



a seacomp company

SPECIFICATION FOR APPROVAL

MODEL NUMBER	HDP05-MD05010U
PART NUMBER	HDP05-MD-BUSB-4
DESCRIPTION	I.T.E. & MEDICAL POWER SUPPLY BLACK
CUSTOMER / PROJECT CODE	MED-01
REVISION	A1 (Preliminary)
DATE	August 28, 2018

CUSTOMER APPROVAL	DATE
SEACOMP ENGINEERING APPROVAL	DATE

HDP Power – a SEACOMP company
2546 Gateway Road
Carlsbad, California 92009

Tel: 1.760.438.9600
Email: sales@seacomp.com
Website: www.hdp-power.com



MODEL NUMBER	HDP05-MD05010U	PAGE	1 of 17
PART NUMBER	HDP05-MD-BUSB-4	REVISION	A1 (Pre)
DESCRIPTION	I.T.E. & MEDICAL POWER SUPPLY BLACK	DATE	Aug 28, 2018

Contents

Contents	1
Revision History	2
1 Scope	3
2 Quality Requirements	3
2.1 Product Specific Quality Requirements	3
2.2 General Quality Requirements	5
3 Electrical Characteristics	7
3.1 Input	7
3.2 Output	7
3.3 Connector	8
4 Cosmetic	9
4.1 Surface Definitions	9
4.2 Inspection Conditions	9
4.3 Cosmetic Defect Definitions	10
4.4 Size / Weight	12
4.5 Assembly Drawing	13
5 Electromagnetic Compatibility	14
6 Labeling	15
6.1 Labeling the Device	15
6.2 Label Drawing	15
7 Packaging	16
7.1 Drawing	16
7.2 Packaging Test	17
8 Warranty	17

MODEL NUMBER	HDP05-MD05010U	PAGE	3 of 17
PART NUMBER	HDP05-MD-BUSB-4	REVISION	A1 (Pre)
DESCRIPTION	I.T.E. & MEDICAL POWER SUPPLY BLACK	DATE	Aug 28, 2018

1 Scope

The device is a 5-watt AC to DC adapter designed to provide a constant power source for electrical products. This adapter is certified for both medical and informational technology equipment (ITE) applications.

2 Quality Requirements

2.1 Product Specific Quality Requirements

2.1.1 Mechanical / Electrical Requirements

2.1.1.1 Paint and Print Test

In accordance with EN 60068-2-70

The printings have to withstand the testing procedures without any restrictions.

Test liquid	Mineral oils (example: Baby oil)
Wiping cycles	1,000
Contact pressure	1N ±0.2N

2.1.1.2 Mechanical and Electrical Reliability

All electrical contacts and mechanically moving parts have to withstand a stress test of at least 3,000 simulated connecting cycles without any damage. After the test, the device must have 100% functionality. Connectors must comply with the manufacturer's requirements or relevant standards at minimum.

2.1.1.3 Cable Tension and Flex

All cable joints and strain relief points have to pass the following:

Static load:	5Kg / 1 min at 0 degree and at 90 degree angles
Flex test:	+/- 60 degree bending angle 250gm at 20cycle / minute with a minimum speed of 1000 cycles.

2.1.1.4 Drop Test

This test requires the device to be dropped from a height of 1 meter onto a concrete floor. The drop should cover all surfaces including the 2 edges and all 4 corners. After the test, the device should have 100% functionality. There should not be any cracks, breaks or damage to any surface or have any loose internal components. Additionally, the ultrasonic weld joint should still be intact with minimum 80% coverage.

2.1.1.5 Enclosure Crush Test

This test applies a uniformly distributed weight of 250 Newtons on all surfaces for 5 seconds per surface. There should be no physical damage or effect on the products performance (i.e. operating folding AC blade, easy insertion of international adapters, snug USB connector fit).

2.1.1.6 Cable Burn Test (to be tested by safety lab)

In accordance with DIN 75200

Burn down speed	max. 50 mm/min
-----------------	----------------

UL rated cable with UL file is an acceptable replacement for this test. Cable to be VW-1 rated.

MODEL NUMBER	HDP05-MD05010U	PAGE	4 of 17
PART NUMBER	HDP05-MD-BUSB-4	REVISION	A1 (Pre)
DESCRIPTION	I.T.E. & MEDICAL POWER SUPPLY BLACK	DATE	Aug 28, 2018

2.1.2 Climate Requirements

2.1.2.1 Temperature Range

Full Functionality	0°C up to +50°C
Storage Temperature	-20°C up to +85°C

2.1.2.2 Thermal Shock (operational)

Low Temperature	0°C (AC/DC)
High Temperature	50°C (AC/DC)
T / t	15°C/min
Cycle Duration	1 hour
Number of Cycles	10
Mode of Operation	Minimum 75% full load
Requirement	100% functionality after test, without any damages or physical change

2.1.2.3 Thermal Shock (non-operating)

Low Temperature	-20°C
High Temperature	+85°C
T / t	15°C/min
Cycle Duration	1 hour
Number of Cycles	10
Mode of Operation	Switched off
Requirement	100% functionality after test, without any damages or physical change

2.1.2.4 Thermal Aging

Temperature	-20°C and +85°C
Duration	96 hours at each temperature
Mode of Operation	Power off
Requirement	100% functionality after test, without any damages or physical change

