

SPECIFICATION

DESCRIPTION	GaN 65W PD Fast Charger
Part No	MK-C0651UK-CCF

E. C. LIST

[illegible]

1. SCOPE

This product is a consumer product. It can be used for intelligent identification and charging of Bluetooth devices, mobile phones, tablets and other digital electronic products. It is an AC to DC converter with combination of portable travel charger.

1.1. Description



USB CHARGER/ USB 充电器 / Fixed AC PLUG/固定插头



USB CHARGER/ USB 充电器 / Interchangeable AC PLUG/可互换插头

2. Input Characteristics

2.1	Input voltage range	90Vac - 264Vac
2.2	Normal voltage range	100Vac - 240Vac
2.3	Input frequency range	47Hz-63Hz
2.4	Rated input frequency	50Hz/60Hz
2.5	Max. input ac current	1.5Amax. at full load condition
2.6	Inrush current (cold start)	100Amax. @ 230Vac input
2.7	Efficiency (Average) (25%, 50%, 75%, 100%) VI	At 115/230Vac, 5V/3A
2.8	No-load power (At 115VAC/230VC	Less than 0.21W

3. Output Characteristics

3.1 Test project							
Type-C1 (Each 65W)	Port output	Min. (V)	Standard (V)	Max. (V)	Current (A)	Power (W)	Remarks
	5V Voltage	4.75	5.0	5.25	3.0	15W	
	9V Voltage	8.55	9.0	9.45	3.0	27W	
	12V Voltage	11.4	12.0	12.6	3.0	36W	
	15V Voltage	14.25	15.00	15.75	3.0	45W	
	20V Voltage	19.0	20.00	21..0	3.25	65W	
	20V/3.25A Type-C E-MARK 20V/3A,						

3.2 Test project							
Type-C2 (20W)	Port output	Min. (V)	Standard (V)	Max. (V)	Current (A)	Power (W)	Remarks
	5V Voltage	4.75	5.0	5.25	3.0	15W	
	9V Voltage	8.55	9.0	9.45	2.22	20W	
	12V Voltage	11.4	12.0	12.6	1.67	20W	

3.3 Test project			
Type-C1+Type-C2+USB A			
Type-C1	Type-C2		TOTAL
65.0W	NC		65.0W
NC	20.0W		20.0W
45.0W	15.0W		60.0W

3.4 Test project	
port output	Remarks
Single port short circuit protection	Any one short circuit will enter the hiccup protection mode, and the short circuit will automatically resume after disappearing.
Total output power	Total $\leq$ 65W
Turn on delay time	2S max. @ 115Vac to 230Vac input & Full load
Rise time	40mS Max.at 115Vac input and output Max load.
Hold up time	a. 5mS min. @ Full load &115Vac/60Hz input turn off at worst case b. 0mS min. @ Full load &230Vac/50Hz input turn off at worst case
Output Overshoot/ Undershoot	15% Max.When power supply at turn off/on.
Output Load Transient Response	Output voltage within $\pm$ 5% for load step from 25% to 50% to 25%,50% to 75% to 50% R/S: 0.25A/uS, Transient Response Recovery Time :200uS, Dynamic response overshoot 5%
Over voltage protection	The output voltage shall be clamped by internal protection IC
Over temperature protection	IC requires built-in over-temperature protection. When IC temperature exceeds 135 degrees, it must stop output automatically.
Total output short circuit power	When the output is short circuit, the power is less than 5W, but it will not damage the product. After the short circuit disappears, it will return to normal automatically.

