



## 目录

1 概述(Description).....	3
2 产品特点(Features).....	3
3 输入特性(Input Characteristics).....	3
4 输出特性(Output Characteristics).....	4
5 保护功能(Protection Function).....	5
6 环境要求(Environment Requirements).....	5
7 可靠性要求(Reliability Requirements).....	5
8 EMC 标准(EMC Standards).....	6
8.1 EMI 标准(EMI Standards).....	6
8.2 EMS 标准(EMS Standards).....	6
9 安规要求(Safety Requirements).....	6
9.1 安规标准(Safety Standards).....	6
10 结构参数(Mechanical Specifications).....	7
10.1 本体外观图(Mechanical Drawing).....	7
10.2 铭牌(Label).....	8
10.3 包装(Packaging).....	9

## 1 概述(Description)

本规格书详细定义 5V 2.5A AC-DC 适配器电气性能、结构性能及环境要求, 此款产品具有全球输入电压范围、低功耗、高效率、高可靠性、安全隔离等优点, 并且符合 RoHS 要求。

The document detail the electrical, mechanical and environmental specifications of 5V2.5A AC-DC adapter, This series features universal input voltage, low power consumption, high efficiency, high reliability, safer isolation, and meet the RoHS requirement.



## 2 产品特点(Features)

- 全球通用电压/Universal input Voltage: 90 - 264VAC, 50/60Hz
- 能效等级 DoE VI/DoE Level VI efficiency
- 过压、过流、短路保护/Over voltage、Over current、Short circuit protection
- 全封闭塑料外壳/Fully enclosed plastic case
- 2 极中式插头/2 pole China plug
- 小型插墙式封装/Small wall-mounted type

## 3 输入特性(Input Characteristics)

项目(Item)	工作条件(Operating Conditions)	Min.	Typ.	Max.	单位(Unit)
标称输入电压 (Nominal Input Voltage)		100	--	240	VAC
输入电压范围 (Operation Range)		90	--	264	VAC
标称输入频率 (Nominal Input Frequency)		--	50/60	--	Hz
输入频率范围 (Input Frequency Range)		47		63	Hz
输入电流 (Input Current)	输入 100VAC, 满载 100VAC input, full load	--	--	0.35	A

浪涌电流 (Inrush Current)	输入 115VAC 60Hz, 满载, 冷启动 115VAC 60Hz input, full load, cold start	--	--	30	A
	输入 230VAC 50Hz, 满载, 冷启动 230VAC 50Hz input, full load, cold start	--	--	60	A
平均效率 (Average Efficiency)	输入 115VAC 60Hz/230VAC 50Hz 115VAC 60Hz/230VAC 50Hz input	80.21	--	--	%
空载功耗 (No Load Power Consumption)	输入 115VAC 60Hz/230VAC 50Hz 115VAC 60Hz/230VAC 50Hz input	--	--	0.1	W

## 4 输出特性(Output Characteristics)

项目(Item)	工作条件(Operating Conditions)	Min.	Typ.	Max.	单位(Unit)
标称输出电压 (Nominal Output Voltage)		--	5	--	V
输出电压范围 (Output Voltage Range)	输入 90-264VAC, 额定负载 90-264VAC input, rated load	4.75	5	5.25	V
标称输出电流 (Nominal Output Current)		--	2.5	--	A
输出电流范围 (Output Current Range)	输入 90-264VAC 90-264VAC input	0	--	2.5	A
纹波&噪声* (Ripple and Noise)	输入 100-240VAC, 额定负载 100-240VAC input, rated load	--	--	200	mVp-p
电压精度 (Voltage Accuracy)	输入 90-264VAC, 额定负载 90-264VAC input, rated load	-5	--	+5	%
线性调整率 (Line Regulation)	输入 90-264VAC, 10%-100%负载 90-264VAC input, 10%-100% load	-1	--	+1	%
负载调整率 (Load Regulation)	输入 100-240VAC, 满载 100-240VAC input, full load	-5	--	+5	%
开机延迟时间 (Turn on delay time)	输入 100-240VAC, 满载 100-240VAC input, full load	--	--	3	s
关机维持时间 (Hold up time)	输入 115VAC/60Hz, 满载 115VAC/60Hz input, full load	10	--	--	ms
	输入 230VAC/50Hz, 满载 230VAC/50Hz input, full load	20	--	--	ms
上升时间 (Rise time)	输入 90-264VAC, 额定负载 90-264VAC input, rated load	--	--	80	ms
输出过冲 (Output over shoot)	输入 90-264VAC, 额定负载 90-264VAC input, rated load	-10	--	10	%

