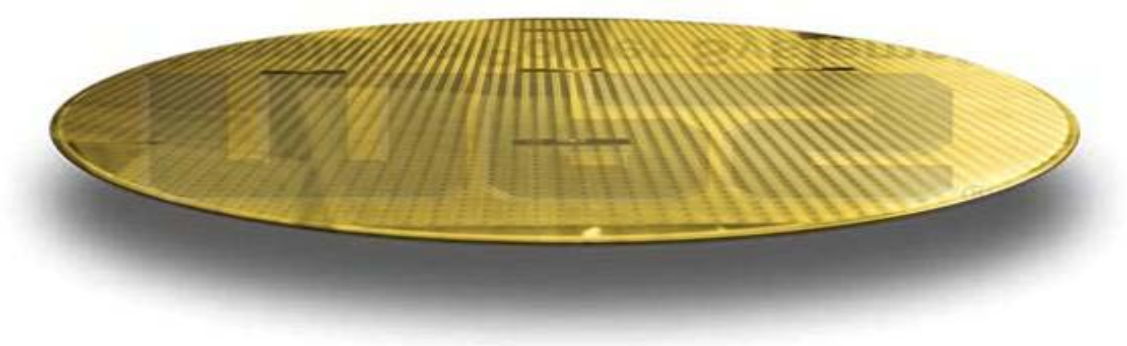
Monolithic Power Systems



MP2145/7

5.5V, 6A/4A, 1.2MHz High-Efficiency, 40µA Iq COT Step-Down Switcher with PG and Mode Selection in 2x3mm QFN12

May, 2014

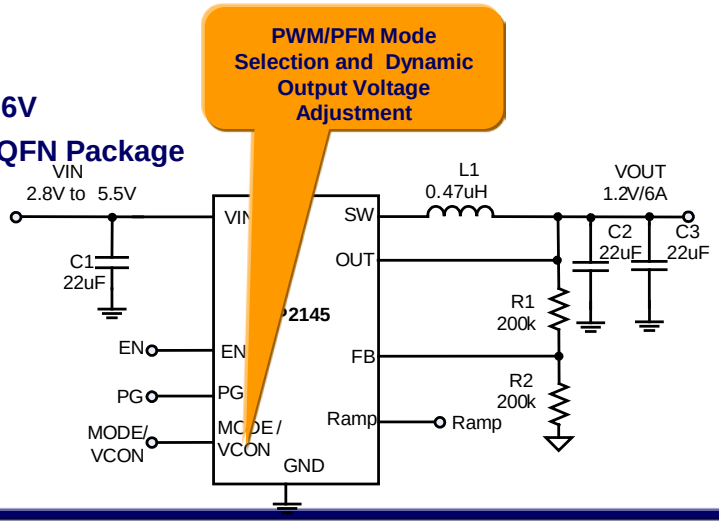
MP2145/7-5.5V, 6/4A, 1.2MHz High-Efficiency, low Iq, COT, Synchronous, Step-Down Converter

