

SPECIFICATION

产品规格书

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Model :MPT50-12V

Description: POWER SUPPLY SPECIFICATION

PREPARED BY 编写	CHECKED BY 审核	APPROVED BY 批准
彭瑶	江晓锋	詹星

深圳麦格米特电气股份有限公司

Shenzhen MEGMEET Electrical Co., Ltd

深圳市南山区高新区北区朗山路 13 号清华紫光科技园 5 层 A;B;C501-503;D;E
5th Floor, Tower A, B,C501-C503,D,E, Unis Inforport, No.13 Langshan Road, North Section,
Hi-Tech Industrial Park, Nanshan District, Shenzhen, PEOPLE'S REPUBLIC OF CHINA
Tel: (+86)0755-8660 0500 Fax: (+86)0755-8660 0999
E-mail: megmeet@megmeet.com; Web:www.megmeet.com

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1. Electrical Specification (电气规格)

1.1 Table 1 Input Electrical Characteristics (输入特性)

Input Voltage Range 输入电压	AC85V to AC264V
Nominal Voltage Range 标称输入	AC100V to AC240V
Frequency Range 频率范围	(50Hz or 60Hz)±5%
Input AC Current 输入电流	Max. 1.5A at AC115V input and full load Max. 0.8A at AC230V input and full load
Inrush Current (cold start) 冷启浪涌电流	<35A at AC230V input
Efficiency 效率	Typ. 84.5% at AC230V input and full load
Touch Current 接触电流	Less than 0.25mA (RMS)/3.5mA(RMS)
Input Fuse 输入保险	T3.15A 250V~

Note: When AC input voltage is under 100V,output should be reduced according to the derating curve. 交流输入电压低于 100V 时, 输出需降额使用, 参考降额曲线。

1.2 Output Electrical Characteristics (输出特性)

1.2.1 Table 2 Constant Voltage Output Specification (恒压输出规格)

Output Channel 输出通道	Output Rated Voltage 输出额定电压	Output Voltage Adjustable Range 输出电压可调范围	Line Regulation 线性调整率	Load Regulation 负载调整率	Min. Current 最小电流	Rated Current 额定电流 (Full Load)
+V	+12.0V	+10.2V~+13.8V	±0.5%	±0.5%	0A	4.2A

Note: When output voltage is adjusted exceeding 12V, the total power should not exceed 50.4W .
输出电压调节至 12V 以上时, 输出功率不得超过 50.4W。

1.2.2 Table 3 DC Output Ripple & Noise (输出纹波和噪声)

Output Channel	Ripple & Noise (Peak-peak, 峰-峰值)	
	Ta:25℃	AC230V Input and Full Load
+V	120mV	

Note: Ripple & Noise test 纹波和噪声测试

1) The Bandwidth of oscilloscope is set to 20MHz.

示波器带宽设置在 20 兆赫兹。

2) Use a 0.1uF ceramic capacitor in parallel with a 10uF electrolytic capacitor at output connector terminals for ripple & noise measurements.

输出端并联一个 0.1uF 的陶瓷电容和一个 10uF 的电解电容来测试纹波和噪声。

1.2.3 Table 4 Dynamic Response Of Output (输出动态响应)

Output Channel	Response Regulation of Output Voltage 输出电压响应调整率					
	Step Load	Slew Rate	Frequency Rang	Step Load	Slew Rate	Frequency Rang
	0.1A to 50% or 50% to Rating	0.2A/us	50Hz~ 100Hz	0.1A to Rating	0.2A/us	50Hz~ 100Hz
+V	±5%			±5%		

1.2.4 Table 5 Hold-Up Time (输出保持时间)

Output Channel	Hold-Up Time	
	AC230V Input	Full Load
+V	≥45 ms	

Note: Tested under room temperature.