2.1.2.5 Humidity (non-condensing)

Temperature	+45°C
Humidity	95%
Duration	96 hours
Mode of Operation	Power up no load
Requirement	100% functionality after test, without any damages or physical change

2.1.2.6 Humidity (condensing)

Upper Temperature	+45°C
Lower Temperature	+25°C
Humidity	95%
Test Cycle	5°C / max ramp rate
Duration	96 hours
Number of cycles	6
Mode of Operation	Power up no load
Requirement	100% functionality after test, without any damages or physical change

MODEL NUMBER	HDP05-MD05010U	PAGE	5 of 17
PART NUMBER	HDP05-MD-BUSB-4	REVISION	A1 (Pre)
DESCRIPTION	I.T.E. & MEDICAL POWER SUPPLY BLACK	DATE	Aug 28, 2018

2.1.2.7 Salt Spray

Follow ASTM B117 standard with the possible exceptions listed below.

Temperature	35°C + 1.1 / - 1.7°C
Salt Solution	5%+/-1 Salt solution (NaCl) in Distilled or D1193 Type IV water
PH	6.5 - 7.2
Fog Rate	1m - 2 mL / hr / 80sq.cm
Duration	24 hours

2.2 General Quality Requirements

2.2.1 Product Related Requirements

2.2.1.1 General Appearance

Follows cosmetic requirements listed in Section 4 of this specification.

2.2.1.2 Emissions

The device must not produce any nuisance or unhealthy smell. A certificate must be made available proving the use of harmless materials.

2.2.1.3 Product Safety

The product has to comply with the relevant requirements listed in IEC 60950 (ITE) and IEC 60601 (medical).

Normal usage of the product must not result in any danger. In particular, any broken component parts, including electric components, may not result in any risk or danger of injury to the user. This is to be proven by a risk analysis during the product's development phase. Any potential hazard has to be indicated clearly in the user manual.

During normal use at an ambient temperature of 25°C, the housing (made of synthetic material) may warm up by 50K. Therefore, the maximum temperature of the parts could be as high as 75°C.

Individual "Hot Spots" (maximum size of 2 cm²) is acceptable if they are not located in the grip area. A warm up by 60K is acceptable in these "Hot Spots." Therefore, the maximum temperature of these parts could be 85°C.

For both normal use and "Hot Spot" instances, the housing must not exceed the maximum temperature of the applied synthetic.

When using tantalum capacitors, the effects of a potential explosion must be reduced to prevent any hazard to the user's health.

Protective actions against confusing the poles of the electric connectors have to be taken for any internal parts or connectors with specific polarity.

Transportation, storage, and operation of the adapter must not create any hazard, personal injury or any material damage. This is guaranteed through the controllable quality of workmanship and material used.

It must be guaranteed that after contact with natural oils, the housing material's performance does not result in any dangerous situations to the customer.

MODEL NUMBER	HDP05-MD05010U	PAGE	6 of 17
PART NUMBER	HDP05-MD-BUSB-4	REVISION	A1 (Pre)
DESCRIPTION	I.T.E. & MEDICAL POWER SUPPLY BLACK	DATE	Aug 28, 2018

2.2.1.4 Recycling and Environmental Compatibility

Must comply with RoHS and REACH.

Quality Level, (AQL)

In accordance with DIN ISO 2859 Part 1

General test-level	II
Critical defects	AQL 0
Major defects	AQL 0.4
Minor defects	AQL 0.65

2.2.2 Supplier Related Requirements

2.2.2.1 Demonstration of Quality

The supplier is obliged to maintain a quality assurance system which covers R&D and production specific items. This system must meet the requirements of ISO 9000-2008. A quality assurance plan (QA plan) is required for a project-specific proof of quality-assuring measures. The plan should be made available and presented upon request.

For the development phase, the QA plan needs to define milestones as proof of the reliability prognoses. The development results and the release by the customer need to also be included in this plan.

For the production phase, the QA plan has to focus on the detailed verification of all the planned QA steps from component procurement to delivery. Any acceptance or error criteria to be applied to the QA plan must meet the process capability index as defined in this specification.

2.2.2.2 Process Assurance

The quality capability has to be proven by a process capability of $C_{pk} > 1.33$ and must be documented by a continuous monitoring of the production process. Parameters relevant for this process capability will be marked separately in the product's construction documents.

2.2.2.3 Reliability

The probability of failure and the return of devices for repair must be less than 1% per year. The failure rates have to be predicted using MTBF calculations. The MTBF calculations have to be proven and available to the customer upon request.

A minimum of 100k MTBF must be achieved under nominal load and 25°C ambient temperature.

