

SPECIFICATION FOR APPROVAL

CUSTOMER: _____

MODEL NO. : QI2QT-6128A1 / QI2QT-6128C1

PART NO. : _____

MODEL NAME: 15W MPP wireless charger module

REVISION: A2

DATE: _____

APPROVED SIGNATURES

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Model No.	QI2QT-6128A1 QI2QT-6128C1	Model Name	15W MPP wireless charger module
Part No.		Size	

Product Specification

产品规格书

Product name/产品名称: 15W MPP wireless charger module

Model No/ 产品型号: QI2QT-6128A1 / QI2QT-6128C1

File number /文件编号:

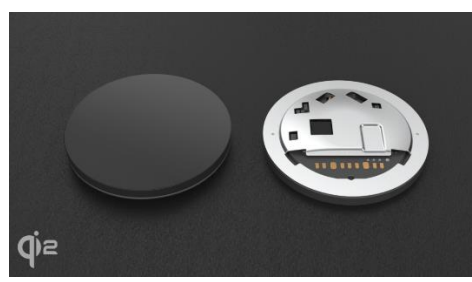
Revision/版本号: A1

Date/日期: 2023-10-03

QI2QT-6128A1



QI2QT-6128C1



APPROVED BY 批准	CHECKED BY 审核	DESIGNED BY 制作

Model No.	QI2QT-6128A1 QI2QT-6128C1	Model Name	15W MPP wireless charger module
Part No.		Size	

目录

Reversion History / 更新记录.....	4
1. Product Description / 产品描述	5
2. Product Characteristic / 产品特点	5
3. Performance Parameter/性能参数	5
4. Input power supply and wireless charger output power comparison table/输入电源与 无线充输出对照表.....	6
5. OVP and UVP protection condition / 过电压及欠电压保护条件	6
6. Module Product Center/模块产品内部描述	6
7. Environmental characteristic/环境特性	7
8. Module Assembly/模組內部結構	7
9. Module dimension/模块尺寸.....	8
10. PCBA function / PCBA 功能.....	8
11. LED light function/ LED 功能说明.....	9
12. Attentions- Power Delivery /注意事项-功率分配	9
13. Statement/声明	10

Model No.	QI2QT-6128A1 QI2QT-6128C1	Model Name	15W MPP wireless charger module
Part No.		Size	

Reversion History / 更新记录

Revision	Date	Changes
A0	2023. 9. 5	New release
A1	2023. 10. 3	1. Modified C223 Gaussian value 4100 to 3800 2. Added input power supply and wireless charger output power comparison table 3. Added OVP and UVP protection condition 4. Added LED light function
A2	2024. 4. 10	Modified UVP 8V to 7.5V Modified Performance Parameter Renew LED definition

Model No.	QI2QT-6128A1 QI2QT-6128C1	Model Name	15W MPP wireless charger module
Part No.		Size	

1. Product Description / 产品描述

QI2QT-6128A1 and QI2QT-6128C1 comply with MPP protocol of 15W magnetic wireless module. The product input supports USB PD 9V/2.22A; 5V/3A and DC power supply 9V/2.22A. The output functions support APPLE iPhone up to 15W wireless charging. The MPP module also meets Qi2.0 certification standard.

QI2QT-6128A1/C1 是一款符合 MPP 协议 15W 带有磁吸式无线充电模块，该产品输入端支持 USB PD 9V/2.22A; 5V/3A 以及 DC 电源输入 9V/2.22A，无线充电输出功能支持苹果手机 15W，符合 Qi2.0 认证标准。

2. Product Characteristic / 产品特点

- ◆ Comply with original Apple module C222/C223 standard.

符合原厂苹果模块 C222/C223 标准尺寸

- ◆ Qi2.0 certification standard.

