



## High Tech Technology Limited (HTT)

60W Car Charger Solution  
Dual output, USB and Type-C

Preliminary Specifications

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# Preliminary Specification

- Dual USB channel car charger.
- USB fast charging module built with HTT dual channel DC-DC buck controller/converter:
  - DC Input 12V~24V
  - 1 USB and 1 Type-C outputs
  - USB support QC3.0 protocol, Type-C support PD3.0 and QC3.0 protocol.
  - Fast charge two devices simultaneously.
  - Output power: single channel maximum 60W, dual channels maximum 18W + 45W
  - Overall power maximum 60W

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# Introduction to HTT chips and USB applications

## HT6000 series

High efficiency, external MOSFET dual step-down DC-DC controller

- Input voltage : 5V~36V
- External MOSFETs
- Selectable switching frequency
  - › 150kHz , 250kHz , 350kHz
- Support CC/CV mode
- Soft start
- EMI dithering (Patent granted)

**HT6329**

External feedback in both channels  
Support Combined mode

(Suitable for dual Type-C solutions)

**HT6122**

One channel has QC3.0 protocol  
External feedback for other channel

(Suitable for Type-A + Type-C solutions)

## HT5350

USB Type-C and PD source controller

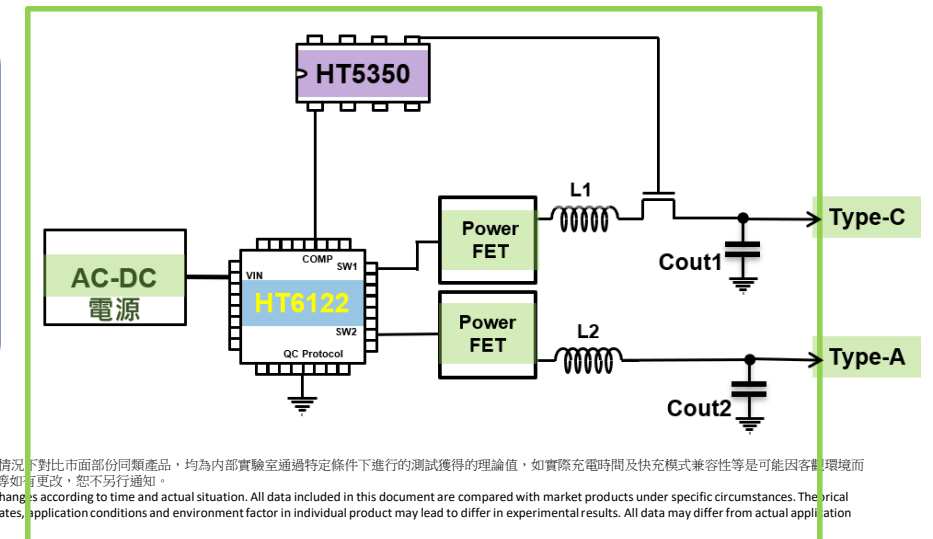
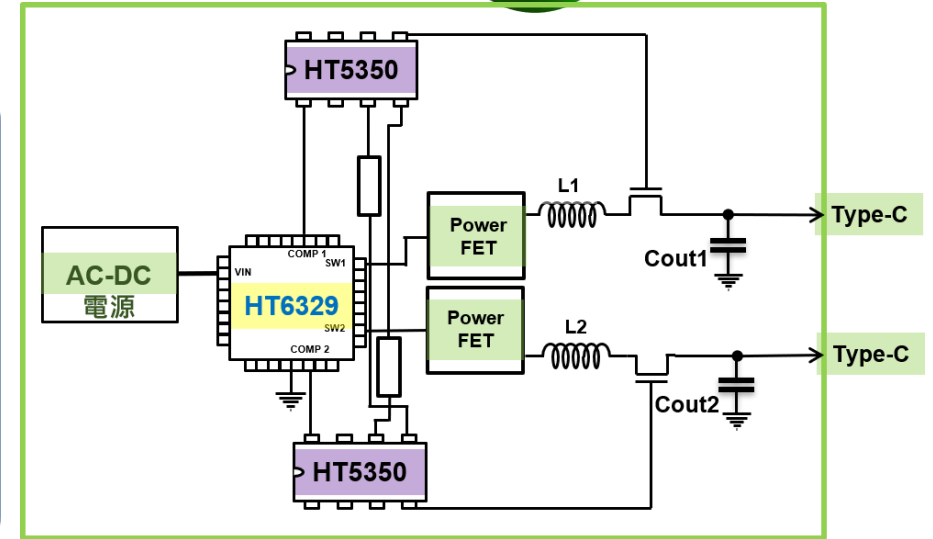
- Supports USB PD3.0 protocol
- Support QC2.0/QC3.0, BC1.2 DCP protocol
  - Apple 5V, 2.4A mode, BC1.2 DCP mode
  - FCP and AFC fast charging modes