MODEL NUMBER	HDP05-MD05010U	PAGE	7 of 17
PART NUMBER	HDP05-MD-BUSB-4	REVISION	A1 (Pre)
DESCRIPTION	I.T.E. & MEDICAL POWER SUPPLY BLACK	DATE	Aug 28, 2018

3 Electrical Characteristics

3.1 Input

- 3.1.1 Input Voltage Nominal: 120/220 VAC
- 3.1.2 Input Voltage Range: 90 ~ 264 VAC
- 3.1.3 Input Frequency Range: 50 / 60Hz (47 ~ 63 Hz)
- 3.1.4 Inrush Current: 30A peak at 240AC input < 200us
- 3.1.5 Maximum Input Current: 0.15A measured at 5 Watts
Vin = 100VAC & 1A load
- 3.1.6 Efficiency: CEC-VI
- 3.1.7 Turn-on Time: < 60ms
- 3.1.8 Input Fuse: 2A / 250VAC standard blow
- 3.1.9 AC Input Receptacle Type: Folding US AC blades
- 3.1.10 Isolation Voltage: Meet IEC 60950, IEC 60601
- 3.1.11 AC Leakage Current: .15mA measured 264V & 63Hz
- 3.1.12 Dielectric withstands Voltage: 3000VAC 60sec or 4242VDC 60 sec with no breakdown;
Earth leakage at 110% of rated voltage should be < 10mA
- 3.1.13 Input Power (No Load): < 0.1W

3.2 Output

- 3.2.1 DC Output: 5.00 VDC
- 3.2.2 Output Current: 1A
- 3.2.3 Load Regulation: 5% VDC
- 3.2.4 Ripple and Noise: 100mVp-p
- 3.2.5 Turn-on Overshoot: < 10%
- 3.2.6 Over-current Protection: < 20% of Imax
- 3.2.7 Short Circuit Protection: Protected for continuous short circuit
- 3.2.8 Reset After Shutdown: Yes
- 3.2.9 Thermal Stability Time: 30 min
- 3.2.10 Peak Load Duration: Indefinite (OCP will prevent overload)

MODEL NUMBER	HDP05-MD05010U	PAGE	8 of 17
PART NUMBER	HDP05-MD-BUSB-4	REVISION	A1 (Pre)
DESCRIPTION	I.T.E. & MEDICAL POWER SUPPLY BLACK	DATE	Aug 28, 2018

3.3 Connector

Option A: USB-A connector with Bridged (D+ and D- shorted) or MFI configuration connection.



4 Pin Male "A" Connector on the cable



4 Pin Female "A" Connector on the computer



4 Pin "B" Male Connector on cable



4 Pin "B" Female Connector on computer

5V / 1A MFI configuration		
ID Pin	D-	D+
Spec (V)	2.68	2
Tolerance (V)	2.44-2.89	1.84-2.16
Non MFI Bridged version		
ID PIN	D/D shorted	

Pin	Name	Description	Color
1	VCC	+5 VDC	Red
2	D-	Data -	White
3	D+	Data +	Green
4	GND	Ground	Black

MODEL NUMBER	HDP05-MD05010U	PAGE	9 of 17
PART NUMBER	HDP05-MD-BUSB-4	REVISION	A1 (Pre)
DESCRIPTION	I.T.E. & MEDICAL POWER SUPPLY BLACK	DATE	Aug 28, 2018

4 Cosmetic

4.1 Surface Definitions

Level A is the primary surface. For example, the front face of the adapter.

Level B is a secondary surface that may be viewed periodically by the end user, but is not in direct view during normal use. For example, the Cable (AC and DC), the sides of the housing, and the back of the housing.

Level C surfaces are not visible by the end user. For example, the inaccessible inside surfaces of the product.

4.2 Inspection Conditions

4.2.1 Inspection Method: Light source: Cool white fluorescent lamp 750 – 1000Lux

4.2.2 Viewing Distance: 30cm

4.2.3 Viewing Angle: 0 – 90 Degrees

4.2.4 Part Rotation Angle During Inspection:
 Vertical Rotation Angle 180 Degrees
 Horizontal Rotation Angle 360 Degrees

4.2.5 Viewing Time:
 5 seconds total for all surfaces

4.3 Cosmetic Defect Definitions

Defect	Level A	Level B	Level C
Scratches, Dents, and Burrs (see Note 1)	Single defect not exceeding total surface area 5.50 mm ²	Two defects not exceeding total surface area 11 mm ²	Accept if it does not affect fit or function
Hairline Scratches, Gate Blush/Trim, Stress	Use 25% Contrast Standard to accept or reject for visible hairline scratches with depth of < 0.1 mm (total surface area not to exceed limits set in surface scratch below)		
Surface Scratches, Scuffs (see Note 1)	Single defect not exceeding total surface area of 5.7 mm ²	Two defects not exceeding total surface area 25 mm ²	Accept if it does not affect fit or function
Chips, Nicks, Cracks or Broken Features	Not Allowed		
Flash, Burrs, Sink Marks (see Note 2)	Not Allowed	Less than 0.5mm	Accept if it does not affect fit or function
Discoloration	Follow color samples		
Parting Lines	See diagram		
General Stains (not permanent)	Not allowed		
Rust	Not allowed		
Printing	No missing text or mistakes allowed. All letters should be visible. Refer to approved sample.		

Note 1:

Area called out in these fields are calculated based on limit samples. The values are calculated based on average area covered by the features.

Note 2:

DC over-mold flash marks have to be signed off on samples and provided as acceptable limits.