常温下测得。

1.2.5 Table 6 DC Output Overshoot During Turn-On/Off (输出超调)

Output Channel	Overshoot voltage 超调电压 & Normal Input	
	Turn-on 开机	Turn-off 关机
+V	≤5%	≤5%

Note: All of dc output current from Min. to Rating. 测试时负载范围：最小到额定。

1.2.6 Table 7 Start Up Time (启动时间)

Output Channel	Start Up Time			
	AC115V Input	Full Load	AC240V Input	Full Load
+V	≤3s		≤3s	

Note: Tested under room temperature. 常温下测试。

1.2.7 Table 8 DC Output Voltage Rise Time (输出上升时间)

Output Channel	Rise Time			
	AC115V Input	Full Load	AC240V Input	Full Load
+V	≤50 ms		≤50 ms	

Note: The rise time measured is when the output voltages rise from 10% to 90% of specified output voltage observed on the channel waveform. Tested under room temperature.

上升时间为输出电压从 10% 上升到 90% 的时间。常温下测试。

1.3 Protection (保护功能)

1.3.1 Table 9 DC Output Over Current Protection (输出过流保护)

Output Channel	Over Current	Comments
+V	≥4.8A	Hiccup 保护后重启

Note: Tested under room temperature, nominal input voltage. 标称输入电压, 常温下测试。

1.3.2 Table 10 DC Output Short Circuit Protection (输出短路保护)

Output Channel	Comments
+V	Hiccup 保护后重启

1.3.3 Table 11 DC Output Over Voltage Protection (输出过压保护)

Output Channel	Over Voltage	Comments
+V	16.5V~19.8V	Shut Down 锁死保护, 上电重启

Note: Over Voltage Protection should be tested under Max. AC input voltage and Min. load.

过压保护测试应该在最大交流输入电压和轻载下测试。

2. Safety (安全)

2.1 Standards (标准)

The power supply should meet the following Standards:

电源安全满足下列标准:

- 1) IEC/EN62368-1
- 2) UL 62368-1
- 3) GB4943.1

The DC output circuit meets SELV. 直流输出端满足 SELV 电路要求。

2.2 Precaution Class for protection against electric shock (防电击保护措施类别)

Class I

2.3 Ingress Protection (防护等级)

IP20

2.4 Insulation (绝缘性能)

2.4.1 Table 12 Insulation Resistance (绝缘阻抗)

Input To Output	$\geq 100M\Omega$ (with DC500V at room temperature)
Input To GND	$\geq 100M\Omega$ (with DC500V at room temperature)
Output To GND	$\geq 100M\Omega$ (with DC500V at room temperature)

2.4.2 Table 13 Dielectric strength (绝缘强度)

Input To Output	AC3000V 50Hz 1minute $\leq 10mA$
Input To GND	AC1500V 50Hz 1minute $\leq 10mA$
Output To GND	AC500V 50Hz 1minute $\leq 10mA$

3. EMC (电磁兼容性)

3.1 EMI (电磁干扰)

The power supply should meet the following standards:

电源电磁干扰满足下列标准:

1) Conduction Emission (传导干扰度)

*EN55032 Class B

2) Radiated Emission (辐射干扰度)

*EN55032 Class B

3) Voltage Fluctuation and Flicker (电压波动和闪烁)

*IEC/EN61000-3-3

Note: 1. The power supply should be assembled in customer product to test for passing the above criterion. 电源需配合用户整机测试通过上述标准。

2. It can also meet the standards to connect “-V” to “GND”(see “Pin Connection” part), same as PELV circuit. 输出负接地时也要满足上述标准。

3.2 EMS（电磁抗扰）

The power supply should meet the following Standards:

电源电磁抗扰满足下列标准:

1) ESD（静电放电抗干扰度）

*GB/T17626.2

*IEC/EN61000-4-2

±6kV/±8kV Criterion A

2) RS（射频电磁场辐射抗扰度）

*GB/T 17626.3

*IEC/EN61000-4-3

10V/m,80MHz-1000MHz,1kHz AM 80% Criterion A

3) EFT（电快速瞬变脉冲群抗扰度）

*GB/T 17626.4

*IEC/EN61000-4-4

2KV/4KV(N-L/N-GND,L-GND),0.5KV/0.5KV(output to GND,between output cable) Criterion A

