# MEI SHENG KANG POWER TECHNOLOGY( HK ).,LTD SPECIFICATION FOR APPROVAL

# **AC/DC POWER ADAPTER**

CUSTOMER SPEC: INPUT 100-240V AC 50/60HZ OUTPUT 5V 1A

CUSTOMER PART NO:

MSK PARTNO: <u>MSK-W05-01</u>

SAMPLE NO:\_\_\_\_\_\_DATE: 2006-05-18

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	SWITCHING POWER SUPPLY SPECIFICATON ( CLASS B )		
MSK POWER TECH(HK) LIMITED	MSK TECH P/N:	CUSTOMER P/N:	
美盛康电源科技(香港)有限公司	MSK-W05-01		
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## 1 GENERAL

#### Description

This specification defines the performance characteristics for a class II adapter, single-phase 12W. single output level power supply. simple design philosophy. overload latch-off protection during either(a) specified power threshold requirements or (b) short circuit condition.

Reliability level of 10-50K hours MTBF and 0.6% annual field failure rate@25°C.

DC output voltage must be safe extra low (SELV) and limited power as defined by IEC 60950 3rd edition. The maximum room ambient temparature, as mentioned in clause 1.4.12 of IEC 60950 3rd edition, for the external power supply is  $40^{\circ}$ C.

Cooling: Natural convection/fan convection.

## 2 INPUT REQUIREMENTS

#### Input conditions

The supply shall operate over the voltage ranges as follows:

Rated input Voltage	100-240V AC	
Operating range	90-264V AC	
Rated input frequency	50/60HZ+/-3HZ	
Rated input current	0.09A Max	
Maximum input power	7.1W	
Input current (No Load)	≦10MA	
Power consumption (No Load)	0.30W Max	
Primary current protection	An adequate internal fuse on the AC input line is provided	
Configuration	2 Conductor	

#### ACinrush current

Peak inrush current shall be limited to 60A for a cold start. Under both cold and warm start conditions, there shall be no immediate damage or long-term impact on the reliability of the supply. The conformance test for this requirement shall be performed at +12% of the rated input voltage. Voltage and current waveforms will be observed on an oscilloscope following closure of the external power switch. Switch closure will be repeated until the waveforms show closure coincident with a voltage peak. The current measured during this occurrence will be defined as the peak inrush current.

# 3 OUTPUT REQUIREMENTS

Nominal DC output voltage	+5.0V
Minimum load current	0.01A
Rating load current	1A

Peak load current	
Rating output power	5W
Line regulation	The line regulation is less than $\pm 5\%$ while measurin at rated load and $\pm 10\%$ of input voltage changing.
Load regulation	The load regulation for +5.0V is less than $\pm 5\%$ at measured output load from 10% to 100% rated load.
Peak load regulation	The peak load regulation for +5.0V is less than, a measured output load from 30% to 100% rated load.
Ripple & noise	At 20MHZ, output parallel with a 100UF ceramic capacitor and a 10UF electrolytic capacitor to ground temparature at 25°C, nominal AC input voltage.
	70% Minimum
Switching efficiency	At nominal input voltage and full load
Turn on delay time	2000 MS at nominal input AC voltage and full load

Rise time	The supply shall have a start-up rise time of less than 20MS to rise to within regulation limits for all DC output	
Hold up time	10MS minimum at nominal input AC voltage and full load	
Output over-shoot	Less than 8% of nominal voltage value	
Temparature coefficient	Output voltage temparature coefficient $\pm$ 00.5%/°C	
LED indication function	No Available	
Protection function	Available	
Over-voltage protection	16V max, the output voltage shall be clamped by internal protection æner	
Short-circuit protection	The adapter will not be damaged and with auto recovery function by short the DC output to ground	
Over-current protection	The power unit will be protected when output power at 110-200% of all rated DC output	

#### 4 MECHANICAL

Enclosure and layout Plastic case: Weight: <u>65</u>G Max Dimension: 76\*42\*29 mm Color: black Input and output configuration Input pin: EU pin Output connector: DC plug type 5.5\*2.1\*12 Polarity: center + Cord 1.2m VW-1 2468 80°C 300V 22AWG 2C Black + White (core) (No lead)

## **5 REGULATORY COMPLIANCE**

Safety requirement and certificates

Regulatory standard

The power unit will comply the following international regulatory standards

Safety authority	Country	Certified status	standards
UL	The united states		UL-60950
CSA	Canada		ETL-60950
TUV/GS	German	Pass	TUV/VDE-EN60950
СЕ	Europe	Pass	CE Mark
PSE	Japan		J-60950
EK	South korea		EK-60950
CCC	China	pass	GB4943
UK	Britain		EN60950

Additionalsafety requirements

Dielectric withstand voltage, primary input AC short to secondary output DC short:1,500V AC, 5MA,

1 Minute.

Insulation resistance, input to output:10M $\Omega$  at 500 V DC.

Reinforced insulation system, primary to ground and primary to secondary.

The leakage current will not exceed 0.25MA.

## 6 ENVIRONMENT REQUIREMENTS

Temparature

Operating: between 0  $\,^\circ\!\mathrm{C}\,$  and 40  $\,^\circ\!\mathrm{C}\,$ 

Non-operating: between-20  $\,\,^\circ\!\mathrm{C}\,$  and +80  $\,\,^\circ\!\mathrm{C}\,$ 

Hum id ity

Operating: between 10% and 90%

Non-operating: between 10% and 90%