MODEL NUMBER	HDP05-MD05010U	PAGE	11 of 17
PART NUMBER	HDP05-MD-BUSB-4	REVISION	A1 (Pre)
DESCRIPTION	I.T.E. & MEDICAL POWER SUPPLY BLACK	DATE	Aug 28, 2018

Parting Line

Translation:

1. production for all components shall not be started before confirmation by HDP engineer.
2. Dimensions marked as (D) are HDP control dimensions (to be inspected by IQC).
3. Dimensions marked as (C) are customer control dimensions (to be inspected by IQC).
4. Dimensions unmarked please refer to 3D CAD.
5. Material should comply with ROHS standard.
6. Maximum draft angle is 1° unless otherwise notified.
7. diameters unmarked in drawing are 0.2mm.
8. Material: _____ (weight: $\pm 5\%$)
9. Surface treatment: _____

A

B

Tolerance Gap from side A to B 0.4mm

REV.	DESCRIPTION	BY	DATE	ECON NO.
①	初版发行	YF.Zhou	2018.08.28	
②				
③				
④				

Third Angle Projection	The drawing is the property of HDP corporation. It is confidential and not to be distributed outside the company without the written permission of the company.	Scale: 1:1	Size: A4	Unit: MM	Checked By:	Approved By:
		Sheet: 1/1			Drawn By:	Version NO.:
		2015.05.28	周玉刚	2015.05.28	Official Issue	

Dimension	Tolerance					HDP Model NO.	Part NO.	Part Name
	F	G	H	J	K			
0-8	±0.05	±0.1	±0.1	±0.2		HDP	MD-01	无T型指示
8-25	±0.05	±0.1	±0.15	±0.2				
25-50	±0.1	±0.2	±0.25	±0.3				
50-80	±0.15	±0.3	±0.4	±0.5				
80-120	±0.2	±0.4	±0.5	±0.6				
120-180	±0.3	±0.5	±0.6	±0.8				
180-250	±0.4	±0.6	±0.8	±1.0				
250-350	±0.5	±0.8	±1.0	±1.2				
350-500	±0.6	±1.0	±1.5	±1.7				
500-700	±0.8	±1.5	±2.0	±2.5				
700-1000	±1.0	±2.0	±3.0	±3.0				

MODEL NUMBER	HDP05-MD05010U	PAGE	12 of 17
PART NUMBER	HDP05-MD-BUSB-4	REVISION	A1 (Pre)
DESCRIPTION	I.T.E. & MEDICAL POWER SUPPLY BLACK	DATE	Aug 28, 2018

4.4 Size / Weight

Product size should be 41.75W X 60.25L X 18.45H mm. Product weight is 40gm (weight does not include international adapters).

Translation:

1. production for all components shall not be started before confirmation by HDP engineer.
2. Dimensions marked as ① are HDP control dimensions (to be inspected by IQC).
3. Dimensions marked as ② are customer control dimensions (to be inspected by IQC).
4. Dimensions unmarked please refer to 3D CAD.
5. Material should comply with ROHS standard.
6. Maximum draft angle is 1° unless otherwise notified.
7. diameters unmarked in drawing are 0.2mm.
8. Material: _____ (weight: $\pm 5\%$).
9. Surface treatment: _____.
10. Angular measurements: (+) counter-clockwise direction.

Third Angle Projection								
It is intended for the manufacture of all dimensions not marked for the sake of size of the dimension. Any dimension is to be taken as indicated unless otherwise provided in the full extent of the drawing.	Scale: 1:1 Unit: MM	Checked By: _____ Approved By: _____	Dimension: F G H J 0-8 10.05 10.1 10.1 10.2 8-25 10.05 10.1 10.1 10.2 25-30 10.2 10.1 10.2 10.1 30-35 10.2 10.1 10.2 10.1 35-40 10.2 10.1 10.2 10.1 40-45 10.2 10.1 10.2 10.1 45-50 10.2 10.1 10.2 10.1 50-55 10.2 10.1 10.2 10.1 55-60 10.2 10.1 10.2 10.1 60-65 10.2 10.1 10.2 10.1 65-70 10.2 10.1 10.2 10.1 70-75 10.2 10.1 10.2 10.1 75-80 10.2 10.1 10.2 10.1 80-85 10.2 10.1 10.2 10.1 85-90 10.2 10.1 10.2 10.1 90-95 10.2 10.1 10.2 10.1 95-100 10.2 10.1 10.2 10.1 100-105 10.2 10.1 10.2 10.1 105-110 10.2 10.1 10.2 10.1 110-115 10.2 10.1 10.2 10.1 115-120 10.2 10.1 10.2 10.1 120-125 10.2 10.1 10.2 10.1 125-130 10.2 10.1 10.2 10.1 130-135 10.2 10.1 10.2 10.1 135-140 10.2 10.1 10.2 10.1 140-145 10.2 10.1 10.2 10.1 145-150 10.2 10.1 10.2 10.1 150-155 10.2 10.1 10.2 10.1 155-160 10.2 10.1 10.2 10.1 160-165 10.2 10.1 10.2 10.1 165-170 10.2 10.1 10.2 10.1 170-175 10.2 10.1 10.2 10.1 175-180 10.2 10.1 10.2 10.1 180-185 10.2 10.1 10.2 10.1 185-190 10.2 10.1 10.2 10.1 190-195 10.2 10.1 10.2 10.1 195-200 10.2 10.1 10.2 10.1 200-205 10.2 10.1 10.2 10.1 205-210 10.2 10.1 10.2 10.1 210-215 10.2 10.1 10.2 10.1 215-220 10.2 10.1 10.2 10.1 220-225 10.2 10.1 10.2 10.1 225-230 10.2 10.1 10.2 10.1 230-235 10.2 10.1 10.2 10.1 235-240 10.2 10.1 10.2 10.1 240-245 10.2 10.1 10.2 10.1 245-250 10.2 10.1 10.2 10.1 250- 10.2 10.1 10.2 10.1	Cus. Model NO. HDP	TDP Model NO. HDP-01	Part NO. HDP-01	Part Name. 标准插面指示	Date: 2018/08/28