4) SURGE（浪涌（冲击）抗扰度）

*GB/T 17626.5

*IEC/EN61000-4-5

2kV/4kV Criterion A

5) CS（射频场感应的传导骚扰抗扰度）

*GB/T 17626.6

*IEC/EN61000-4-6

10V,0.1MHz-80MHz,1kHz AM 80% Criterion A

6) PFMF（工频磁场抗扰度）

*GB/T 17626.8

*IEC/EN61000-4-8

30A/M Criterion A

7) DIP（电压暂降抗扰度）

*GB/T 17626.11

*IEC/EN61000-4-11

>20ms@220Vac Criterion A

Note: The power supply should be assembled in customer product to test for passing the above criterion.需配合用户整机通过上述标准。

4. Environmental Requirement（工作环境）

4.1 Temperature（环境温度）

* Operating 工作温度: -20℃ to +70℃.

Note: 50~70°C referring to the derating curve. 50~70°C时需降额工作，参考降额曲线。
* Storage 存储温度: -40°C to +85°C.

4.2 Humidity (环境湿度)

- * Operating 工作: From 20% to 90% relative humidity (non-condensing).
- * Storage 存储: From 10% to 95% relative humidity (non-condensing).

4.3 Altitude (海拔高度)

- * Operating: Less than 5000m (适用于在海拔低于 5000 米条件下使用)
- * Storage: Less than 5000m (适用于在海拔低于 5000 米条件下储存)

Note: The output power should have a derating of 7%/1000m when operating altitude is higher than 2000m. 海拔高于 2000m 时，负载按 7%/1000 米降额。

4.4 Climates (气候要求)

- * For tropical climates (适用于热带气候)

4.5 Cooling Method (冷却方式)

- * Ventilation cooling . 风道自然冷却

4.6 Vibration (振动耐受)

- * 10-500Hz, 49m/s²(5G), 60 minutes each along X, Y and Z axis.

4.7 Shock (冲击耐受)

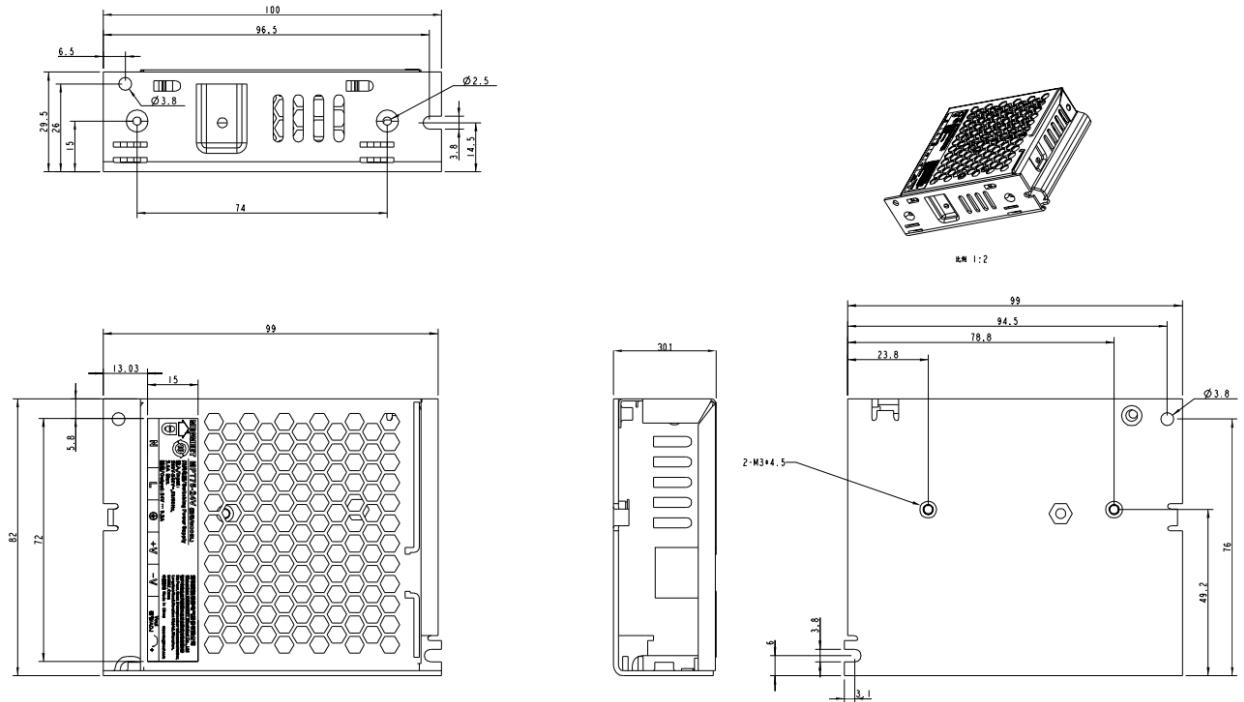
- * 294m/s² (30G), 11ms on 3 axes, total 18 times