项目(Item)	工作条件(Operating Conditions)	Min.	Typ.	Max.	单位(Unit)
输出负载瞬态响应 (Output Load Transient Response)	输出电压在±5%，负载变化 25%-50%，50%-75%，斜率: 0.5A/us，频率: 50Hz-10KHz Output voltage range ±5%，load 25%-50%，50%-75%，slope: 0.5A/us，frequency: 50Hz-10KHz				

\*纹波和噪声的测试方法: 全负载, 输入 100-240VAC, 输出端并联一颗 0.1uF 的陶瓷电容和一颗 10uF 的电解电容, 在 20MHz 带宽下测量。

\*Ripple and noise are measured by 20MHz bandwidth; at full load, 100-240VAC input, output terminated with a 0.1uF ceramic capacitor and a 10uF electrolytic capacitor.

## 5 保护功能(Protection Function)

项目(Item)	Min.	Typ.	Max.	单位(Unit)	恢复特性/Recover characteristic
过流保护/ Over current protection	2.75	--	5.0	A	打嗝式, 可持续过流, 自恢复 Hiccup, Continuous, self-recovery
过压保护/ Over Voltage protection	5.5	--	9.0	V	打嗝式, 自恢复 Hiccup, self-recovery
短路保护/ Short circuit protection	--	--	--	A	打嗝式, 可持续短路, 自恢复 Hiccup, Continuous, self-recovery

## 6 环境要求(Environment Requirements)

项目(Item)	工作条件(Operating Conditions)	Min.	Typ.	Max.	单位(Unit)
工作温度 (Operating Temperature)		0	--	40	°C
存储温度 (Storage Temperature)		-25	--	70	
工作湿度 (Operating Humidity)		--	--	90	%RH
存储湿度 (Storage Humidity)		--	--	95	
海拔 (Altitude)		--	--	2000	m

## 7 可靠性要求(Reliability Requirements)

项目(Item)	参数/specification	备注/Note
寿命 (Lifetime)	2 年/2 years, 115Vac/230Vac	25°C

项目(Item)	参数/specification	备注/Note
平均故障间隔时间 (CMTBF)	≥30K hours, MIL-HDBK-217F (25°C)	
老化 (Burn-in)	35-40°C, 100% rated load, burn-in 2 hours	
跌落 (Drop in)	1.0m/6 次/硬木板 1.0m/6times/plank	

## 8 EMC 标准(EMC Standards)

### 8.1 EMI 标准(EMI Standards)

测试项目 (Test Item)	国际标准 (IEC Standards)	性能标准 (Performance Criterion)
辐射(RE)	EN55032	CLASS B
传导(CE)	EN55032	CLASS B

### 8.2 EMS 标准(EMS Standards)

测试项目 (Test Item)	实验规格参数 (Test Specification)	国际标准 (IEC Standards)	性能标准 (Performance Criterion)
静电放电(ESD)	Contact :4KV / AIR :8KV	IEC61000-4-2	perf. Criteria B
辐射抗扰度(RS)	IEC61000-4-3 3V/m	IEC61000-4-3	perf. Criteria A
传导骚扰抗扰度(CS)	IEC61000-4-6 3Vrms	IEC61000-4-6	perf. Criteria A
浪涌抗扰度(SURGE)	±1KV(DM), ±2KV(CM)	IEC61000-4-5	perf. Criteria B

## 9 安规要求(Safety Requirements)

项目(Item)	工作条件(Operating Conditions)	Min.	Typ.	Max.	单位/Unit
绝缘电压 (Isolation Voltage)	输入-输出, 测试时间 60s, 漏电流小于 5mA Input-output, Test 1 minute, leakage current<5mA	3000	--	--	VAC
绝缘电阻 (Hi-pot)	输入-输出, 绝缘电压 500VDC Input-output, add 500Vdc test voltage	100	--	--	MΩ
漏电流 (Leakage current)	240Vac input	--	--	0.25	mA