3.5 Charging Protocol & Intelligent Identification

USB C1: ☒ Support Apple 2.4A and DCP 1.5A ☒ Support PD3.0 or PD2.0 & QC3+/QC4+ ☒ Support AFC / FCP ☒ Support SCP ☒ Support PPS	USB C2: ☒ Support Apple 2.4A and DCP 1.5A ☒ Support PD3.0 or PD2.0 ☒ Support AFC / FCP ☒ Support SCP ☒ Support PPS
---	--

3.6 Output ripple

5V output voltage ripple	250mV (Max)	Under a 25! °C environment, with standard input voltage, output at full load, an oscilloscope with a 20MHz bandwidth, and the device under test paralleled with a 0.1uF ceramic capacitor and a 10uF electrolytic capacitor.
9V output voltage ripple	200mV (Max)	
12V output voltage ripple	200mV (Max)	
15V output voltage ripple	200mV (Max)	
20V output voltage ripple	200mV (Max)	

4. Environment Requirements

4.1. Operating Temperature and Relative Humidity

-5°C to +40°C 10%RH to 90%RH

4.2. Storage Temperature and Relative Humidity

-20°C to +85°C

5%RH to 95%RH non-condensing @ Sea level shall be low 2,000 meter

4.3. Vibration

10 to 300Hz sweep at a constant acceleration of 1.0G (Breadth: 3.5mm) for 1Hour for each of the perpendicular axes X, Y, Z

4.4. Drop in

At the most disadvantageous angle, the fall height is 100cm, drop it to the hardwood board 3 times, the pin might be bent and the shell might be injured, but the appearance can not be structurally damaged and it should be working normally.

5. Reliability Requirements

5.1. Burn-in

The product must undergo 100% burning-in before shipment to ensure the quality.

5.2. MTBF

The MTBF shall be at least 30,000 hours at 25°C max and normal input condition

6. EMI/EMS Standards

6.1. EMI Standards/EMI

Certificate	Country	Standard
☐ FCC	USA/美国	☐ FCC PART 15B
☒ CE	Europe/欧洲	☒ EN55032 EN55035 EN61000-3-2 EN61000-3-3
☒ UKCA	UK / 英国	☒ BS EN55032 BS EN55024 BS EN61000-3-2 BS EN61000-3-3
☐ C-Tick	Australia/澳洲	☐ AS/NZS CISPR22
☐ KCC	Korea/韩国	☐ K32/K35
☐ PSE	Japan/日本	☐ J55032
☐ CCC	China/中国	☐ GB17625.1 ☐ GB9254

6.2. EMS Standards/EMS

6.2.1 EN 61000-4-2, electrostatic discharge (ESD) requirement

Discharge characteristic	Test level	Test criteria
Air discharge	+/-8KV	B
Contact discharge	+/-4KV	B

6.2.2 EN 61000-4-3, radiated electromagnetic field susceptibility (rs)

Test level	Test criteria
3V/m (r.m.s)	A
80-1000MHz, 80% AM(1KHz) sine-wave	

6.2.3 EN 61000-4-4, electric fast transients(burst) immunity requirement

Coupling	Test level	Test criteria
AC-input	0.5KV	A
AC-input	1KV	B

6.2.4 EN 61000-4-5, surge capability requirement

Surge voltage	Test criteria
Common mode +/-2KV	A
Differential mode +/-1KV	

6.2.5 EN 61000-4-6, Induced radio frequency fields conducted disturbances immunity Requirement

Test level	Test criteria
3V	A
0.15-80 MHz,80%AM(1KHz)	

6.2.6 Assessment criteria

Acceptance criteria	Performance
A	Agreed operational behavior within the specified limits
B	Time limited functional diminishment or malfunction during the tests is permitted. The function is self-reactivated by the unit following completion of the tests.
C	Malfunction is permitted .The function can be reactivated either by reconnection to the mains or by operator intervention.