4.8 Pollution Degree (污染等级)

- * PD2

5. Dimension (物理尺寸)

* 100 X 82 X 30.1mm (长 L * 宽 W * 高 H).
Mechanical Drawing



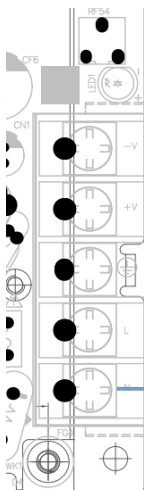
6. Weight (重量)

* 222g±5%

7. Pin Connection (连接器脚位定义)

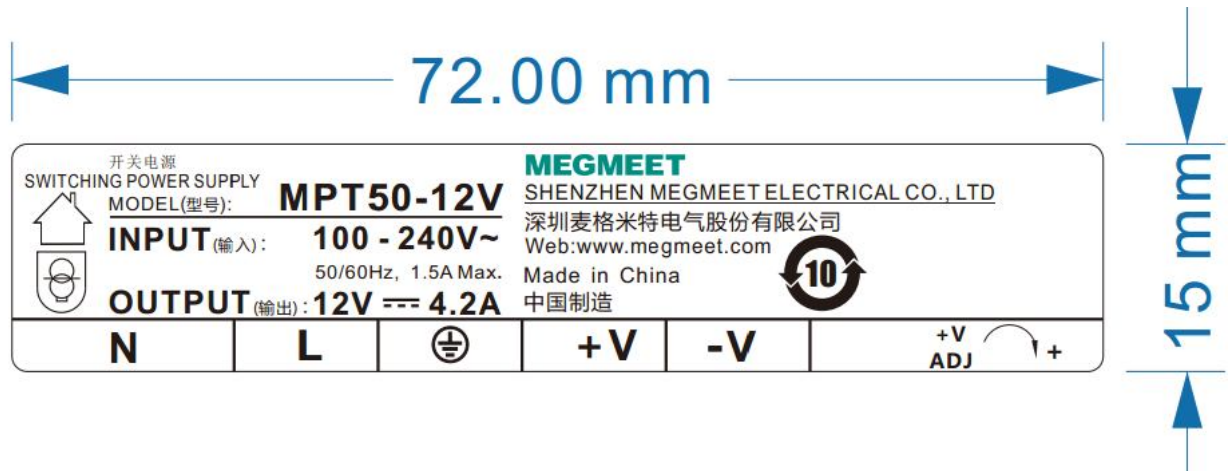
Table 14 CN1(5Pin)

NO.	Pin Connection	Function
①	N	AC INPUT NEUTRAL
②	L	AC INPUT LINE
③	GND	PROTECTIVE GROUNDING
④	+V	+V CHANNEL DC OUTPUT
⑤	-V	-V CHANNEL DC OUTPUT



CN1 Pin ① (Top
view 顶部视图)

8. Label (标签)



9. Package (包装)

TBD

10. Derating Curve (降额曲线)