**HT5350**

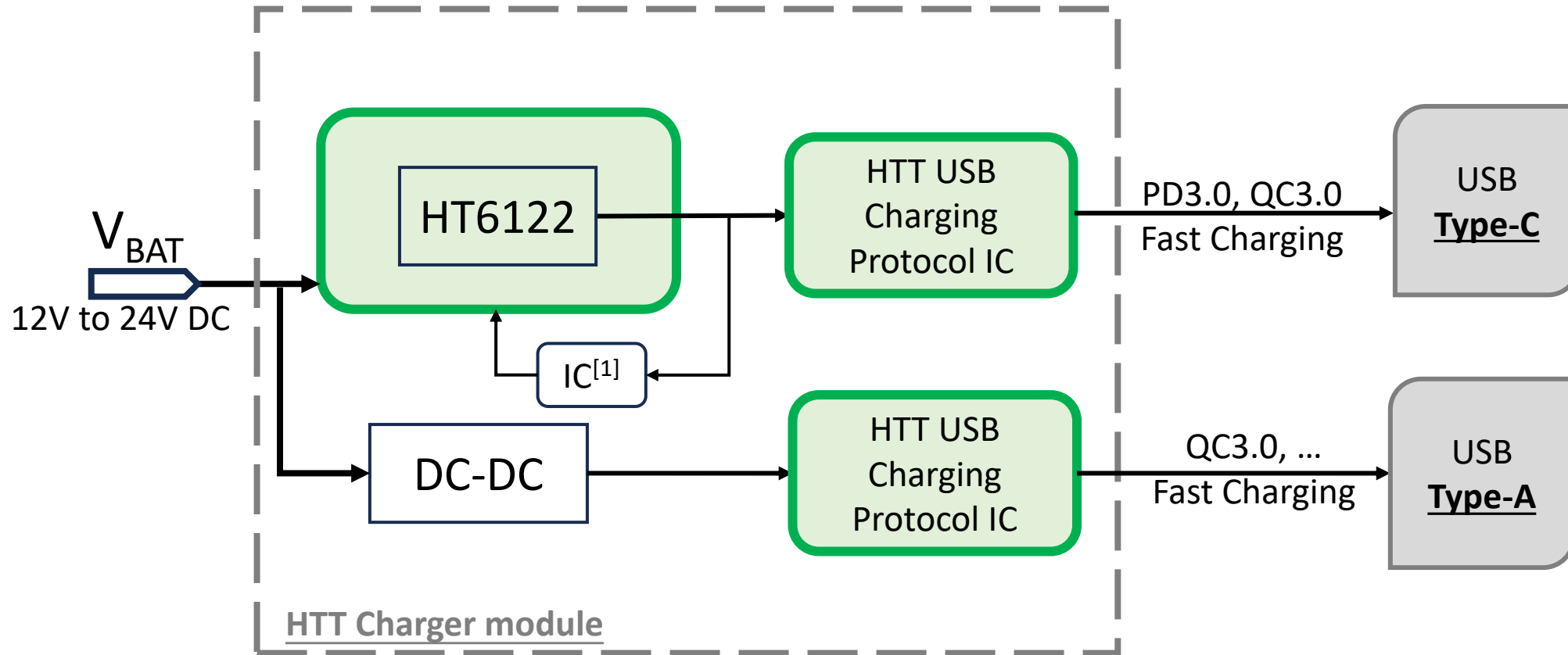
(Fast charging, PD function controller solution)

