



芯高科技
HIGH TECH
TECHNOLOGY LIMITED

HT6328 65W / 35W + 35W DC模組 雙通道分配電流(不用 MCU)

應用注解

Application Note (version 02)

雙輸出充電器模組
測試單元: 21030501

2021/3/8 | 機密文件

這個文件內所有信息、產品圖片和顯示內容僅供參考。實際產品功能、成本和規格等(包括但不限於外觀、顏色和尺寸)以及實際顯示內容(包括但不限於背景、UI和圖標)可能會因時間及實際情況有所差異。這個文件內所有數據及比較是在特定情況下對比市面部份同類產品。均為內部實驗室通過特定條件下進行的測試獲得的理論值。如實際充電時間及快充模式兼容性等是可能因客觀環境而變化。所有結果會因此出現差異。由於個別產品、軟件版本、應用條件和環境因素的差異。實際數據可能會有所不同。所有數據因實際使用而有所不同。受條款及細則約束。請參閱上述產品詳細和規格。有關更多信息、文件內容、產品信息、價格等如有更改。恕不另行通知。
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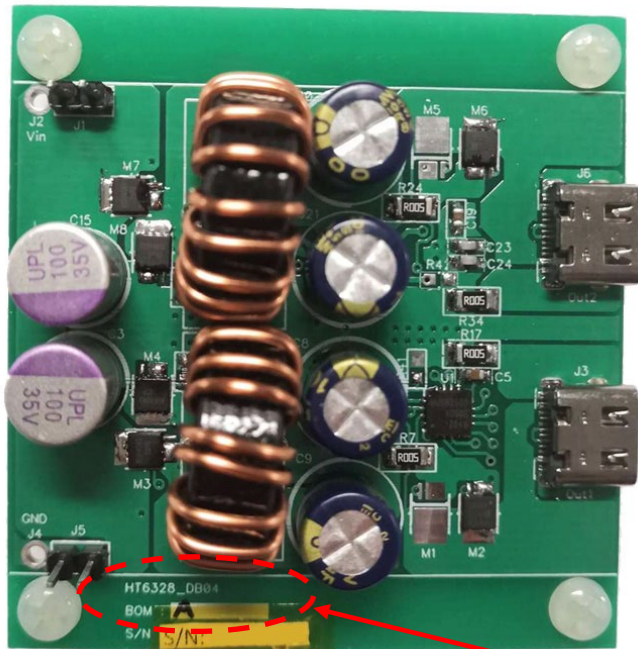
1. 演示板介紹

HT6328 65W / 35W + 35W DC模組
雙通道分配電流 (不用 MCU)



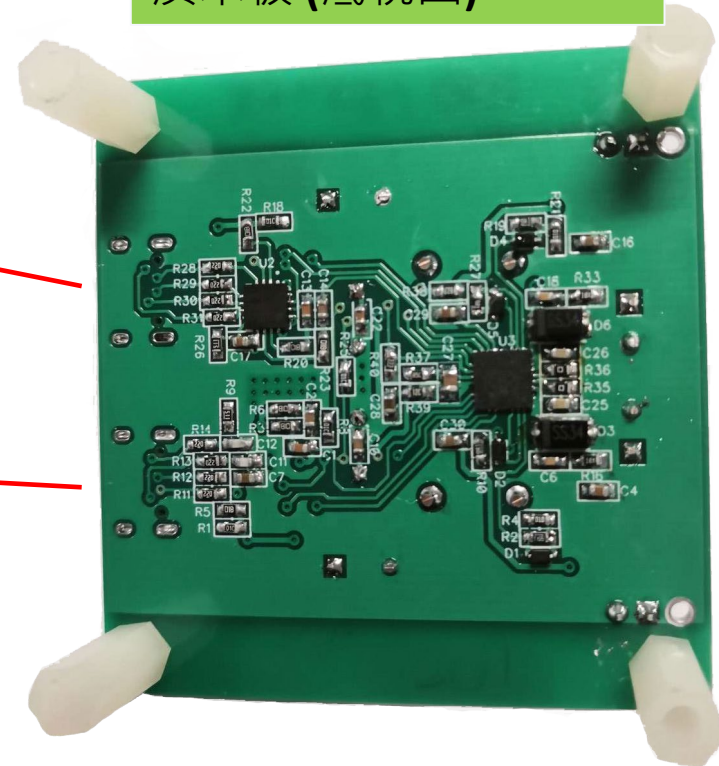
- 演示板 (測試單元 : 21030501)
- 尺寸: 57mm(長) x 55mm(闊) x 25mm(高)