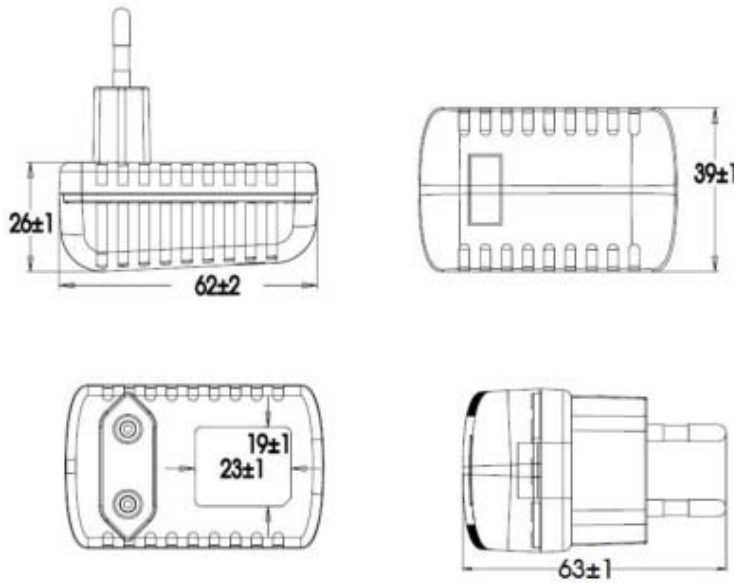
## 9.1 安规标准(Safety Standards)

应用领域/ Application fields	标准/Standards	状况/Status	备注/Note
IT	EN60950	通过/Approved	
AV	EN60065	符合/Meet	
Home appliances	EN61558-2-16	符合/Meet	

## 10 结构参数(Mechanical Specifications)

### 10.1 本体外观图(Mechanical Drawing)

项目(Item)	参数/specification
外壳材料(Casing Material)	PC,120°CUL94V-0
颜色(Color)	黑/Black
封装尺寸(Dimension)	(L)62.00mm*(W)39.00mm*(H)26.00mm
重量(Weight)	55g(Typ.)
冷却方式(Cooling Method)	自然空冷/Free air convection



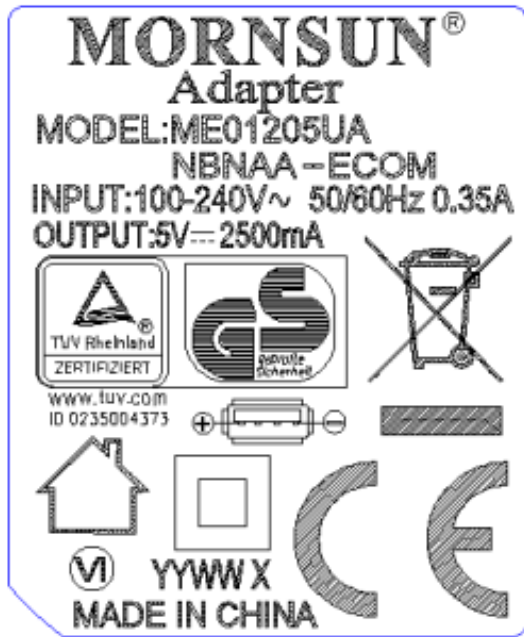
备注/Note:

未注公差/No display tolerance:  $\pm 0.5$

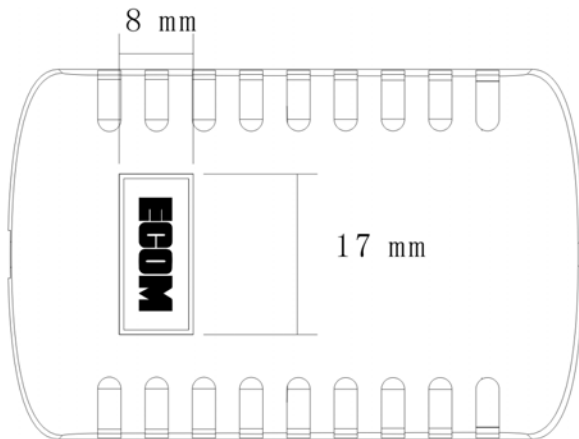
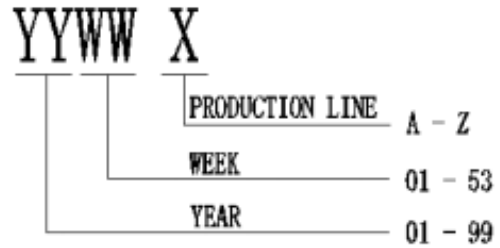
单位/Unit: mm



