x2 mini-FIT JR as an input connector.
- Peak load for individual rails should not exceed 60 seconds.
- For long life operation, PSU surface temperature should not exceed 65C.

### Efficiency Ratings, 3.3 and 5V rail

CH1=5V	Efficiency (%)	CH2=3.3V	Efficiency (%)
1A	86%	1A	85%
3A	94%	3A	93%
5A	96%	5A	94%
8A	93%	8A	91%

**Input Requirements:** 12V regulated, min=2A, max = load dependent. Over-voltage shutdown will occur at ~13-13.5V. Do not operate this PSU from a car battery as unit requires

**Size:** 53mm(L) \* 20mm(W) \* 30mm (H) (1U compliant)

**Weight:** 60grams, including cable harness, 30 grams without cable harness.

**DC-Jack:** Female, panel mount, 2.5\*5.5\*10 mm.

**Connectors**

Main connector: 24pin mini-FIT JR type. Two 3.5" drive power connector (one ATA, one SATA). P4-12V wire harness.

**Overload protection**

Over load protection will be effected when either of the loads (+5V & +3.3V) exceeds > 150% Max Load.

**Turn-on Delay**

After turning on, at least 20 ms will be needed for the rise of +5VSB output voltage (measured from 10% to 95%) to reach its peak.

**Remote ON/OFF control**

Logic level is LOW - Output voltage is enabled (PS\_ON pin)

Logic level is HIGH - Output voltage is disabled (PS\_ON pin)

**Operating environment:** Temperature: -20 to 55 degree centigrade.

NOTE: For fanless operation, please ensure that the PSU body temperature, T(psu) does not exceed 65C. Higher temperatures are allowed, but MTBF could decrease. Maximum power supply body temperature T(psu) is 85C.

Relative Humidity: 10 to 90 percent, non-condensing.

**Efficiency, MTBF:** 95%. MTBF=100K hours at T(PSU) 55Celsius.

**Shipping and storage:** Temperature -40 to +40 degree centigrade. Relative humidity 5 to 90 percent, non-condensing

**Warranty**

1 Year Limited Warranty statement. Warranty is void if maintenance or calibration is performed by end-user or by use in conjunction with power modules not provided by short-circuit.com.

**Support**

Web Site: <http://www.short-circuit.com/>