演示板 (頂視圖)



HT6328_DB04

演示板 (底視圖)



輸出 1

輸出 2

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2. 摘要

HT6328 65W / 35W + 35W DC模組 雙通道分配電流 (不用 MCU)



操作模式:	Ch1	Ch2
輸入電壓範圍	12V to 24V	
輸出電壓和電流範圍 (最大輸出功率是 35W + 35W)	(5V 3A), (9V 3A), (12V 3A), (15V 3A) *, (20V 3.25A) *, (11V 3A), (3.3V 3A)	(5V 3A), (9V 3A), (12V 3A), (15V 3A) *, (20V 3.25A) *, (11V 3A), (3.3V 3A)
尺寸	57mm(長) X 55mm(闊) X 25mm(高)	
最大輸出功率 (單輸出)	65	65
最大輸出功率(雙輸出)	35W+35W	
負載調節(Load Regulation)準確度	輸出電壓在不同負載下準確度達 94%#	
最大功率轉換效率	96%	96%
短路(Short Circuit)測試	✓	

* For 24Vin

Definition: (Actual Vout / Target Vout) %

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3. 測試規格



輸入電壓

12V to 24V

輸出電壓和電流 (單通道)

- CH1
 - 5 V, 0 – 3A (15 W)
 - 9 V, 0 – 3 A (27 W)
 - 12 V, 0 – 3 A (36 W)
 - 15 V, 0 – 3 A (45 W) (只適用於 Vin=24V)
 - 20 V, 0 – 3.25 A (65 W) (只適用於 Vin=24V)
 - 11 V, 0 – 3 A (33 W) (PPS Mode)
 - 3.3 V, 0 – 3 A (9.9 W) (PPS Mode)
- CH2
 - 5 V, 0 – 3A (15 W)
 - 9 V, 0 – 3 A (27 W)
 - 12 V, 0 – 3 A (36 W)
 - 15 V, 0 – 3 A (45 W) (只適用於 Vin=24V)
 - 20 V, 0 – 3.25 A (65 W) (只適用於 Vin=24V)
 - 11 V, 0 – 3 A (33 W) (PPS Mode)
 - 3.3 V, 0 – 3 A (9.9 W) (PPS Mode)

輸出電壓和電流 (雙通道 – 每通道)

- CH1
 - 5 V, 0 – 3A (15 W)
 - 9 V, 0 – 3 A (27 W)
 - 12 V, 0 – 2.92 A (35 W)
 - 15 V, 0 – 2.33 A (35 W) (只適用於 Vin=24V)
 - 20 V, 0 – 1.75 A (35 W) (只適用於 Vin=24V)
 - 11 V, 0 – 3 A (33 W) (PPS Mode)
 - 3.3 V, 0 – 3 A (9.9 W) (PPS Mode)
- CH2
 - 5 V, 0 – 3A (15 W)
 - 9 V, 0 – 3 A (27 W)
 - 12 V, 0 – 2.92 A (35 W)
 - 15 V, 0 – 2.33 A (35 W) (只適用於 Vin=24V)
 - 20 V, 0 – 1.75 A (35 W) (只適用於 Vin=24V)
 - 11 V, 0 – 3 A (33 W) (PPS Mode)
 - 3.3 V, 0 – 3 A (9.9 W) (PPS Mode)

雙路輸出的總輸出電流及功率

- 最大總輸出電流為 6 A
- 總功率最高為70 W (35W + 35W)

