

Maximum output 24W , Integrate various fast charge output protocols

(DCP/QC2.0/QC3.0/FCP/AFC/SFCP/SCP) of SOC IC

## 1 characteristic

- **Synchronous switching buck converter**
  - Built-in power MOS
  - Input voltage range: 10.5V To 28V
  - Output voltage range: 3V To 12V , According to the fast charge agreement auto-adjust
  - Output power: maximum 36W ( 3V@3A , 5V@3A , 9V@2.5A , 12V@2A Wait)
  - Output voltage cable compensation function
  - Output has CV/CC Characteristics (the output current is less than the setting Value, output CV Mode; the output current is greater than the set value, Output CC mode)
  - Conversion efficiency up to 97.5%
  - Soft start function
  - The switching frequency can be set by an external resistor
- **Output fast charge**
  - stand by DCP protocol
  - Support Qualcomm QC2.0 with QC3.0
  - Support Huawei fast charge protocol FCP with SCP
  - Support Samsung fast charge protocol AFC
  - Support Spreadtrum Quick Charge Agreement SFCP
- **Multiple protection, high reliability**
  - Output overcurrent, input overvoltage, input undervoltage, short output Road protection
  - Whole machine over-temperature protection
  - ESD 4KV , DC withstand voltage 48V

## 2 application

- **Car charger**
- **Fast charge adapter**
- **Intelligent power strip**

## 3 Introduction

IP6505 It is a step-down converter with integrated synchronous switch, support hold 10 A kind of output fast charging protocol, suitable for car charger and fast charging Sockets and intelligent power strips provide a complete solution.

IP6505 Built-in power MOS , The input voltage range is 10.5V To 28V , The output voltage range is 3V To 12V , The maximum can provide 24W The output power can be automatically based on the recognized fast charge protocol Adjust the output voltage and current. Typical output voltage and current are: 3V@3 A , 5V@3A , 7V@3A , 9V@2.5A , 12V@2A .

IP6505 The buck conversion efficiency is as high as 97.5% .

IP6505 The output has CV/CC Characteristics, when the output current Less than the set value, output CV Mode, the output voltage is constant; when the output The output current is greater than the set value, output CC Mode, the output voltage decreases.

IP6505 The output voltage has line compensation function, the output current increases The output voltage will be increased accordingly to compensate for the impedance of the connecting The voltage dropped from the start.

IP6505 With soft start function, it can prevent the shock during start The shock current affects the stability of the input power supply.

IP6505 Integrate various fast charging protocols, which can be passed DP/DM To automatically identify the fast charging protocol supported by the output terminal access device, Then automatically adjust the output voltage and current. IP6505 Supported Fast Charge Association There are: DCP (Apple, Samsung and BC1.2 ),Qualcomm QC2.0/QC3.0 , Huawei Fast Charge Agreement FCP/SCP , Spreadtrum Quick Charge protocol SFCP .

IP6505 There are multiple protection functions, with input overvoltage and undervoltage Protection, output over current, over voltage, under voltage, short circuit protection and other functions

IP6505 use ESOP8 Package.

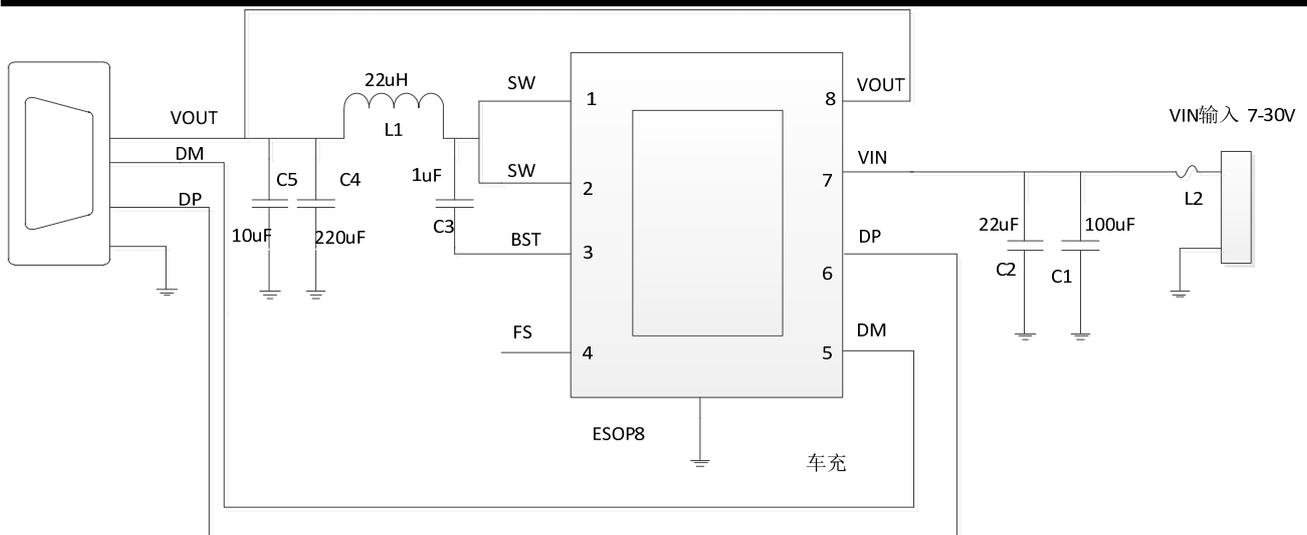


Figure 1 IP6505 Simplified application schematic

## 4 Pin definition

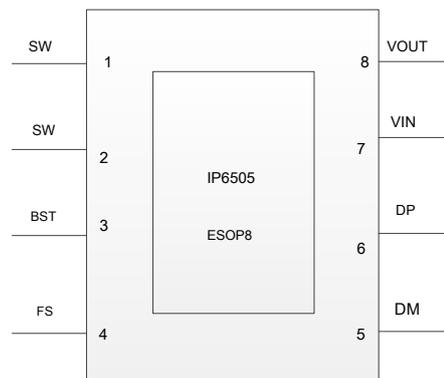


Figure 2 IP6505 Pin diagram

### PIN List

Pin		description
Serial number	name	
1 , 2	SW	DCDC Switch node, connect inductor
3	BST	Bootstrap circuit pins, close to the chip BST Pin and LX A bootstrap capacitor is placed on the pin to provide voltage for the gate drive of the upper tube
4	FS	Frequency adjustment PIN , External resistor adjusts the frequency, can be suspended
5	DM	USB Fast charge identification signal DM
6	DP	USB Fast charge identification signal DP
7	VIN	Input voltage pin, close to IC Need to place filter capacitor, recommended 22uF
8	VOUT	Output voltage feedback pin
9(EPAD)	GND	Power ground and heat dissipation ground, need to keep GND Good contact