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September 2016

FAN49101 — 2 A, 1.8 MHz, TinyPower™ I²C Buck-Boost Regulator

Features

- 24 µA Typical PFM Quiescent Current
- Above 95% Efficiency
- Total Layout Area = 11.61 mm^2
- Input Voltage Range: 2.5 V to 5.5 V
- I^2C Compatible Interface
- 1.8 MHz Fixed-Frequency Operation in PWM Mode
- Automatic / Seamless Step-up and Step-down Mode Transitions
- Forced PWM and Automatic PFM/PWM Mode Selection
- 0.5 µA Typical Shutdown Current
- Low Quiescent Current Pass-Through Mode
- Internal Soft-Start and Output Discharge
- Low Ripple and Excellent Transient Response
- Internally Set, Automatic Safety Protections (UVLO, OTP, SCP, OCP)

Applications

- Smart Phones
- Tablets, Netbooks®, Ultra-Mobile PCs
- Portable Devices with Li-ion Battery
- 2G/3G/4G Power Amplifiers
- NFC Applications

Additional Information

For the full datasheet, please contact a Fairchild Sales Representative.

Description

The FAN49101 is a high efficiency buck-boost switching mode regulator which accepts input voltages either above or below the regulated output voltage. Using full-bridge architecture with synchronous rectification, the FAN49101 is capable of delivering up to 2 A while regulating the output at 3.4 V. The FAN49101 exhibits seamless transition between step-up and step-down modes reducing output disturbances. The output voltage and operation mode of the regulator can be programmed through an I^2C interface.

At moderate and light loads, Pulse Frequency Modulation (PFM) is used to operate the device in power-save mode to maintain high efficiency. In PFM mode, the part still exhibits excellent transient response during load steps. At moderate to heavier loads or Forced PWM mode, the regulator switches to PWM fixed-frequency control. While in PWM mode, the regulator operates at a nominal fixed frequency of 1.8 MHz, which allows for reduced external component values.

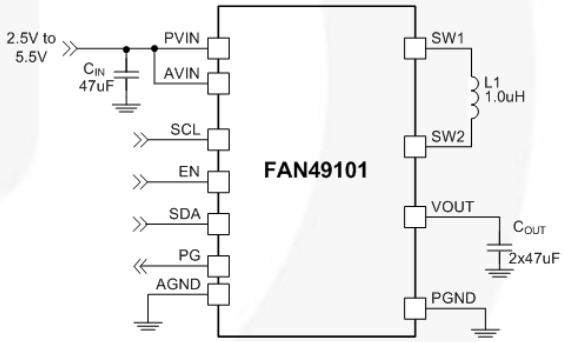

Figure 1. Typical Application

Ordering Information

Part Number	Output Discharge	Temperature Range	Packing Method
FAN49101AUC340X	Yes	-40 to 85°C	Tape and Reel

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Definition of Terms

Datasheet Identification	Product Status	Definition
Advance Information	Formative / In Design	Datasheet contains the design specifications for product development. Specifications may change in any manner without notice.
Preliminary	First Production	Datasheet contains preliminary data; supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve design.
No Identification Needed	Full Production	Datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve the design.
Obsolete	Not In Production	Datasheet contains specifications on a product that is discontinued by Fairchild Semiconductor. The datasheet is for reference information only.

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