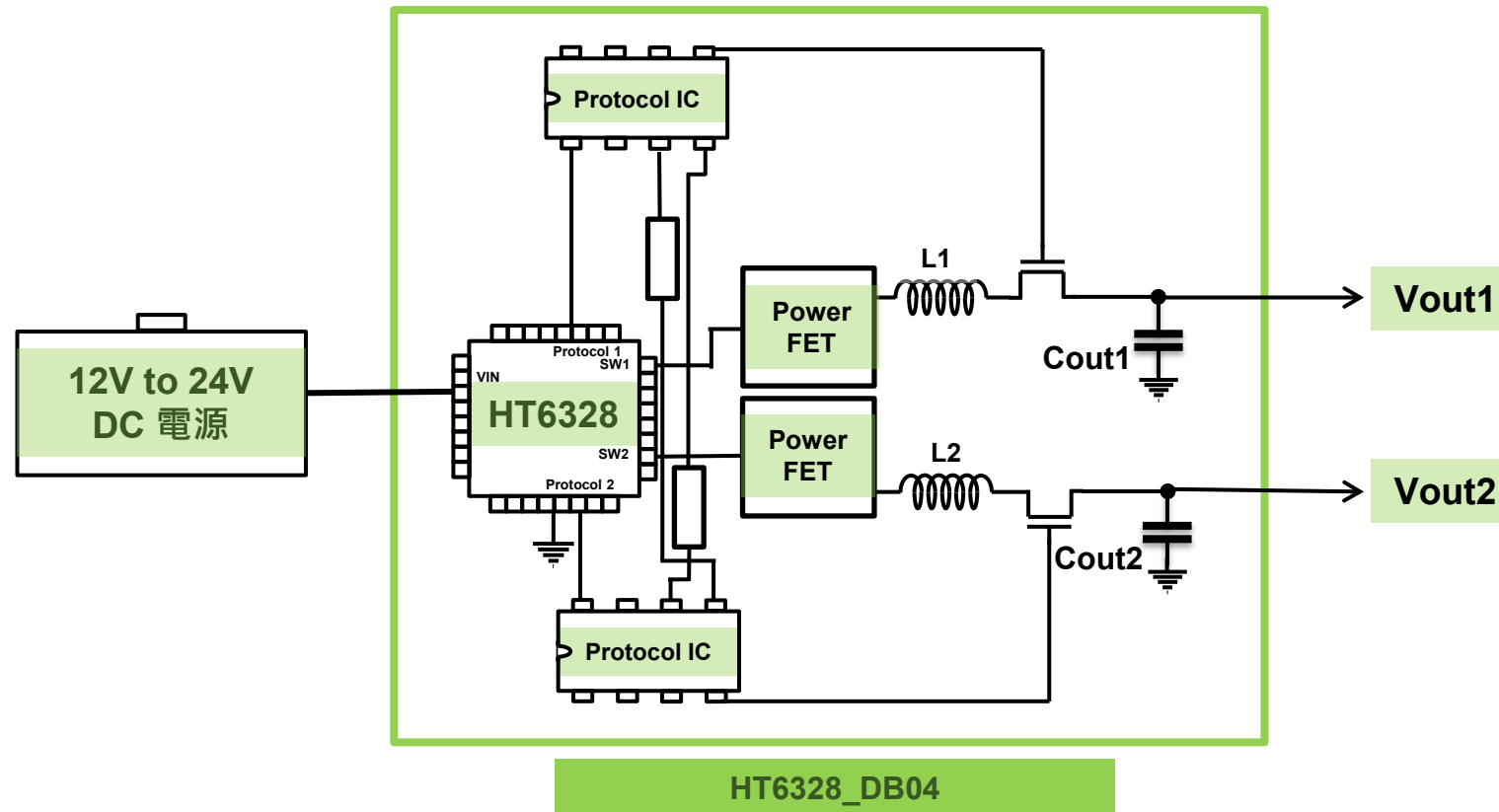
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雙通道分配電流 (不用 MCU)



