

General Description

TCS4461 is a Synchronous Buck Controller with two current sense pins suitable for many multi-output applications. It is designed to allow for operating a wide supply voltage range from 6V to 40V. It has both high-side and low-side drivers allowing synchronous configuration using two external power-NMOS. This IC can operate in both Constant Current (CC) and Constant Voltage (CV) modes.

TCS4461 operates as a Buck Controller providing a wide range of outputs at Constant Voltage (CV) from 6V to 40V and the output current as high as 10A or above. It has a Constant Current (CC) mode so that output current can be set externally and at an accuracy of $\pm 4\%$.

The current mode control and external compensation makes feedback control have good line and load regulation with flexible external design.

Features

- Vin: 6V to 40V, UVLO=5.5V \pm 0.5V
- Vout: 3V to 28V; typical at 5V
- Precision CC/CV Mode Control
- Burst/PFM Mode for Increased Light Load Efficiency
- 2 outputs independent Constant Current setting
- Hiccup mode when output voltage below 50% normal output voltage
- Protection:
 - NMOS peak current limit: accuracy: $\sim 20\%$
 - Output short protection: reduce input current to less than 20mA (RMS)
 - Output FB OVP (125% VFB), only turn off High side MOS.
 - Temperature shutdown (OTP)
- Adjustable Output Cable Resistance Compensation
- Duty: 0~98% (T_{off_min} =100ns, Dead-time=25~35ns)
- Switching Frequency: 125k \pm 25k
- Integrated MOSFET Drivers
- QFN12L Package

Pin Configurations

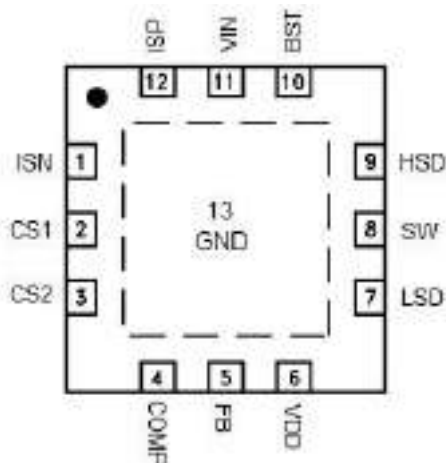


Figure1 Pin Configuration of TCS4461(Top View)

Applications

- Car Charger
- High-Brightness Lighting
- General-Purpose DC/DC Controller