REV.	DESCRIPTION	BY	DATE	ECN NO.
①	初版发行	YP-Zhu	2015.05.28	
②	增加C面要求	YP-Zhu	2015.06.10	
③				

MODEL NUMBER	HDP05-MD05010U	PAGE	13 of 17
PART NUMBER	HDP05-MD-BUSB-4	REVISION	A1 (Pre)
DESCRIPTION	I.T.E. & MEDICAL POWER SUPPLY BLACK	DATE	Aug 28, 2018

4.5 Assembly Drawing

Translation(注意):
 1. production for all components shall not be started before confirmation by HDP engineer.
 (所有零部件都要经过工程师确认后才能在生产)
 2. Dimensions marked as ○ are HDP control dimensions and must comply to Cpm± 1.33(to be inspected by IQC).
 (有○标记的尺寸为重要管制尺寸, 其Cpm公差≥1.33 (IQC必检))
 3. Dimensions marked as ■ are customer control dimensions (to be inspected by IQC).
 (有■标记的尺寸为客户重要管制 (IQC必检) 尺寸)
 4. Dimensions unmarked please refer to 3D CAD (未标注的尺寸请参考3D CAD).
 5. Material should comply with ROHS standard (产品材质应符合ROHS).
 6. Material (材质) : .PC945
 7. Surface treatment (表面处理) : .表面喷砂; MIT1010 (weight (重量) : .g±5%).

差异表 (Comparison Table)

成品料号 (Finished Goods P/N)	描述 (Description)
HDP05-MD-BUSB-4	黑色 (Black)
HDP05-MD-WUSB-4	白色 (White)

REV.	DESCRIPTION	BY	DATE	ECN NO.
△	初版发行	肖志斌	2018.02.24	
△				
△				
△				

Third Angle Projection	This drawing is the property of HDP corporation. All rights reserved. No part of this drawing may be reproduced or transmitted in any form or by any means electronic or mechanical, including photocopying, recording, or by any information storage and retrieval system, without the prior written permission of HDP corporation.	Scale: 1:1	Unit: MM	Dimension	Tolerance
Variation NO.: AD	Drawn By: 肖志斌	Checked By:	Approved By:	Angular	±0.25°
Quotation	Size: A3	Sheet: 1/1	Date: 2018.02.24	F	G
Sample	25-80	1	25-80	H	I
Tooling	80-250	1	80-250	J	K
Official Issue	250-400	1	250-400	L	M
	400-500	1	400-500	N	O
	500-600	1	500-600	P	Q
	600-700	1	600-700	R	S
	700-800	1	700-800	T	U
	800-900	1	800-900	V	W
	900-1000	1	900-1000	X	Y
	1000-1100	1	1000-1100	Z	AA
	1100-1200	1	1100-1200	AB	AC
	1200-1300	1	1200-1300	AD	AE
	1300-1400	1	1300-1400	AF	AG
	1400-1500	1	1400-1500	AH	AI
	1500-1600	1	1500-1600	AJ	AK
	1600-1700	1	1600-1700	AL	AM
	1700-1800	1	1700-1800	AN	AO
	1800-1900	1	1800-1900	AP	AQ
	1900-2000	1	1900-2000	AR	AS
	2000-2100	1	2000-2100	AT	AU
	2100-2200	1	2100-2200	AV	AW
	2200-2300	1	2200-2300	AX	AY
	2300-2400	1	2300-2400	AZ	BA
	2400-2500	1	2400-2500	BB	BC
	2500-2600	1	2500-2600	BD	BE
	2600-2700	1	2600-2700	BF	BG
	2700-2800	1	2700-2800	BH	BI
	2800-2900	1	2800-2900	BJ	BK
	2900-3000	1	2900-3000	BL	BM
	3000-3100	1	3000-3100	BN	BO
	3100-3200	1	3100-3200	BP	BQ
	3200-3300	1	3200-3300	BR	BS
	3300-3400	1	3300-3400	BT	BU
	3400-3500	1	3400-3500	BV	BW
	3500-3600	1	3500-3600	BX	BY
	3600-3700	1	3600-3700	BZ	CA
	3700-3800	1	3700-3800	CB	CC
	3800-3900	1	3800-3900	CD	CE
	3900-4000	1	3900-4000	CF	CG
	4000-4100	1	4000-4100	CH	CI
	4100-4200	1	4100-4200	CJ	CK
	4200-4300	1	4200-4300	CL	CM
	4300-4400	1	4300-4400	CN	CO
	4400-4500	1	4400-4500	CP	CQ
	4500-4600	1	4500-4600	CR	CS
	4600-4700	1	4600-4700	CT	CU
	4700-4800	1	4700-4800	CV	CW
	4800-4900	1	4800-4900	CX	CY
	4900-5000	1	4900-5000	CZ	CA
	5000-5100	1	5000-5100	CB	CC
	5100-5200	1	5100-5200	CD	CE
	5200-5300	1	5200-5300	CF	CG
	5300-5400	1	5300-5400	CH	CI
	5400-5500	1	5400-5500	CJ	CK
	5500-5600	1	5500-5600	CL	CM
	5600-5700	1	5600-5700	CN	CO
	5700-5800	1	5700-5800	CP	CQ
	5800-5900	1	5800-5900	CR	CS
	5900-6000	1	5900-6000	CT	CU
	6000-6100	1	6000-6100	CV	CW
	6100-6200	1	6100-6200	CX	CY
	6200-6300	1	6200-6300	CZ	CA
	6300-6400	1	6300-6400	CB	CC
	6400-6500	1	6400-6500	CD	CE
	6500-6600	1	6500-6600	CF	CG
	6600-6700	1	6600-6700	CH	CI
	6700-6800	1	6700-6800	CJ	CK
	6800-6900	1	6800-6900	CL	CM
	6900-7000	1	6900-7000	CN	CO
	7000-7100	1	7000-7100	CP	CQ
	7100-7200	1	7100-7200	CR	CS
	7200-7300	1	7200-7300	CT	CU
	7300-7400	1	7300-7400	CV	CW
	7400-7500	1	7400-7500	CX	CY
	7500-7600	1	7500-7600	CZ	CA
	7600-7700	1	7600-7700	CB	CC
	7700-7800	1	7700-7800	CD	CE
	7800-7900	1	7800-7900	CF	CG
	7900-8000	1	7900-8000	CH	CI
	8000-8100	1	8000-8100	CJ	CK
	8100-8200	1	8100-8200	CL	CM
	8200-8300	1	8200-8300	CN	CO
	8300-8400	1	8300-8400	CP	CQ
	8400-8500	1	8400-8500	CR	CS
	8500-8600	1	8500-8600	CT	CU
	8600-8700	1	8600-8700	CV	CW
	8700-8800	1	8700-8800	CX	CY
	8800-8900	1	8800-8900	CZ	CA
	8900-9000	1	8900-9000	CB	CC
	9000-9100	1	9000-9100	CD	CE
	9100-9200	1	9100-9200	CF	CG
	9200-9300	1	9200-9300	CH	CI
	9300-9400	1	9300-9400	CJ	CK
	9400-9500	1	9400-9500	CL	CM
	9500-9600	1	9500-9600	CN	CO
	9600-9700	1	9600-9700	CP	CQ
	9700-9800	1	9700-9800	CR	CS
	9800-9900	1	9800-9900	CT	CU
	9900-10000	1	9900-10000	CV	CW

