

**RoHS  
Compliant**



## Description:

Universal Switch Mode Power Supply with UK Plug, designed for efficient and reliable charging across a wide voltage range. Features a Type-C PD (Power Delivery) connector for fast and intelligent power output.

### 1.1 Input:

Voltage Range: 90V – 264V AC

Frequency Range: 47 – 63Hz

### 1.2 Output:

5V  $\approx$  3A

9V  $\approx$  2.22A

12V  $\approx$  1.67A

### 1.3 Connector:

USB Type-C (PD)

### 1.4 Applications:

Suitable for smartphones, tablets, portable electronics, and other USB-C PD compatible devices.

## 2. Input Current

0.6A max when input rated voltage and output rated load.

2.1 Unload Standby Power: 0.1W 115V/230Vac Max

2.2 In-Rush Current

50 A mps Max Cold start at 240Vac input ,with rated load and 25 °C ambient.

2.3 AC Leakage Current

0.25mA Max .At 240Vac input.

## 3. Output Characteristics

3.1 Method Of Measurement

Constant voltage

3.2 Rated Output Power: 20W

### 3.3 Combined Load/Line Regulation

Voltage	Min. Load	Max. Load	Load Regulation	Upload output voltage
CC +5V	0A	3.0A	4.75V-5.25V	4.75V-5.25V
CC +9V	0A	2.22A	8.55V-9.45V	8.55V-9.45V
CC+12V	0A	1.67A	11.40V-12.60V	11.40V-12.60V

### 3.4 Ripple And Noise

**Ripple & Noise:** Measurement is done by 20MHz bandwidth oscilloscope and the output paralleled a 0.1uF ceramic capacitor and a 47uF electrolysis capacitor. (test under the condition of rated input and rated output)

Voltage	Current	Ripple & Noise (Max)
+5V	3000mA	180m Vp-p
+9V	2220mA	180m Vp-p
+12V	1670mA	180m Vp-p

### 3.5 Efficiency

3.5.1 115VAC /230VAC input, output rated load is 25%, 50%, 75%, 100% 4 situations of average efficiency

### 3.6 Load Regulation

The rated output load is 20% - 100%, the input voltage is 100V - 240V AC, and the load adjustment within the load range is less than  $\pm 5\%$ .

### 3.7 Line Regulation

The line regulation of rated output voltage is less than  $\pm 0.5\%$  while measuring at rated load and 100V ~ 240V of input voltage changing.

### 3.8 Capacitive Load Test

Input voltage 115V - 230Vac, 80% load and parallel 1000uF capacitor output starts normally.

### 3.9 Output Transient Response

When the rated input voltage is 100V-240VAC, the output current changes at a slope of 0.5A/ $\mu$ s from 20% to 80% of the load and then back to 20% of the load and the dynamic change time is 10mS, the output voltage of the power supply should be kept in the range of  $12V \pm 10\%$ .

### 3.10 Turn On Delay Time

3 second Max .At 100Vac input and output Max. Load

### 3.11 Hold Up Time

5ms Min.at100Vac input and output Max .Load.

### 3.12 Rise Time

100ms Max. At 100Vac input and output Max. Load Output voltage 10% - 90%

### 3.13 Overshoot

10% Max. When power supply on or turn off.

## 3.14 Heterophonic Noise

In the standard silent room, make the product in working condition, put the sound level meter on the A-meter, test each side at 30cm of the front, back, left, right and upper sides of the product, take the maximum value, full voltage and full load range, less than 25dB.

## 4. PROTECTION FUNCTION

### 4.1 Short Circuit Protection

The Power Supply will be auto recovered when short circuit faults remove.

### 4.2 Over Current Protection

110-150% of rated current (input:110V-230Vac) When the overcurrent, the output will enter the hiccup mode, when the overcurrent situation is relieved, the product will automatically return to normal.

### 4.3 Over Voltage Protection

The power supply shall be self – recovering when the fault condition is removed.

## 5. ENVIRONMENTAL REQUIREMENTS

### 5.1 Operating Temperature

0°C to +40°C ,Full Load, Normal Operation.

### 5.2 Relative Humidity

5%(0°C) ~ 90%(40°C) 72h Full Load , Normal operating.

### 5.3 Storage Temperature

With enclosure:-20°C to +70°C

### 5.4 Storage Humidity

With enclosure: 20% to 80%

### 5.5 ALTITUDE : IPX0

## 6. MECHANICAL CHARACTERISTICS

### 6.1 Dropping Testing

The drop height of the wall-type product is: the wood floor is 1 meter, the fall of 6 faces, each face falls once, can not fall open, the product function and structure are normal, do 25kgf tensile test.

### 6.2 Vibration

Operating: IEC 721-3-3 3M3

5~9Hz, A = 1.5mm (9 ~ 200Hz, Acceleration 5m/s)

## 7 SAFETY STANDARD

7.1 Safety Accord with IEC62368-1, EN62368-1, UL62368-1, GB4943.1

**Note:** AC pins corresponding corresponding corresponding to national standards, such as the CE that corresponds to EN62368-1.