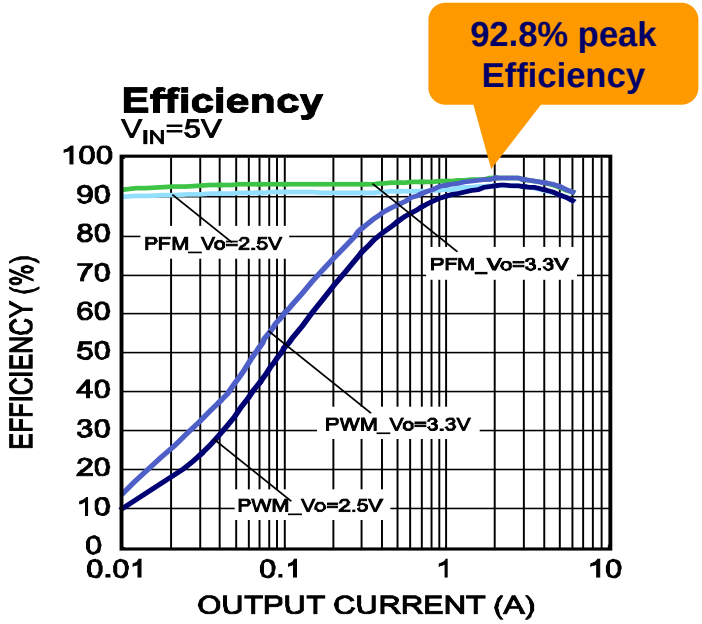
Features

- Up to 6A/4A Output Current
- Wide 2.8V-to-5.5V Operating Input Range
- MP2145 20mΩ and 12mΩ Internal Power MOSFETs
- MP2147 22mΩ and 14mΩ Internal Power MOSFETs
- Low Quiescent Current: 40uA
- 1.2MHz Fixed Switching Frequency
- 1% Feedback Accuracy
- External Mode Control
- External VCON Control
- 1.5ms Internal SS Time with Pre-Bias Startup
- Cycle-by-Cycle Over Current Protection
- Short Circuit Protection with Hiccup Mode
- Stable with Low-ESR Output Ceramic Capacitors
- Over Voltage Protection
- Thermal Shutdown
- Output Adjustable from 0.6V
- Available in a 2mmx3mm QFN Package

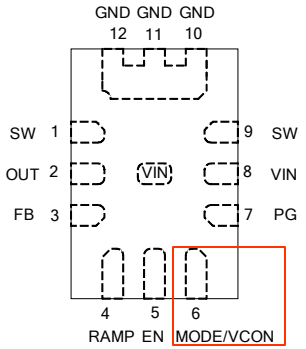
Benefits

- Low Iq (40uA) and low Rdson (20/12mΩ) -> High overall efficiency- important for battery life
- Power Good -> Provide ability to monitor
- PWM/PFM Mode Selectable -> Provides flexibility
- QFN12 (2mmx3mm) Package -> Saves space

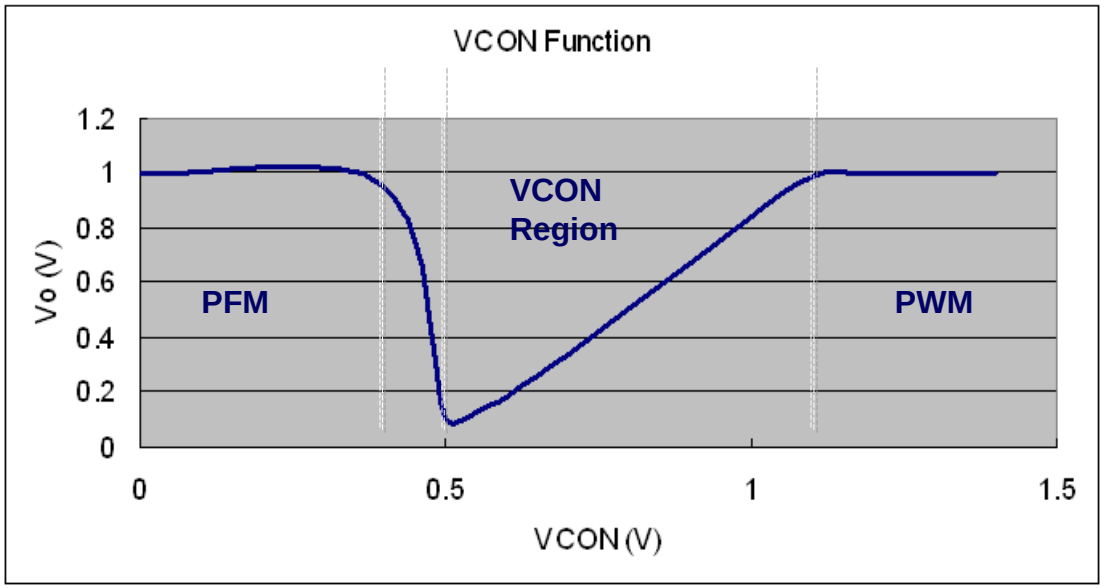


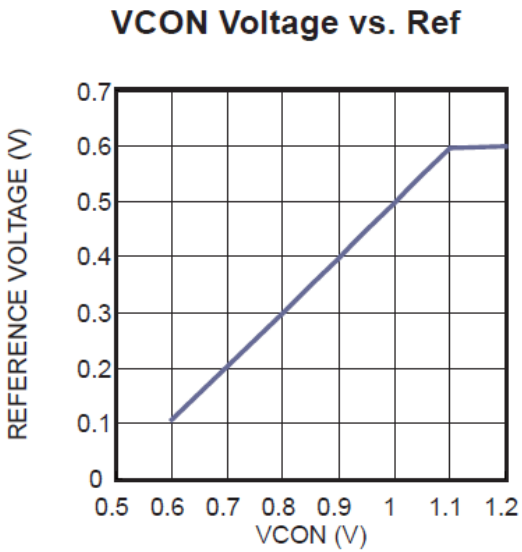


Mode/Vcon Pin



Test Condition: Vin=5V, Vo=1V





VCON regulates internal Ref linearly!