MODEL NUMBER	HDP05-MD05010U	PAGE	14 of 17
PART NUMBER	HDP05-MD-BUSB-4	REVISION	A1 (Pre)
DESCRIPTION	I.T.E. & MEDICAL POWER SUPPLY BLACK	DATE	Aug 28, 2018

5 Electromagnetic Compatibility

The following tests are required:

Power Conversion Device	EU Reference	Title of Standard	International Reference	Test Level for Heavy Industrial	Test Level for Light Industrial	Test Level for 48 VDC p/s
AC-DC, DC-DC, Power Supplies	EN55022:1998 To be soon updated to EN55022:2006	Information technology equipment – Radio disturbance characteristics – Limits and methods of measurement	CISPR22:1997	Class "B" 4dB of margin Class "A" or Class "B" for servers	Class "B" 4dB of margin Class "A" or Class "B" for servers	Class "B" 4dB of margin Class "A" or Class "B" for servers
DC-DC, DC-DC Power Supplies	EN55024:1998 (EN50082-2:1995 updated to EN61000-6-2:2001 for -48 VDC supply)	Information technology equipment – Immunity Characteristics – Limits and methods of measurement	CISPR24:1997			Different tests and limits for DC power supplies
AC-DC, AC-DC Power Supplies	EN61000-3-2:2000 (PFC Power Supplies ONLY if rated greater than 75W)	Electromagnetic Compatibility (EMC) – Part 3: Limits – Section 2: Limits for harmonic current emissions (Equipment input current up to and including 16 A per phase)	IEC 61000-3-2:2000	Must meet Class D requirements	Must meet Class D requirements	N/A
AC-DC, AC-DC Power Supplies	EN61000-3-3:1995 (PFC Power Supplies ONLY)	Electromagnetic Compatibility (EMC) – Part 3: Limits – Section 3: Limitation of voltage fluctuations and flicker in low-voltage supply systems for equipment with rated current up to and including 16A	IEC 61000-3-3:1994	Meet specification	Meet specification	N/A
AC-DC, DC-DC, Power Supplies	EN61000-4-2	Electromagnetic Compatibility (EMC) – Part 4: – Section 2: Electrostatic discharge immunity test	IEC 1000-4-2	(+/-) 2, 4, 8, 12 and 15 kV air (+/-) 2, 4, 6, 8 kV contact discharge	(+/-) 2, 4, 8, 12 and 15 kV air (+/-) 2, 4, 6, 8 kV contact discharge	(+/-) 2, 4, 8, 12 and 15 kV air (+/-) 2, 4, 6, 8 kV contact discharge
AC-DC, DC-DC, Power Supplies	EN 61000-4-3 + Israeli Deviations in SI 961 part 6.2	Electromagnetic Compatibility (EMC) – Part 4: – Section 3: Radiated, radio-frequency electromagnetic field, immunity test	IEC 1000-4-3 Basic Standard ENV 50140	10V/m 80-1000MHz, 80% AM 900 +/- 5MHz 50%, 200Hz	3V/m 80-1000MHz, 80% AM 900 +/- 5MHz 50%, 200Hz	10V/m 80-1000MHz, 80% AM 900 +/- 5MHz 50%, 200Hz
AC-DC, DC-DC, Power Supplies	EN 61000-4-4	Electromagnetic Compatibility (EMC) – Part 4: – Section 4: Electrical fast transient/burst immunity test	IEC 1000-4-4	1, 2, 4kV – Power 0.5, 1, and 2kV – Signal	1, 2 kV – Power 0.5, 1 kV – Signal	1, 2 kV – Power 0.5, 1, and 2kV – Signal
AC-DC, DC-DC, Power Supplies	EN 61000-4-5	Electromagnetic Compatibility (EMC) – Part 4: – Section 5: Surge Immunity Test	IEC 1000-4-5	1, 2kV differential 2, 4kV common	0.5, 1 kV diff. 0.5, 1, 2, 2.5 common	0.5, 1kV differential 0.5 1kV common
AC-DC, DC-DC, Power Supplies	EN 61000-4-6 + Israeli Deviations in SI 961 part 6.2	Electromagnetic Compatibility (EMC) – Part 4: – Section 6: Conducted disturbances induced by radio-frequency fields – immunity test	IEC 1000-4-6 Basic Standard ENV 50141	10V/m 80% AM (1kHz)	3 V/m 80% AM (1kHz)	10 V/m 80% AM (1kHz)
AC-DC, DC-DC, Power Supplies	EN 61000-4-8	Electromagnetic Compatibility (EMC) – Part 4: – Section 8: Power-frequency magnetic field immunity test	IEC 1000-4-8	30 A/m (r.m.s.)	1 A/m (r.m.s.)	30 A/m (r.m.s.)
AC-DC, DC-DC, Power Supplies	EN 61000-4-11	Electromagnetic Compatibility (EMC) – Part 4: – Section 11: Voltage dips, short interruptions and voltage variations immunity test	IEC 1000-4-11	30% for 0.5 S >95% for 10mS >95% for 5 S	30% for 0.5 S >95% for 10mS >95% for 5 S	30% for 0.5 S >95% for 10mS >95% for 5 S