符合 Qi2.0 认证标准

3. Performance Parameter/性能参数

Item	Parameter
Input Power	USB-C Mode: 9V-2.22A / 5V-3A DC Mode: 9V $\geq$ 2.22A / 5V $\geq$ 2.4A
Input Protocol	BC1.2/QC/PD protocol function
Output Power	15W Max
Standby power	<350mW
System Efficiency	80%
Output Protocol	MPP 1 5W / BPP 5 W /7.5W apple fast charge
Frequency	BPP:128KHz MPP:360KHz
Coil Type	MPP, 8.4uH@360KHz
Protection	OVP / UVP / OCP / OTP
FOD	Q test (pre-power transfer)/Power Transfer FOD
Interface Power	V+, V-, D+, D-, CC1
Other	SDA, SCL, LED1, LED2/CC2

Model No.	QI2QT-6128A1 QI2QT-6128C1	Model Name	15W MPP wireless charger module
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4. Input power supply and wireless charger output power comparison

table/输入电源与无线充输出对照表

Input power supply	Output wireless charger power
BC1.2, 5V±5% (1.5A<Iin<2.1A)	BPP 5W
BC1.2, 5V±5% (2.1A<Iin<2.4A)	BPP 5W/ AFC 7.5W/ MPP 7.5W
DC 5V±5% (Iin>2.4A)	BPP 5W/ AFC 7.5W/ MPP 7.5W
DC 9V±5% (Iin>2.22A)	BPP 5W/ AFC 7.5W/ MPP 15W
QC 9V±5% (Iin=1.67A)	BPP 5W/ AFC 7.5W/ MPP 10W
QC 9V±5% (Iin=2A)	BPP 5W/ AFC 7.5W/ MPP 12W
PD 5V±5% (Iin=3A)	BPP 5W/ AFC 7.5W/ MPP 7.5W
PD 9V±5% (Iin=2A)	BPP 5W/ AFC 7.5W/ MPP 10W
PD 9V±5% (2A<Iin<2.22A)	BPP 5W/ AFC 7.5W/ MPP 12W
PD 9V±5% (2.22A<Iin<3A)	BPP 5W/ AFC 7.5W/ MPP 15W
Noted:	
1. AFC for Samsung phone charging	

5. OVP and UVP protection condition / 过电压及欠电压保护条件

Input OVP Threshold	Input 9V	Trigger:10V ; Recover:9.5V
	Input 5V	Trigger:5.6V ; Recover:5.4V
Input UVP Threshold	Input 9V	Trigger:7.5V ; Recover:8.5V
	Input 5V	Trigger:4.2V ; Recover:4.5V

6. Module Product Center/模块产品内部描述

Item	QI2QT-6128A1 (Comply with APPLE C222 module)	QI2QT-6128C1 (Comply with APPLE C223 module)
Top cover Color	Black/White	Black/White
OD	58.56mm	57.98mm
Thickness of module	7.9mm	7.57mm
Thickness of magnet	1.1mm	1.15mm
Thickness of DC shield	0.7mm	1.0mm
Magnet Qty.	16PCS	17PCS
Magnet Mode	N48H	N48H
Gaussian value	3600±100Gs	3800±100Gs

Model No.	QI2QT-6128A1 QI2QT-6128C1	Model Name	15W MPP wireless charger module
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Magnet Dimension	$\varnothing 54.1\text{mm} \times \varnothing 46.0\text{mm}$ (Width: 4.05mm)	$\varnothing 56.10\text{mm} \times \varnothing 46.00\text{mm}$ (Width: 5.05mm)
Nominal force value	900gf	1100gf

7. Environmental characteristic/環境特性

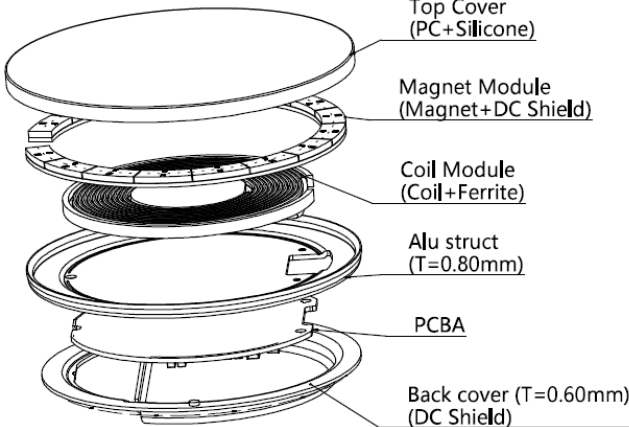
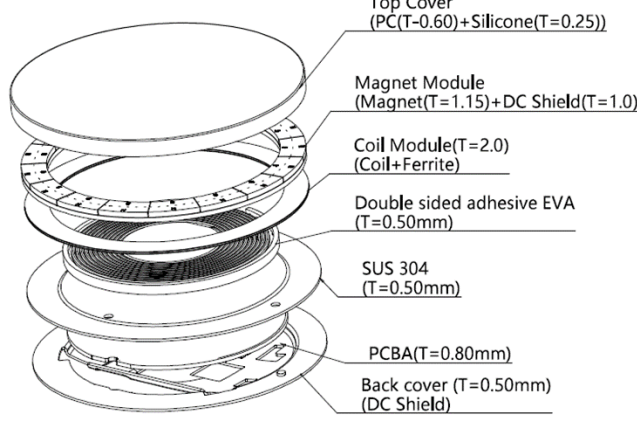
7.1 Operating Temperature and Humidity