10.2 铭牌(Label)



镭雕于底壳



镭雕于面壳

材质/Material: 镭射/Laser engraving

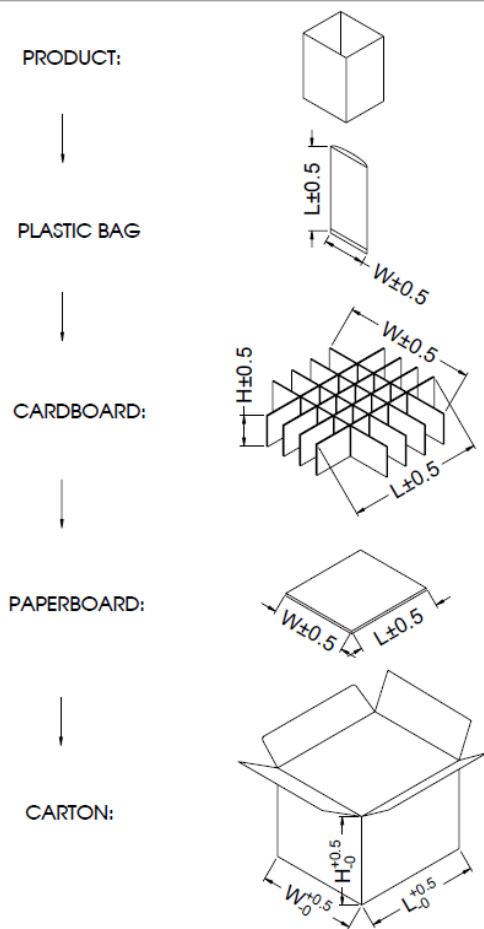
颜色/Color: 本色/originally

公差/Tolerance: ±0.5mm

环保/Hazardous Substances: RoHS



## 10.3 包装(Packaging)



## DIMENSION(UNIT: cm)

	L	W	H
Plastic Bag	20	13.8	
Cardboard	44.9	37.9	4.2
Paperboard	45	38	
Carton	46	39	28.5

## PACKING METHOD

Paperboard Placement Method	Put A Paperboard Over And Under The Products Of Each Layer, Total 7pcs.
Packing Method	25PCS/LAYER X6LAYERS
Q' TY	150PCS
N.W./PC	57.5g
G.W./Carton	10.7Kg

## 备注/Note:

1. 存储条件/Storage condition:  
温度/Temperature:  $-10 \sim +60^{\circ}\text{C}$ ;  
相对湿度/Relative humidity: 30%~80%RH.
2. 存储周期: 6个月。/Storage period: 6 months.
3. 抗静电剂: 无要求。/Antistatic: No requirement.

## 备注:remarks:

1.产品涉及法律法规: 见“产品特点”、“EMC 特性”、“安规标准”;

Products which involved laws and regulations: please see "product features", "EMC characteristics," safety standards "

2.我司产品报废后需按照 ISO14001 及相关环境法律法规分类存放, 并交由有资质的单位处理;

Our products need to be scrapped and classified storage according to ISO14001 and related environmental laws and regulations, this is requested to be handled by qualified institutions;

3.若产品不在要求负载范围内工作, 则不能保证产品性能均符合本规格书中所有性能指标;

If the product is not operated within the specified load, there is no guarantee that product performance can perform with all the performance indicators in this specification;

4.除特殊说明外, 本规格书所有指标都在  $T_a=25^{\circ}\text{C}$ , 湿度 $<75\%RH$ , 标称输入电压和输出额定负载时测得;

Unless otherwise stated, all specifications in this specification are measured at  $T_a = 25^{\circ}\text{C}$ , humidity  $<75\% RH$ , specified input voltage and output rated load;

5.我司可提供产品定制, 具体情况可直接与我司技术人员联系;

Customized products available, please contact our technical staff directly for the confirmation of specific details

## 广州金升阳科技有限公司

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