Light Industrial: EN55022:1998 (Emission) and EN 61000-6-1:2001 (Immunity)

Heavy Industrial: EN55011 (Emission) and EN 610006-2:2005 (Immunity)

The content of the test report, at a minimum, includes:

- Test object used (development status with serial number/sample name)
- Mode(s) of operation of the test object
- Test result
- Photograph/sketch of the test environment along with listed test conditions
- Applied measurement tools/equipment
- Ambient temperature for ESD-tests. Also include air pressure and air humidity
- Name of Test Engineer
- Date of the test

MODEL NUMBER	HDP05-MD05010U	PAGE	15 of 17
PART NUMBER	HDP05-MD-BUSB-4	REVISION	A1 (Pre)
DESCRIPTION	I.T.E. & MEDICAL POWER SUPPLY BLACK	DATE	Aug 28, 2018

6 Labeling

6.1 Labeling the Device

The labeling must comply with IEC 60950 and IEC 60601 requirements.
 The following information as a minimum must be printed on the adapter:
 Input rating
 Output rating
 Made in China
 Model and/or part number
 Production lot or date code

6.2 Label Drawing

REV.	DESCRIPTION	BY	DATE	ECN NO.
△	初版发行	肖志斌	2018.02.24	
△	增加 EA 去掉 R	肖志斌	2018.08.02	ECN-154
△	去掉 SGS 编号	肖志斌	2018.08.21	

MODEL: HDP05-MD05010U
 INPUT: 100-240Vac~ 50/60Hz
 OUTPUT: 5Vdc 1A, 5W

0.15A

EFFICIENCY LEVEL: VI

CE

MADE IN CHINA
www.hdp-power.com

RoHS

LOT YYWW

1.1 R

1.1 R

2.2 R

HDP文字平齐
插脚孔底部

文字不要印在两条槽中

此处内容为丝印

虚线框不需要丝印上去

此处内容为镭射

注意事项:
 X,X R = Reference dimension
 丝印颜色 PANTONE 8U/8C

Translation(注记):
 1.production for all components shall not be started before confirmation by HDP engineer.
 (所有零部件都需经边翔工程师确认后才可生产.)
 2.Dimensions marked as ① are HDP control dimensions and must comply to Cpm: 1.33(to be inspected by IQC).
 (有“①”标记的尺寸为重要管制尺寸,其Cpm必需≥1.33 (IQC必检))
 3.Dimensions marked as ■ are customer control dimensions (to be inspected by IQC).
 (有“■”标记的尺寸为客户重要管制 (IQC必检) 尺寸.)
 4.Dimensions unmarked please refer to 3D CAD(未标示的尺寸请参照3D CAD).
 5.Material should comply with ROHS standard(产品材质应符合ROHS).
 8.Material (材质): 见差异表 (weight (重量): g±5%).
 9.Surface treatment (表面处理): 见差异表