Item	Requirements			
	MIN	TYP.	MAX	Units
Operating Temperature	-10	-	+40	°C
Operating Humidity	10	-	90	%RH

7.2 Operating Temperature and Humidity

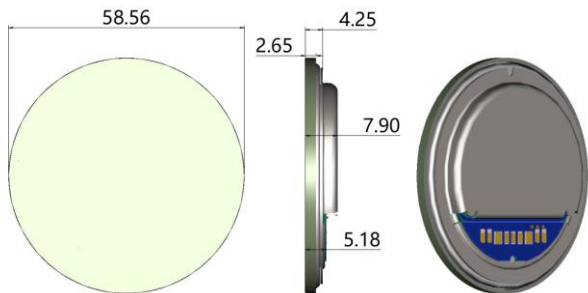
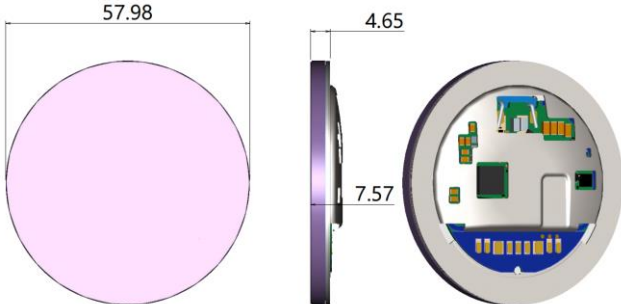
Item	Requirements			
	MIN	TYP.	MAX	Units
Storage Temperature	-20	-	+70	°C
Storage Humidity	5	-	95	%RH

8. Module Assembly/模組內部結構

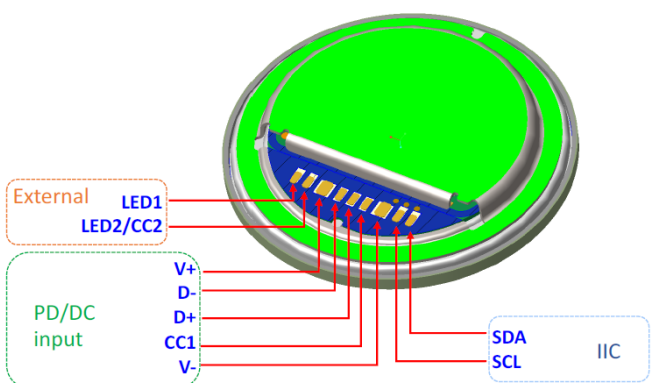
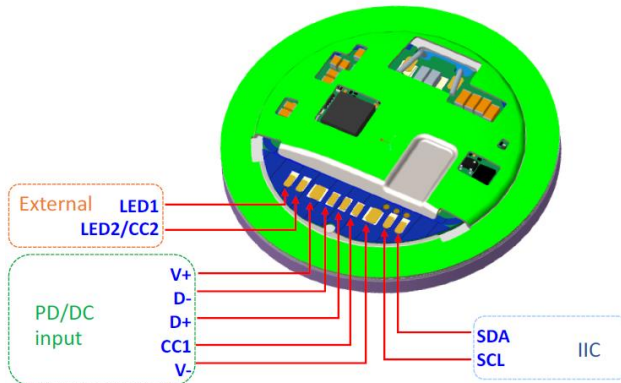
QI2QT-6128A1 (Compatible with APPLE C222 module)	QI2QT-6128C1 (Compatible with APPLE C223 module)
 Top Cover (PC+Silicone) Magnet Module (Magnet+DC Shield) Coil Module (Coil+Ferrite) Alu struct (T=0.80mm) PCBA Back cover (T=0.60mm) (DC Shield)	 Top Cover (PC(T=0.60)+Silicone(T=0.25)) Magnet Module (Magnet(T=1.15)+DC Shield(T=1.0)) Coil Module(T=2.0) (Coil+Ferrite) Double sided adhesive EVA (T=0.50mm) SUS 304 (T=0.50mm) PCBA(T=0.80mm) Back cover (T=0.50mm) (DC Shield)