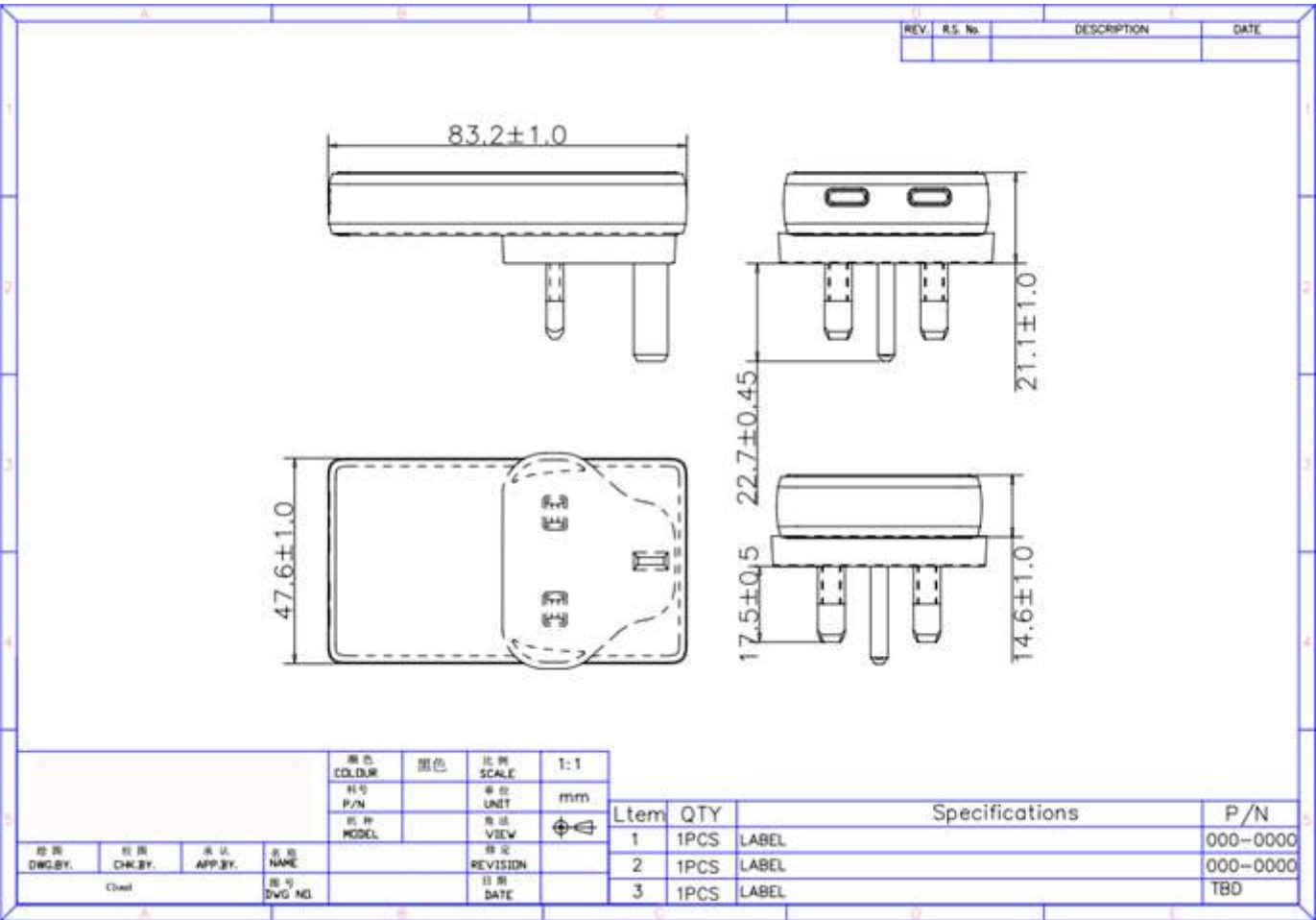
7. Safety Standards

- 7.1. Dielectric Strength (Hi-pot): Primary to Secondary 3000Vac / 5mA Max / 60 Second**
- 7.2. Leakage Current: 0.25mA Max at 264Vac/50Hz**
- 7.3 Insulation Resistance: 50MΩ min. at primary to secondary add 500Vdc test voltage**