差异表	
料号	描述
HDP05-MD-BUSB-4	黑色
HDP05-MD-WUSB-4	白色

	Third Angle Projection	This drawing is the property of HDP corporation. It contains material that is confidential and/or legally privileged for the sole use of the intended recipient. Any release or distribution by others is strictly prohibited and punishable to the full extent of the law.	Tolerance				Model NO. / Project Name:		
	Quotation		Version NO. : A2	Scale : 1:1	Unit : MM	Angular ±0.25°			HDP05-MD05010U
Sample	Drawn By	Sheet : 1/1	Size : A3	Dimension	F	G	H	J	Finished Goods Part NO.
Tooling	肖志斌	Checked By	Approver By	0-8	±0.05	±0.1	±0.1	±0.2	见差异表
Official Issue	2018,08,21		Aug 22, 2018	8-25	±0.05	±0.1	±0.15	±0.3	Part NO.
				25-60	±0.2	±0.3	±0.4	±0.7	/
				60-250	±0.25	±0.3	±0.4	±0.6	Part Name.
				250-800	±0.5	±0.6	±0.8	±1.0	丝印图
				800-2500	±1.0	±1.0	±1.5	±1.7	
				2500+	±2.0	±2.0	±3.0	±3.0	

MODEL NUMBER	HDP05-MD05010U	PAGE	16 of 17
PART NUMBER	HDP05-MD-BUSB-4	REVISION	A1 (Pre)
DESCRIPTION	I.T.E. & MEDICAL POWER SUPPLY BLACK	DATE	Aug 28, 2018

7 Packaging

7.1 Drawing

Translation(注):

1. production for all components shall not be started before confirmation by HDP engineer.
2. Dimensions marked as ① are HDP control dimensions (to be inspected by IQC).
3. Dimensions marked as ② are customer control dimensions (to be inspected by IQC).
4. Dimensions unmarked please refer to 3D CAD (未标示的尺寸请参考3D CAD).
5. Material should comply with ROHS standard (产品材质应符合ROHS).
6. Material (材质): _____ (weight (重量): _____ g±5%).
7. Surface treatment (表面处理): _____.

1外箱装40PCS白盒, 每PCS白盒装5PCS产品, 1外箱共装200PCS产品。
 总毛重为: 9300g (9.3kg)
 总净重为: 7700g (7.7kg)
 重量仅供参考。

序号	名称	料号	描述	数量
1	PCB			200PCS
2	白盒			40PCS
3	纸版			3PCS
4	外箱			1PCS
5	发货标签			2PCS

Version NO.: 1
 Drawn By: 肖志斌
 Checked By: _____
 Approved By: _____

成品料号 (Finished Goods T/V): HDP05-MD-BUSB-4
 包装料号 (Component Table): HDP05-MD-BUSB-4
 颜色 (Color): 白色 (White)

Dimension	F	G	H	J	Part NO.
0-4	±0.07	±0.1	±0.1	±0.2	
6-28	±0.07	±0.1	±0.15	±0.2	
28-80	±0.1	±0.2	±0.25	±0.3	
80-200	±0.25	±0.3	±0.4	±0.6	
200-300	±0.5	±0.6	±0.8	±1.0	
300-2500	±1.0	±1.0	±1.5	±1.7	
2500~	±2.0	±2.0	±3.0	±3.0	

Model NO./Project Name: MED04(B)
 Finished Goods Part NO.: _____
 Drawing Name: 包装爆炸图

Third Angle Projection
 This drawing is the property of HDP company.
 It is made in accordance with the contract order. Any
 reproduction or distribution by others is strictly prohibited and
 will be held liable.

MODEL NUMBER	HDP05-MD05010U	PAGE	17 of 17
PART NUMBER	HDP05-MD-BUSB-4	REVISION	A1 (Pre)
DESCRIPTION	I.T.E. & MEDICAL POWER SUPPLY BLACK	DATE	Aug 28, 2018

7.2 Packaging Test

1	Bulk product	<p>Drop package on each side for a total of 10 drops (2 opposite corners, 3 adjacent sides of bottom corner, then all 6 faces) per system on concrete floor from a height of 1.0 meter. This is an operational test.</p> <p>Pass/Fail Criteria: 1. The systems shall pass Functional Test. 2. No visible damage to product and gift box.</p>
2	Drop test for Packaged Product (gift box, clamshell, etc.)	<p>Drop fully packaged products (in gift box or clamshell) onto a concrete floor from height of 153cm for 10 drops on the six surfaces and four corners.</p> <p>Pass/Fail Criteria: 1. The systems shall pass Functional Test. 2. Paper or PET deformation is acceptable. No damage in product integrity of packaging materials (e.g. sealed edge openings) is allowed.</p>
3	Sinusoidal Vibration	<p>Test with sine wave that will sweep the frequency from 7 - 500 hertz for construction test; 5 - 70 hertz for packaging test. Displacement >3.15mm. Total test duration time shall be 30 min (10 min per axis). Test shall be performed in three mutually perpendicular axes: Z-axis (vertical), Y-axis (fore-aft), and X-axis (lateral).</p> <p>Pass/Fail Criteria: The UUT and packaging shall withstand the above test procedure without visible damage or performance decline during operation.</p>

8 Warranty

One year warranty for defects arising from workmanship and materials per the SEACOMP Warranty, RMA, and Failure Analysis Policy.



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

Телефон: 8 (812) 309 58 32 (многоканальный)

Факс: 8 (812) 320-02-42

Электронная почта: org@eplast1.ru

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.