Model No.	QI2QT-6128A1 QI2QT-6128C1	Model Name	15W MPP wireless charger module
Part No.		Size	

9. Module dimension/模块尺寸

QI2QT-6128A1 (Compatible with APPLE C222)	QI2QT-6128C1 (Compatible with APPLE C223)
 Top view: 58.56 mm diameter. Side view: 2.65 mm (height), 4.25 mm (top flange), 7.90 mm (bottom flange), 5.18 mm (base). Bottom view: Shows the charging coil and connector pins.	 Top view: 57.98 mm diameter. Side view: 4.65 mm (height), 7.57 mm (bottom flange). Bottom view: Shows the internal circuitry and connector pins.

10. PCBA function / PCBA 功能

QI2QT-6128A1 (Compatible with APPLE C222)	QI2QT-6128C1 (Compatible with APPLE C223)
 External LED1 LED2/CC2 PD/DC input V+ D- D+ CC1 V- SDA SCL IIC	 External LED1 LED2/CC2 PD/DC input V+ D- D+ CC1 V- SDA SCL IIC

Model No.	QI2QT-6128A1 QI2QT-6128C1	Model Name	15W MPP wireless charger module
Part No.		Size	

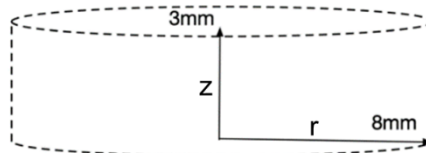
11. LED light function/ LED 功能说明

User can connect a LED anode to the LED 1 pad There is a 1K Ω resistor connect LED1 pad in TX module, and the high Voltage of this pad is 5V, and the low Voltage of this pad is 0V. The LED indicate as below

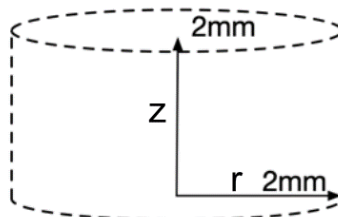
States	Operation
Start-up(Power on)	on then off
Standby	off
Charging	on
Fully charged	on
Error	Blink-1Hz

12. Attentions- Power Delivery /注意事项-功率分配

12.1 The PTx shall provide a BPP PRx with at least 5W of rectified power for $0\text{mm} \leq z \leq 3\text{mm}$, $0\text{mm} \leq r \leq 8\text{mm}$, see below figure.

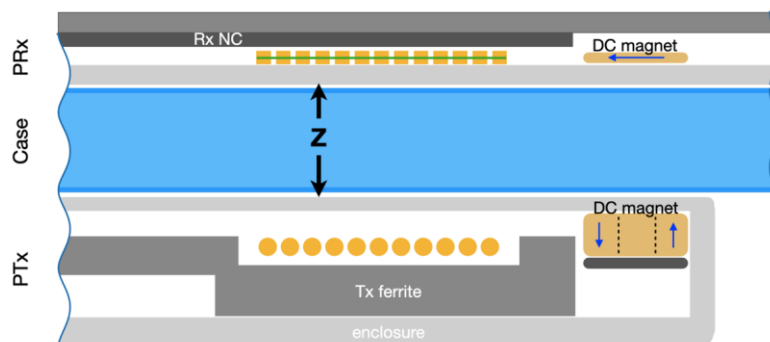


12.2 The PTx shall provide a MPP PRx with at least 15W of rectified power inside the 2x2 cylinder ($0\text{mm} \leq z \leq 2\text{mm}$, $0\text{mm} \leq r \leq 2\text{mm}$), see below figure.



12.3 The PTx shall provide a MPP PRx with at least 5W of rectified power for $0 \leq z \leq 3\text{mm}$, $0\text{mm} \leq r \leq 4\text{mm}$

Model No.	QI2QT-6128A1 QI2QT-6128C1	Model Name	15W MPP wireless charger module
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z: distance from transmitter surface to receiver surface
Coil-to-coil distance is larger than z.

13. Statement/声明

All rights reserved by LinkCom Manufacturing Co., Ltd. for all this specification for approval. About warranty, please refer to LinkCom company warranty policy. -----