## 7.2 Dielectric Strength Hi-Pot

Primary to secondary, 4000Vdc(or 3000Vac ) /5mA/3s.

## 7.3 Insulation Resistance

Primary to secondary :100MΩ Min at 500V DC

## 8. RELIABILITY

### 8.1 MTBF

115V-230Vac power adapter at 25 environment and rated input and full load conditions, the average inte val failure time of at least 30,000 h.(reference standard License :MIL-HDBK-217F).

### 8.2 Burn-In

100% Bur-In with 100% loading & 40±5°C Environment temperature for 4 hours.

## 9. EMC STANDARD

The power supply shall meet the following standards

	Parameter	Standard	Performance Criterion
	Conducted emission	EN55032(CISPR32), GB/T 9254.1	Class B
<b>Electromagnetic compatibility emission</b>	Radiated emission	EN55032(CISPR32), GB/T 9254.1	ClassB
	Harmonic current	EN61000-3-2, GB 17625.1	ClassA
	Voltage flicker	EN61000-3-3; GB 17625.2	.....
	Parameter	Standard	Test conditions
	ESD	EN61000-4-2 GB /T 17626.2	8KV air, 4KV contact
<b>Electromagnetic compatibility immunity</b>	RF field susceptibility EFT bursts	EN61000-4-3 GB /T 17626.3 EN61000-4-4 GB /T 17626.4	Level2, 3V/m Level2, 1KV
	Surge susceptibility	EN61000-4-5 GB /T 17626.5	Differential mode +/-1KV
<b>EN55035(CISPR 35), GB/T 9254.2</b>	Conducted susceptibility	EN61000-4-6 GB /T 17626.6	Level 2, 3V
	Magnetic field immunity	EN61000-4-8 GB /T 17626.8	Level2, 1A/m
			0%UT ; 0.5P, Criterion: B
	Voltage dips, interruption	EN61000-4-11 GB /T 17626.11	70%UT; 25P/30P, Criterion: C 0%UT; 250P/300P, Criterion: C

## 10. GREEN REQUIREMENTS

### 10.1 Hazardous Substances

The components and used materials shall be in compliance with:

- Lead free process
- EU Directive 2015/863/EU “RoHS”
- REACH MEET/ EU 2006/1907/EC

## 11. FORM-IN-PLACE

Glue

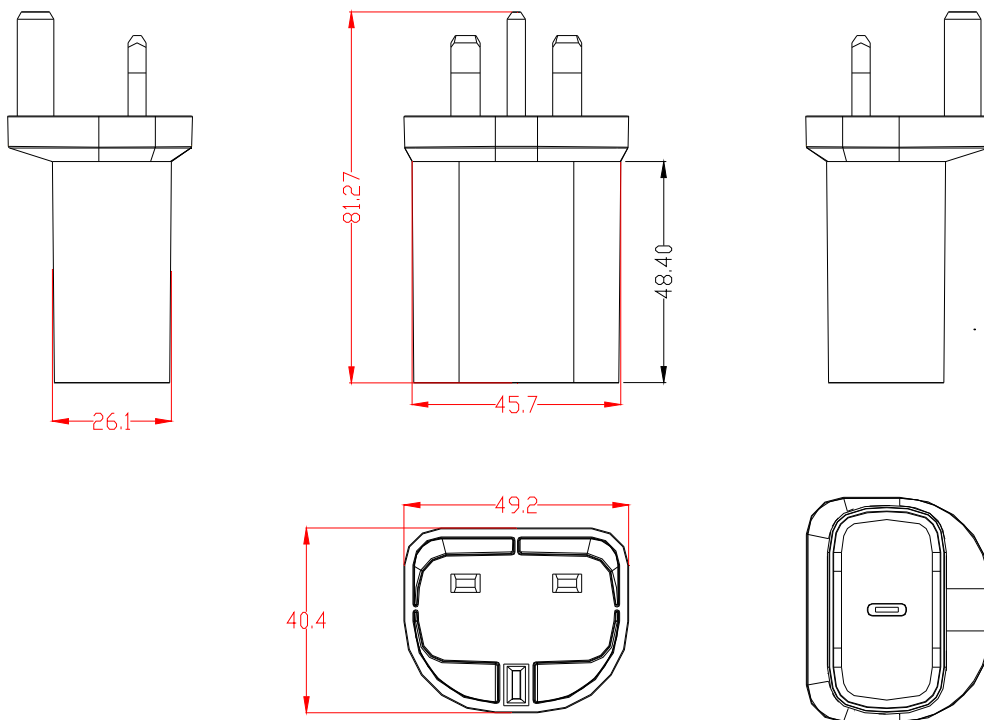
## 12. WEIGHT

The weight of the power supply shall be 58±10g (Ref)

### DRAWING

Dimensions: mm

Tolerance: +/-0.5mm



### Part Number Table

Description	Part Number
USB C PD Mains Charger, 1x USB C, 20W, Black	PELL0505
USB C PD Mains Charger, 1x USB C, 20W, White	PELL0506

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