



Switching power supply specification (Class B)

KUANTECH P/N:

PRODUCT NO:

CUSTOMER P/N:

KSC-20P2-UL

KS210738

1	GENERAL	4
1.1	Description	4
2	INPUT REQUIREMENTS	4
2.1	Input Conditions.....	4
2.2	AC Inrush Current.....	4
3	OUTPUT REQUIREMENTS	4
4	MECHANICAL	5
4.1	Enclosure and Layout.....	5
4.2	Input and Output Configuration.....	5
5	REGULATORY COMPLIANCE	6
5.1	EMC Specifications	6
5.1.1	Radiated and Conducted Emission.....	6
5.2	Immunity	6
5.2.1	Electrostatic Discharge Immunity	6
5.2.2	Radiated Field Immunity.....	6
5.2.3	Conducted Field Immunity	6
5.2.4	Fast Transient Immunity	6
5.2.5	Surge Immunity.....	6
5.2.6	Voltage fluctuations and Flicker.....	7
5.2.7	Voltage dips and interruption	7
5.3	Safety Requirements and Certification	7
5.3.1	Regulatory Standard.....	7
5.3.2	Additional Safety Requirements	7
6	ENVIRONMENTAL REQUIREMENTS	8
6.1	Temperature	8
6.2	Humidity	8
6.3	Altitude	8
6.4	Vibration	8
6.5	Drop Test.....	8
7	APPEARANCE DRAWING: (Unit: mm)	9
8	NAME PLATE:	10
9	PACKING (Unit: mm)	11

TITLE:

REVISION: A

DRAWING NO.:

PREPARED : 廖小艳

CHECKED: 陈秋健 兰明德

APPROVED : 贺洪明

DATE: 2021-11-09

PAGE: 3 OF 11



Switching power supply specification (Class B)

KUANTECH P/N:	PRODUCT NO:	CUSTOMER P/N:
KSC-20P2-UL	KS210738	

1 GENERAL

1.1 Description

This specification defines the performance characteristics for a Class II adapter, single-phase 20.0 watts. Single of two segment voltage output level power supply.

- Simple design philosophy.
- Reliability level of 50K hours MTBF @ 25° C (rated input voltage, 80% load and using the BELLCORE SR-332 method).
- DC output voltage must be Safe Extra Low Voltage (SELV) & Limited Power as defined by IEC62368-1.
- The maximum room ambient temperature (T_{mra}), as mentioned in clause B.1.6 and B.2.6 of IEC62368-1, for the external power supply is 40 °C.
- Compliant with Class B USB Type-C Power Delivery Specification.
- The adapter meet MFI, PD2.0, PD3.0.

2 INPUT REQUIREMENTS

2.1 Input Conditions

The supply shall operate over the voltage ranges as follows:

Rated input voltage	100-240Vac
Operating range	90-264Vac
Rated input frequency	50/60Hz +/- 3Hz
Rated input current	0.6A max. @ 100Vac to 240Vac
Power consumption (no-loading at 5V)	0.1W max. @ 230Vac
Primary current protection	An adequate internal fuse on the AC input line is provided.
Input configuration	<u>2</u> Conductor

2.2 AC Inrush Current

No damage shall be occurred and the input fuse shall not be blown up nominal input voltage full load 25°C cold start.

3 OUTPUT REQUIREMENTS

3.1	Nominal DC output voltage	Fixed PDO		
		5.0V	9.0V	12.0V
3.2	Minimum load current	0.0A		
3.3	Rating load current	3.0A	2.22A	1.67A
3.4	Rating output power	20.0W		
3.5	Line regulation	The line regulation is less than ±5% while measuring at rated load		

TITLE:		REVISION: A	DRAWING NO.:	
PREPARED : 廖小艳	CHECKED: 陈秋健 兰明德	APPROVED : 贺洪明	DATE: 2021-11-09	PAGE: 4 OF 11



冠德科技股份有限公司
KUANTECH INCORPORATED COMPANY

Switching power supply specification (Class B)

KUANTECH P/N:

PRODUCT NO:

CUSTOMER P/N:

KSC-20P2-UL

KS210738

3.6	Load regulation	The load regulation for +5.0V, +9.0V, +12.0V is less than $\pm 5\%$, at measured output load from 0% to 100% rated load.		
3.7	Ripple and noise	Fixed PDO		
		5.0V	9.0V	12.0V
		120 mVp-p	180 mVp-p	200 mVp-p
		Add 0.1uF/50V ceramic capacitor and 10uF/50V aluminum electrolytic capacitor in parallel the output terminal. Measured with 20MHz Bandwidth Oscilloscope at full load land rate input voltage 115Vac & 230Vac.		
3.8	Switching efficiency	Meet DOE VI.		
		AC115V/60Hz and 230V/50Hz, output load current from 100%,75%,50%,25%. The test point: end PCBA board, no include DC cable.		
3.9	Turn on delay time	<u>3000 mS</u> at nominal input AC voltage and output full load.		
3.10	Rise time	The supply shall have a start-up rise time of less than <u>100 mS</u> to rise to within regulation limits for all DC outputs.		
3.11	Hold up time	When power off, DC output must be maintained <u>8 mS</u> in regulation limit at 115V/230Vac and full load.		
3.12	Output over-shoot	Less than <u>10%</u> of nominal voltage value.		
3.13	Protection function			
	Over-voltage protection	The output voltage shall be clamped by internal protection.		
	Short-circuit protection	The adapter shall not be damaged by short the DC output to Ground. The adapter shall resume normal operation when a short circuited fault condition is removed.		
	Over current protection	When overload is applied to the output, the power supply shall be shut down and enter auto-recovery or latch mode 4.5A max.		

4 MECHANICAL

4.1 Enclosure and Layout

Plastic case: UL94V-0
 Weight: / g (Max.)
 Dimensions: 48*43*20mm
 Colour: BLACK

4.2 Input and Output Configuration

Input pin: UL Pin
 Output connector: DC plug Type: USB Type-C 5.0V/3.0A,9.0V/2.22A,12.0V/1.67A,
 Polarity: /

TITLE:		REVISION: A	DRAWING NO.:	
PREPARED : 廖小艳	CHECKED: 陈秋健 兰明德	APPROVED : 贺洪明	DATE: 2021-11-09	PAGE: 5 OF 11



5 REGULATORY COMPLIANCE

5.1 EMC Specifications

The external power supply must meet all specification in this section. it is required that the external power supply work closely with the customer's equipment in order to get the best EMC solution.

5.1.1 Radiated and Conducted Emission

The power supply shall comply to:
FCC part 15: Class B for radiated and conducted emissions.
EN55032, Class B for radiated and conducted emissions.

5.2 Immunity

5.2.1 Electrostatic Discharge Immunity

EN 55024, EN 61000-4-2
- Air Discharge: ±10kV
- Contact Discharge: ±5kV
- Performance Criteria B
Electrostatic-discharge test by contact or air should be conducted with Static-discharge tester(energy storage capacitance of 150pF and discharge resistance of 330Ω) 10kV air discharge, 5kV contact discharge.

5.2.2 Radiated Field Immunity

EN 55024, EN 61000-4-3
Frequency Range: 80-1000MHz
Field Strength: 3 V/m with 80% amplitude modulation of 1kHz
Performance Criteria A
Radio-frequency electromagnetic field susceptibility test, RS 80-1000MHz, 3V/m, 80%AM(1KHz).

5.2.3 Conducted Field Immunity

EN 55024, EN 61000-4-6
- Frequency Range: 150kHz-230MHz
- Field Strength: 3A/m with 80% amplitude modulation of 1kHz
- Performance Criteria A

5.2.4 Fast Transient Immunity

EN 55024, EN 61000-4-4
- Power line: 1kV
- Performance Criteria B

5.2.5 Surge Immunity

EN 55024, EN 61000-4-5
- 1.2/50 usec Open Circuit voltage

TITLE:

REVISION: A

DRAWING NO.:

PREPARED : 廖小艳

CHECKED: 陈秋健 兰明德

APPROVED : 贺洪明

DATE: 2021-11-09

PAGE: 6 OF 11



冠德科技股份有限公司
KUANTECH INCORPORATED COMPANY

Switching power supply specification (Class B)

KUANTECH P/N:

PRODUCT NO:

CUSTOMER P/N:

KSC-20P2-UL

KS210738

- 8/20 usec Short Circuit current
- Power line : 1.0KV(Different mode)
- 2.0KV(Common mode)

Lighting Surge Voltage of differential and common modes shall be applies across AC input lines and across input and frame ground.

5.2.6 Voltage fluctuations and Flicker

Meet EN61000-3-3

5.2.7 Voltage dips and interruption

Meet EN61000-4-11

5.3 Safety Requirements and Certification

5.3.1 Regulatory Standard

The power supply shall complied the following international regulatory standards

for short	Country	Certified Status	Standard
UL	USA	/	UL 62368-1
CUL	Canada	/	CSA C22.2 NO.62368-1

5.3.2 Additional Safety Requirements

- ◎ Dielectric Withstand Voltage, Primary(input AC short)-to-Secondary(output DC short): 3000 Vac, 5mA, 1 minute or 3600Vac 5mA 2sec. for produce line
- ◎ Insulation Resistance, Input to output: 100MΩ(Min.) at 500 VDC.
- ◎ Reinforced insulation system, Primary-to-Ground and Primary-to-Secondary.
- ◎ The leakage current shall not exceed 0.25mA.

