USB PD3.0 快充协议控制芯片

产品概述

UC2206芯片选择性的兼容 主流的充电协议. 芯片可以智能的识别插入的手机 类型, 使用 PD 协 议或者 TYPEC 协议对手机快充. UC2206提供可以选择 PDO 的 EN_DRV 脚. UC2206 仅需要外部 供电电阻和电容,不需要其他外围,应用方案极简,BOM成本极低.

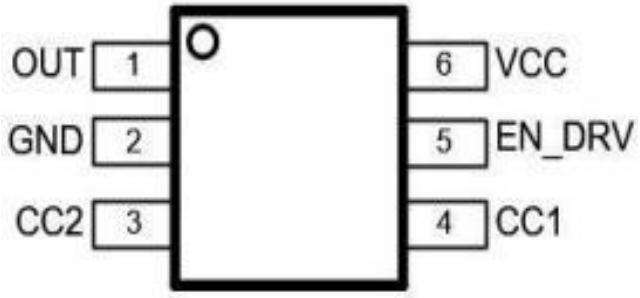
产品特征

- 兼容多类USB Type-C协议，包括TypeC协议，PD2.0，PD3.0协议
- 支持多种PDO功率： 18W/20W/25W
- 无需外置MOSFET，无需复杂外围，应用极简，BOM成本极低
- CC1 CC2引脚耐压12V
- 封装：SOT23-6

应用范围

- 适配器
- 车载充电器
- 移动电源
- USB电源插口

封装和 PIN 脚定义



SOT23-6L

订单信息

Part Number	Package Type	Package Qty	Op Temp(° C)
UC2206	SOT23-6	3000	-40~85

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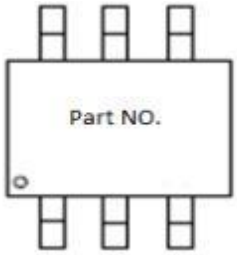
MARK INFORMATION



ABSOLUTE MAXIMUM RATINGS (1)

Over recommended operating free-air temperature range (unless otherwise noted)

PARAMETER		MIN	MAX	UNIT
supply voltage range	VCC, FB	-0.3	6	V
Input voltage range	CC1, CC2	-0.3	12	
ESD rating, Human Body Model (HBM)	VCC		6	kV
	FB, CC1,CC2, EN_DRV		6	
Operating Junction Temperature	T_J	-40	125	℃
Storage Temperature Range	T_{stg}	-65	150	

(1) Stresses beyond those listed under Absolute Maximum Ratings may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated under Recommended Operating Conditions is not implied. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.

THERMAL CHARACTERISTICS

over operating free-air temperature range (unless otherwise noted)

THERMAL METRIC			UNIT
θ_{JA}	Package thermal impedance(1)	180	° C/W

(1) The package thermal impedance is calculated in accordance with JESD 51-7.

RECOMMENDED OPERATING CONDITIONS

PARAMETER		MIN	MAX	UNIT
V_{CC}	Input voltage of IN	4.5	5.5	V
FB		0	3.	
CC1, CC2, EN_DRV		0	VCC	
T_J	Operating Junction Temperature	-40	125	℃

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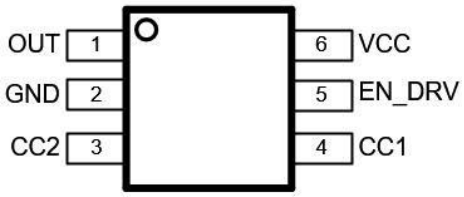
PINOUT



PIN FUNCTIONS

名称	脚位	描述
OUT	1	连接到电源系统的回授参考点
GND	2	芯片地，接到系统地
CC2	3	TYPEC 连接器 CC2 引脚
CC1	4	TYPEC 连接器 CC2 引脚
EN_DRV	5	外置对地电阻用于功率设定
VCC	6	连接到 USB 端子 VCC

(1) G = Ground, I = Input, O = Output, P = Power

ELECTRICAL CHARACTERISTICS

Conditions are -40°C ≤ (T_J=T_A) ≤ 125°C and 4.5 V ≤ VCC ≤ 5.5 V unless otherwise noted. Typical value is at 25°C. All voltages are with respect to GND unless otherwise noted.