The VCON can dynamic adjust Vo voltage if the applied voltage is between 0.6-1.1V.

Target Applications

- Storage (SSD, HDD)
- Portable Instruments
- Battery-Powered Devices
- Low-voltage I/O power
- Multi Function Printer

Battery- Powered System

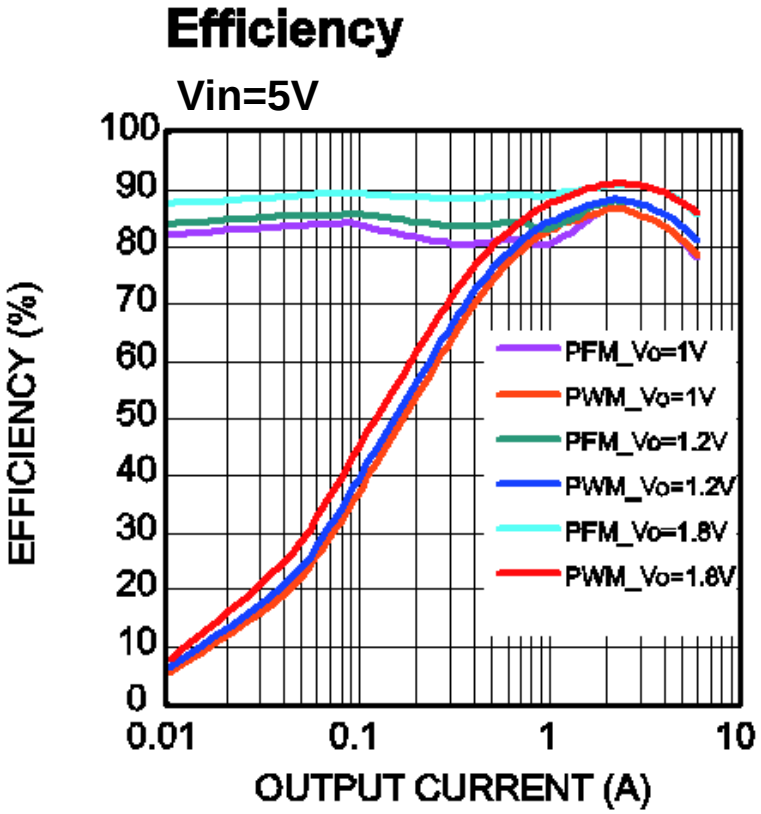
MP2145/7

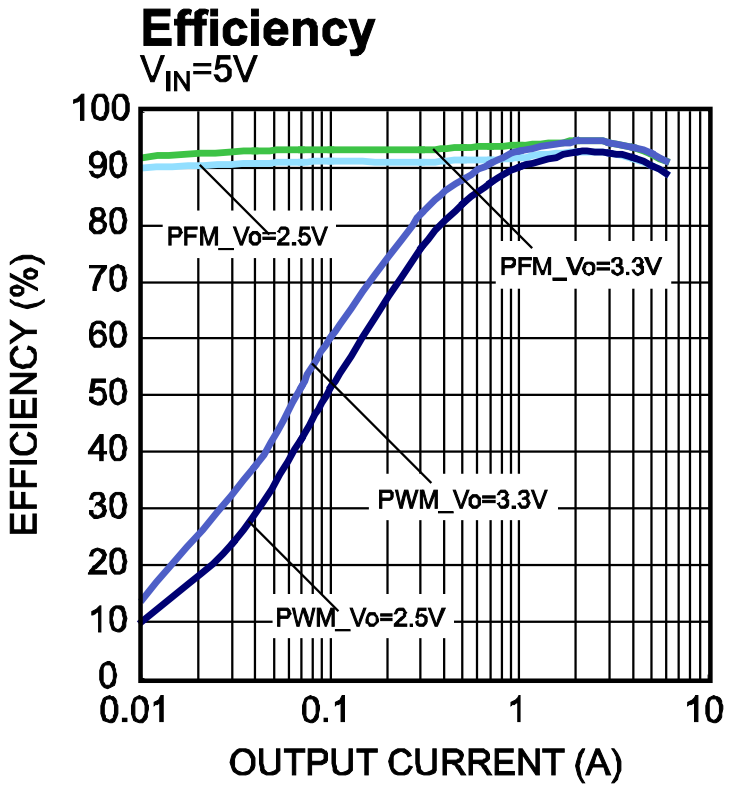
Multi Function Printer

Storage (SSD/HDD)

Macbook/Notebook

Excellent Efficiency





The peak efficiency is over 92% over the entire Io range.

Link To MP2145 **Link To MP2147**