TITLE:

REVISION: A

DRAWING NO.:

PREPARED : 廖小艳

CHECKED: 陈秋健 兰明德

APPROVED : 贺洪明

DATE: 2021-11-09

PAGE: 7 OF 11



冠德科技股份有限公司
KUANTECH INCORPORATED COMPANY

Switching power supply specification (Class B)

KUANTECH P/N:

PRODUCT NO:

CUSTOMER P/N:

KSC-20P2-UL

KS210738

6 ENVIRONMENTAL REQUIREMENTS

6.1 Temperature

- ⊙ Operating : 0 °C - +40 °C
- ⊙ Non-Operating : -20 °C - +70 °C

6.2 Humidity

- ⊙ Operating : 5%~95% (Non Condensing)
- ⊙ Non-Operating : 5%~95% (Non Condensing)

6.3 Altitude

Sea level to 2000m

6.4 Vibration

Meet IEC721-3-3

6.5 Drop Test

At 1m drop on concrete surface, one times on each side

TITLE:

REVISION: A

DRAWING NO.:

PREPARED : 廖小艳

CHECKED: 陈秋健 兰明德

APPROVED : 贺洪明

DATE: 2021-11-09

PAGE: 8 OF 11



冠德科技股份有限公司
KUANTECH INCORPORATED COMPANY

Switching power supply specification (Class B)

KUANTECH P/N:

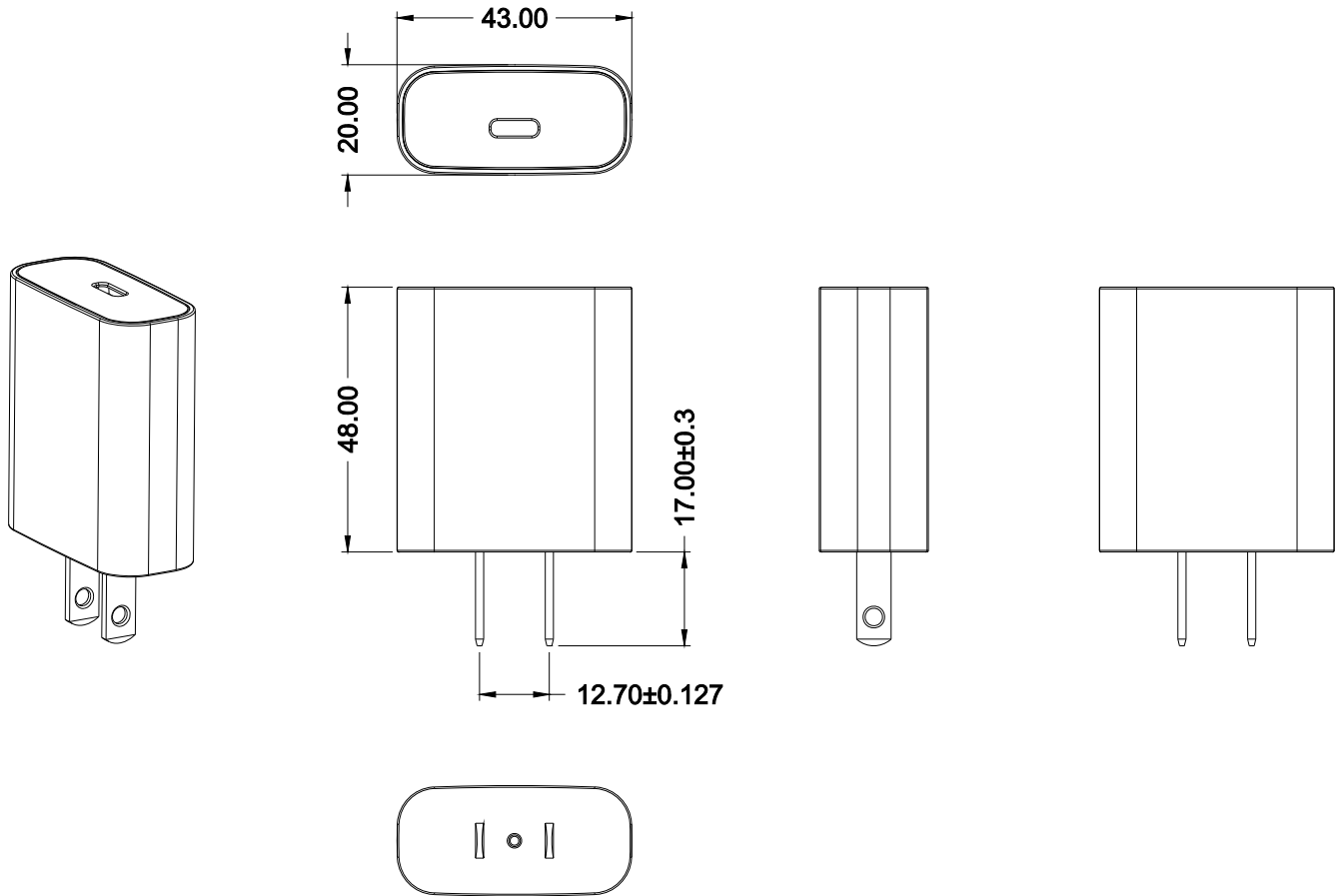
PRODUCT NO:

CUSTOMER P/N:

KSC-20P2-UL

KS210738

7 APPEARANCE DRAWING: (Unit: mm)



- NOTE: 1. Case cover & chassis material:
PC BLACK (NO KTEC)
2. AC PIN MATERIAL: BRASS (NI PLATED)
3. PAHS 6P NP REACH ROHS
4. Top mold: MSS019045; Bottom mold: MSS019047

TITLE:		REVISION: A	DRAWING NO.:	
PREPARED : 廖小艳	CHECKED: 陈秋健 兰明德	APPROVED : 贺洪明	DATE: 2021-11-09	PAGE: 9 OF 11



冠德科技股份有限公司
KUANTECH INCORPORATED COMPANY

Switching power supply specification (Class B)

KUANTECH P/N:

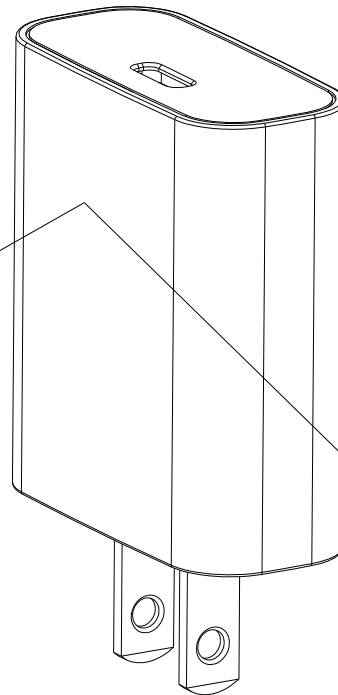
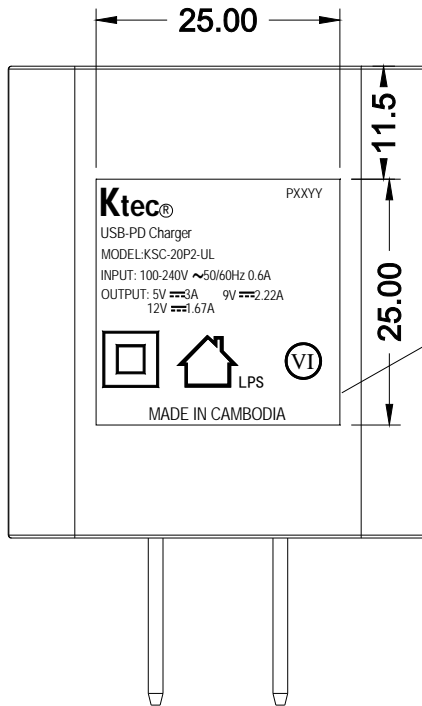
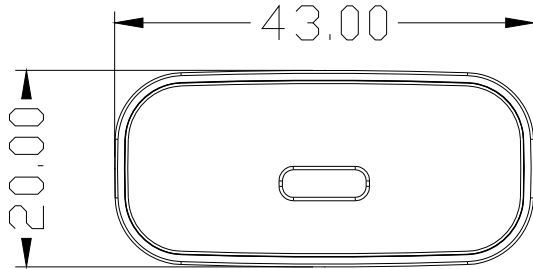
PRODUCT NO:

CUSTOMER P/N:

KSC-20P2-UL

KS210738

8 NAME PLATE:



Laser

Note: Laser (镭射)

PXXYY (PXXYY: P+PAHS,6P,NP, XX=Week YY=Year,) 按实际生产日期制作

TITLE:

REVISION: A

DRAWING NO.:

PREPARED : 廖小艳

CHECKED: 陈秋健 兰明德

APPROVED : 贺洪明

DATE: 2021-11-09

PAGE: 10 OF 11



冠德科技股份有限公司
KUANTECH INCORPORATED COMPANY

Switching power supply specification (Class B)

KUANTECH P/N:

PRODUCT NO:

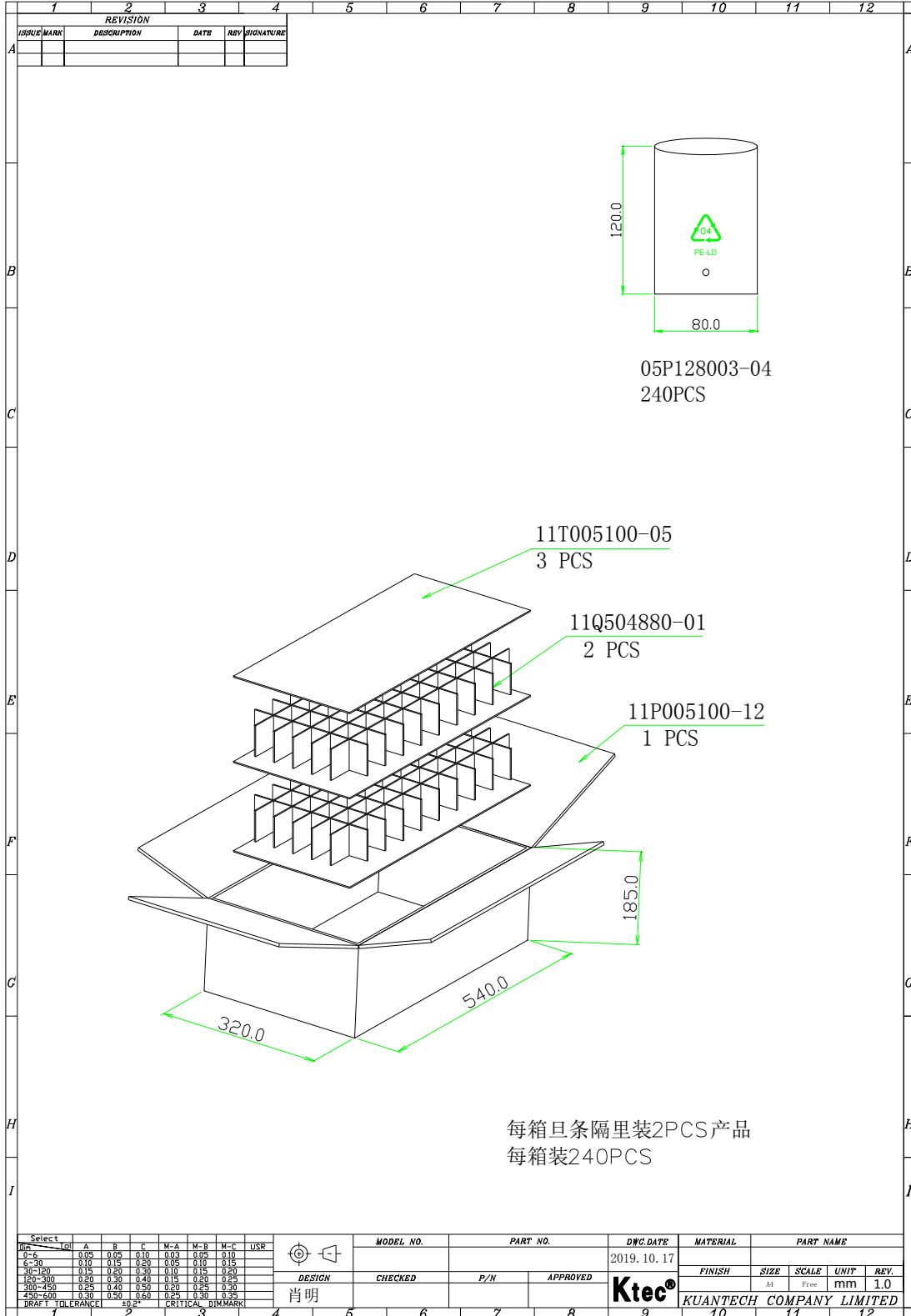
CUSTOMER P/N:

KSC-20P2-UL

KS210738

9 PACKING (Unit: mm)

*此包装为公司标准品包装，可能与样品包装不同，请确认！



每箱旦条隔里装2PCS产品
每箱装240PCS

TITLE:

REVISION: A

DRAWING NO.:

PREPARED: 廖小艳

CHECKED: 陈秋健 兰明德

APPROVED: 贺洪明

DATE: 2021-11-09

PAGE: 11 OF 11