Characteristics	Symbol	Conditions	MIN	TYP	MAX	Unit
Supply Input						
Supply Voltage Range	VCC		3.3		5.6	V
Input UVLO Threshold	VUVLO	VCC rising.		2.9		V
Input UVLO Hysteresis		VCC falling.		0.2		V
VCC Supply Current	ICC	VCC = 5.0V, PD contract valid		1		mA
VCC Shunt Voltage	VCC_SHDN			5.8		V

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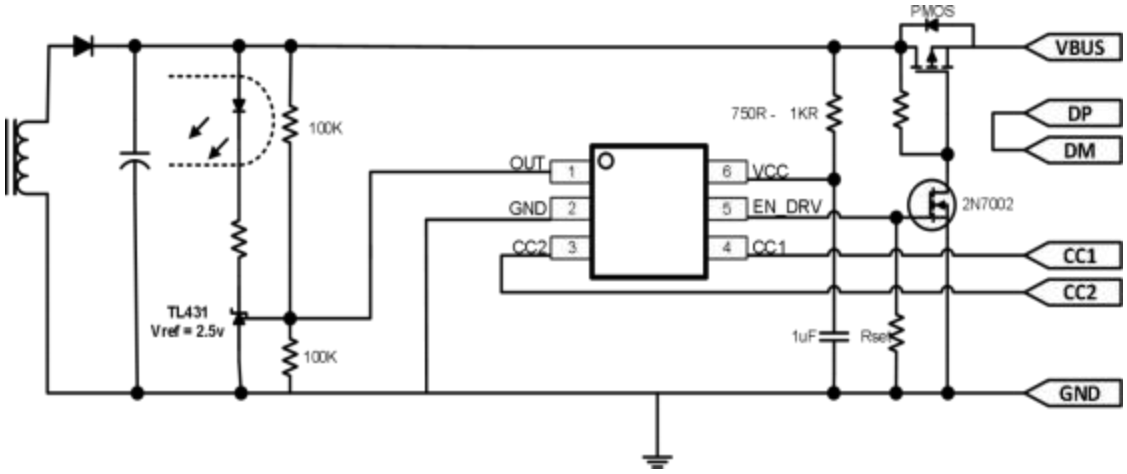
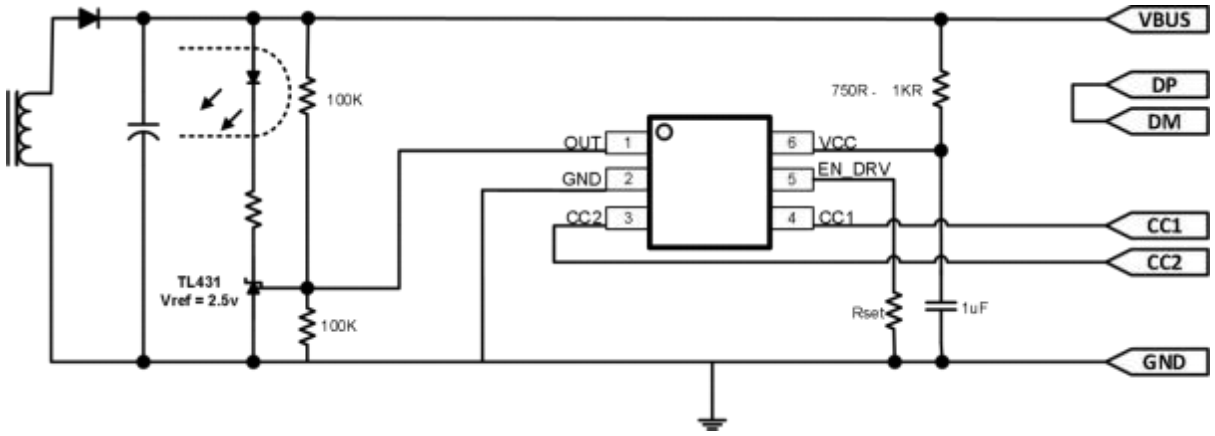
APPLICATION CIRCUIT



配置 MOS 管做关断



不配 MOS 低成本应用方案

Rest 设置参数	PD 功率表
0R=18W	5V3A, 9V2A, 12V1.5A
160K=25W	5V3A, 9V2.77A
390K=20W	5V3A, 9V2.22A, 12V1.67A
620K=20W	5V3A, 9V2.22A
接空=18W	5V2.4A, 9V2A

PACKAGE INFORMATION

SOT23-6