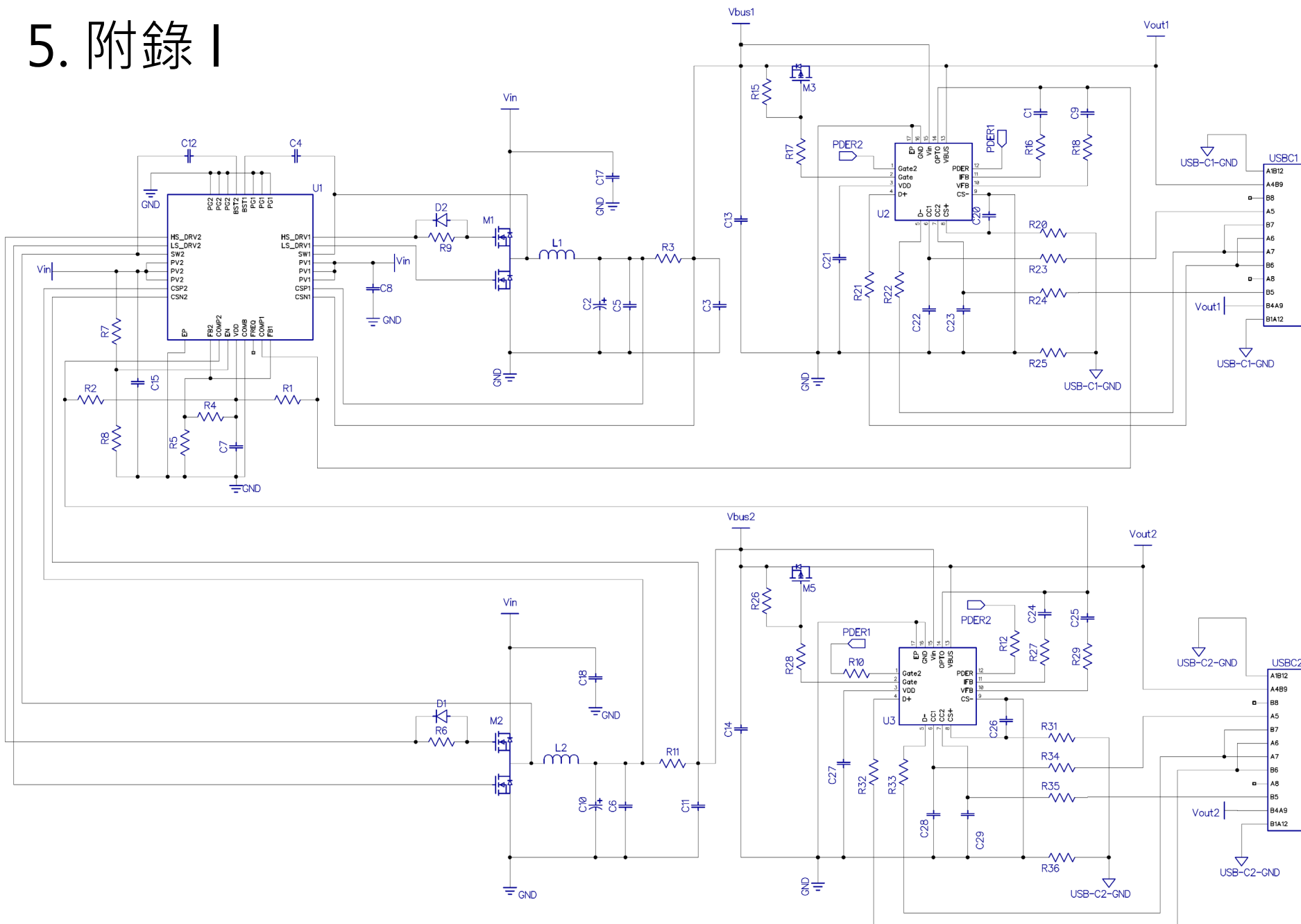
設計簡約*



* 有關完整的電路圖，請參見附錄I。

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5. 附錄 I



**HT6328 65W, or
35W + 35W
DC模組
雙通道分配電流
(不用 MCU)**

進行的測試獲得的理論值，如實際充電時間及快充模式兼容性等是可能因客觀環境而

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tion conditions and environment factor in individual product may lead to differ in

The USB output voltage is programmable by the USB350 protocol IC, and the opto pin of the HUSB350 is connected to the 6328 COMP pin which is the error amplifier output to maintain the output voltage regulation.

6. 附錄 II

HT6328 65W / 35W + 35W DC 模組 雙通道分配電流 (不用 MCU)