7.4 Regulatory Standards

Certificate	Country	Standard			
☐ UL / cUL	USA	☐ UL62368-1	☐ UL60950-1	☐ UL60065	☐ UL1310
☐ ETL	USA	☐ UL62368-1	☐ UL60950-1	☐ UL60065	☐ UL1310
☐ GS	Germany	☐ EN62368-1	☐ EN60950-1	☐ EN60065	
☒ CE	Europe	☒ EN62368-1	☐ EN60950-1	☐ EN60065	
☒ UKCA	UK	☒ BS EN62368-1	☐ BS EN60950-1	☐ BS EN60065	
☐ SAA	Australia	☐ AS/NZS62368-1	☐ AS/NZS60950-1	☐ AS/NZS60065	
☐ PSE	Japan	☐ J62368-1	☐ J60950-1	☐ J60065	
☐ S-Mark	Argentina	☐ IEC62368-1	☐ IEC60950-1	☐ EC60065	
☐ CCC	China	☐ GB4943	☐ GB8898	☐ GB4706.1	
☐ KC	Korea	☐ K60950-1			
☐ BSMI	Taiwan	☐ CNS13438 & 14336-1			
☐ PSB	Singapore	☐ IEC62368-1	☐ IEC60950-1	☐ EC60065	
☐ CB	IECEE	☐ IEC62368-1	☐ IEC60950-1	☐ EC60065	

8 Match. Outline Drawing
UK USB C+USB C double port ultra-thin GaN PD charger (Black House)



shell material: ☒ PC: 120°C/ temperature resistance 120°C ☐
PC+ABS: 95°C/ temperature resistance 95°C

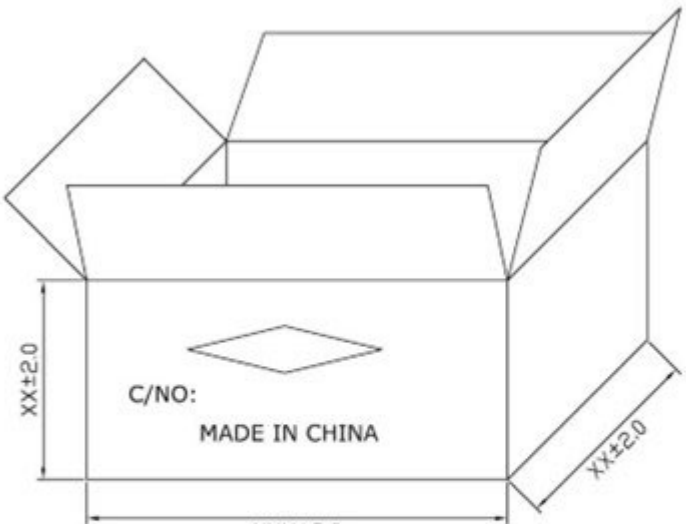
PC material meets the requirement of spherical pressure test.

9 I/O Marking Drawing

GaN Ultra-Thin Charger Model:MK-C0651UK-CCF Input:100-240V~50/60Hz 1.5A C1 Output:5.0V or 9.0V or 12.0V or 15.0V $\Rightarrow$ 3.0A, 20.0V $\Rightarrow$ 3.25A (PPS) 3.3-11V $\Rightarrow$ 5.0A C2 Output:5.0V $\Rightarrow$ 3.0A or 9.0V $\Rightarrow$ 2.22A or 12.0V $\Rightarrow$ 1.67A C1+C2:Output: 45W+15W	CONEXA TECH SOLUTIONS
     	
IMPORTER: Conexa Tech Solutions Ltd Shenzhen Merryking Electronics Co., Ltd.	YYMM MADE IN CHINA

1. Laser engraving
2. Clear engraving, wipe resistance
3. Compliance to RoHS.
4. YYMM means Date Code MM means Month
(like 01-12) YY means Year (like 20)

10 Package Drawing

A		B		C		D		E	
REV.		R.S. No.		DESCRIPTION		DATE			
 PE袋         P.O: P/N: QTY: PCS N.W.: KGS G.W.: KGS  NOTE: 1.1个主机用1个PE袋包装 2.PK箱标示尺寸为外部尺寸 3.PK箱印前后相同,左右相同,印刷颜色为黑色									
		颜色 COLOUR		比例 SCALE		1:1			
		料号 PIN		单位 UNIT		mm			
		名称 MODEL		角边 VIEW					
经手 OWN BY 日期 CHK BY 承认 APP BY 名称 NAME		料号 PIN 名称 MODEL		料号 SCALE 比例 UNIT		1:1			
料号 OWN NO.		料号 PIN		日期 DATE		20.07.28			