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# USB Type-A + Type-C



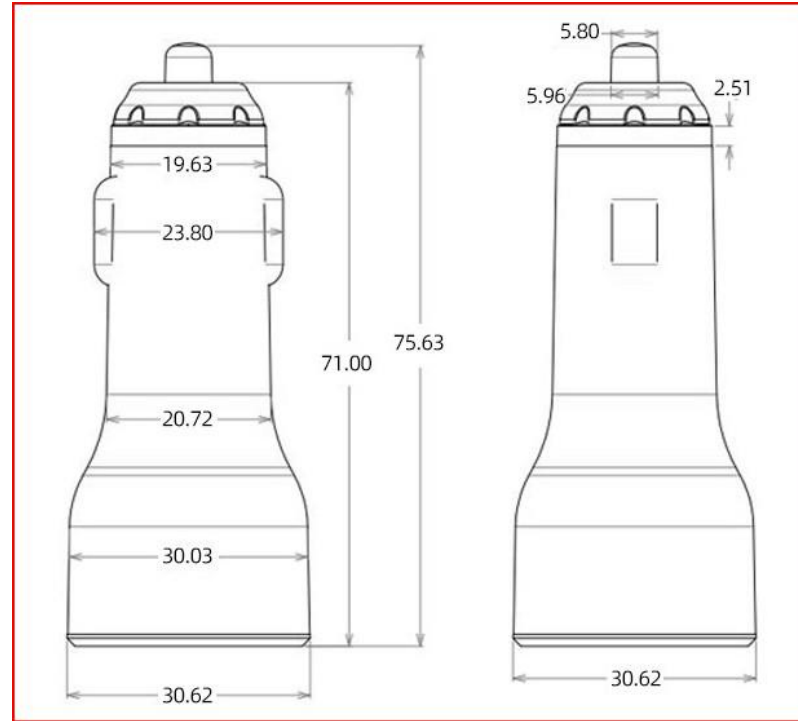
[1]. The IC can improve the efficiency at light load

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# Type-A and Type-C car charger module



Case size : 75.6mm x 30.6mm x 23.8mm

Charger module size : 50.0mm x 23.0mm x 10.0mm

## Electrical Characteristics

Input voltage	DC 12V~24V
Type-A output (maximum)	5V 3A, 9V 2A, 12V 1.5A
Type-C output (maximum)	5V 3A, 9V 3A, 12V 3A, 20V 3A
Maximum power	60W

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# Type-A and Type-C car charger module Specification (Preliminary)



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Operation mode	Single Channel	Dual Channels
Input Voltage	DC 12V-24V	
Output voltage and current (Maximum power 18W + 45W)	Type-A : 5V 3A, 9V 2A, 12V 1.5A Type-C : 5V 3A, 9V 3A, 12V 3A, 20V 3A	Type-A : 5V 3A, 9V 2A, 12V 1.5A Type-C : 5V 3A, 9V 3A, 12V 3A, 20V 2.25A
Protocol supported	PD 3.0, QC 3.0*	
Dimensions	50mm(length) X 10mm(narrow end diameter) X 23mm(wide end diameter)	
Maximum output power	60W	18W + 45W = 63W
Load Regulation	Output voltage accuracy at different loading 98%#	
Efficiency	85%	85%
Short Circuit Protection	✓	

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\* QC3.0: Based on QUALCOMM webpage: Charge up to 4 times faster than conventional 5W chargers.  
(<https://www.qualcomm.com/news/onq/2015/09/14/introducing-quick-charge-30-next-generation-fast-charging-technology>)

# Definition: (Actual Vout / Target Vout) %



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# Dual Port MaxSpeed Fast Charging is just a *Breeze!*

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