• 演示板物料

RefDes	Name	Type	Value	Package
Capacitor				
C11	CAP_0603	Cap	330p	0603
C12	CAP_0603	Cap	330p	0603
C23	CAP_0603	Cap	330p	0603
C24	CAP_0603	Cap	330p	0603
C6	CAP_0603	Cap	1n	0603
C18	CAP_0603	Cap	1n	0603
C1	CAP_0603	Cap	8.2n	0603
C13	CAP_0603	Cap	8.2n	0603
C25	CAP_0603	Cap	100n	0603
C26	CAP_0603	Cap	100n	0603
C2	CAP_0603	Cap	470n	0603
C14	CAP_0603	Cap	470n	0603
C4	CAP_0603	Cap	1u	0603
C5	CAP_0603	Cap	1u	0603
C7	CAP_0603	Cap	1u	0603
C10	CAP_0603	Cap	1u	0603
C16	CAP_0603	Cap	1u	0603
C17	CAP_0603	Cap	1u	0603
C19	CAP_0603	Cap	1u	0603
C22	CAP_0603	Cap	1u	0603
C28	CAP_0603	Cap	1u	0603
C29	CAP_0603	Cap	1u	0603
C30	CAP_0603	Cap	1u	0603
C27	CAP_0805	Cap	4.7u	0805
C3	100uF 35V 3.5/8.5h12	Ecap	100u	
C8	330uF 35V 5/10x13	Ecap	100u	
C9	330uF 35V 5/10x13	Ecap	100u	
C15	100uF 35V 3.5/8.5h12	Ecap	100u	
C20	330uF 35V 5/10x13	Ecap	100u	
C21	330uF 35V 5/10x13	Ecap	100u	
Diode				
D1	BAS316	Diode	BAS316	SOD-323
D2	BAS316	Diode	BAS316	SOD-323
D3	SMA	Diode	SS34A	
D4	BAS316	Diode	BAS316	SOD-323
D5	BAS316	Diode	BAS316	SOD-323
D6	SMA	Diode	SS34A	
Connector				
J1	P2/2.54	Connector	Vin	HDR-1x2T/2.54
J3	Type-C-16p	Connector	Out1	Type-C-16p
J5	P2/2.54	Connector	GND	HDR-1x2T/2.54
J6	Type-C-16p	Connector	Out2	Type-C-16p
Inductor				
L1	13mm_H	Inductor	22u	17mm_H
L2	13mm_H	Inductor	22u	17mm_H
FET				
M1	PMOS_PDFN3333	P-MOS	Nil	PDFN3333
M2	PMOS_PDFN3333	P-MOS	SIS27DN	PDFN3333
M3	NMOS_PDFN3333	N-MOS	RUH4040	PDFN3333
M4	NMOS_PDFN3333	N-MOS	RUH4040	PDFN3333
M5	PMOS_PDFN3333	P-MOS	Nil	PDFN3333
M6	PMOS_PDFN3333	P-MOS	SIS27DN	PDFN3333
M7	NMOS_PDFN3333	N-MOS	RUH4040	PDFN3333
M8	NMOS_PDFN3333	N-MOS	RUH4040	PDFN3333

RefDes	Name	Type	Value	Package
Resistor				
R35	RES_0603	Res	0	0603
R36	RES_0603	Res	0	0603
R2	RES_0603	Res	9R1	0603
R10	RES_0603	Res	9R1	0603
R19	RES_0603	Res	9R1	0603
R27	RES_0603	Res	9R1	0603
R16	RES_0603	Res	15	0603
R33	RES_0603	Res	15	0603
R11	RES_0603	Res	22	0603
R12	RES_0603	Res	22	0603
R13	RES_0603	Res	22	0603
R14	RES_0603	Res	22	0603
R28	RES_0603	Res	22	0603
R29	RES_0603	Res	22	0603
R30	RES_0603	Res	22	0603
R31	RES_0603	Res	22	0603
R9	RES_0603	Res	510	0603
R26	RES_0603	Res	510	0603
R3	RES_0603	Res	1k	0603
R5	RES_0603	Res	1k	0603
R6	RES_0603	Res	1k	0603
R20	RES_0603	Res	1k	0603
R22	RES_0603	Res	1k	0603
R23	RES_0603	Res	1k	0603
R1	RES_0603	Res	10k	0603
R18	RES_0603	Res	10k	0603
R39	RES_0603	Res	13k	0603
R8	RES_0603	Res	16k	0603
R25	RES_0603	Res	16k	0603
R40	RES_0603	Res	33k	0603
R37	RES_0603	Res	75k	0603
R38	RES_0603	Res	82k	0603
R4	RES_0603	Res	100k	0603
R15	RES_0603	Res	100k	0603
R21	RES_0603	Res	100k	0603
R32	RES_0603	Res	100k	0603
R41	RES_0603	Res	Nil	0603
R42	RES_0603	Res	Nil	0603
R7	RES_1206	Res	5m	1206
R17	RES_1206	Res	5m	1206
R24	RES_1206	Res	5m	1206
R34	RES_1206	Res	5m	1206
IC				
U1	HT6328	IC	HT6328	QFN32
U2	HUSB350		HUSB350(65W)	QFN-16/4x4
U3	HUSB350		HUSB350(65W)	QFN-16/4x4

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HIGH TECH
TECHNOLOGY LIMITED

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