



Analog Solutions—Robust Reliable Performance

PF3001

PF Series 10-Channel Configurable PMIC



Overview

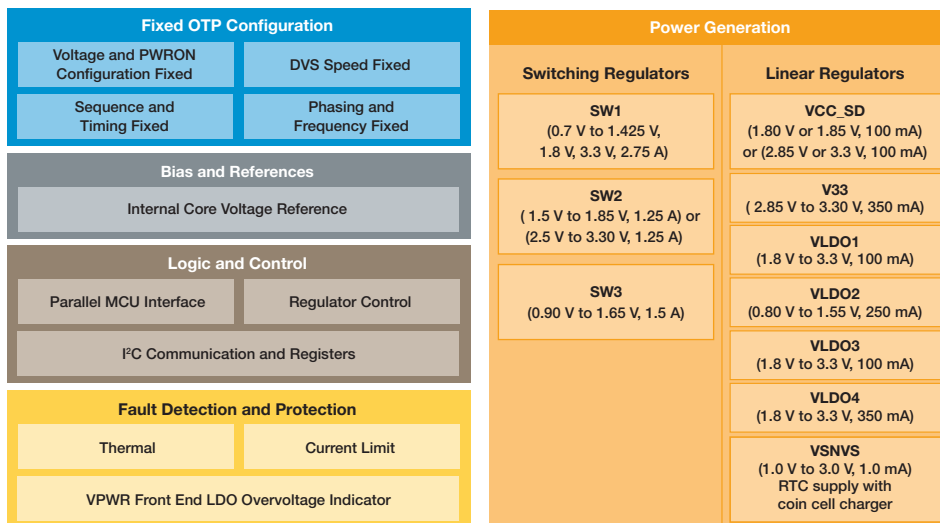
The PF3001 power management integrated circuit (PMIC) features a configurable architecture that supports numerous outputs with various current ratings as well as programmable voltage and predefined sequencing. This enables the PF3001 to power the core processor, external memory and peripherals to provide a single-chip system power solution in multiple applications, reducing design complexity and lowering overall bill of materials. In consumer and industrial environments the high-performance architecture offers a cost optimized solution for “always ON” applications while PF3000 enables Low Power implementation.

The PF3001 is ideally suited for i.MX 6UL applications processors, and can also meet the power consumption requirements for other low end i.MX 6 series, including the i.MX 6Solo, i.MX 6SoloLite, i.MX 6SoloX and i.MX 7 series. The pin to pin compatibility with the PF3000 makes the i.MX and PF3000/1 solution scalable and allows to reuse the current Board Support Package (BSP) used in multiple reference designs. This provides customers with a platform-level solution from a single supplier to enable faster time to market and reduces engineering effort.

Target Applications

- Navigation
- Human-machine interface
- Home automation
- Industrial embedded board manufacturer
- Point of sale (POS) terminals
- Internet of Things (IoT)

PF3001 Functional Internal Block Diagram



Product Longevity

Product Differentiation

	Features	Benefits
Efficiency	4 Buck Converters with DVS in RUN mode	High efficiency (> 90%) with Voltage scaling drive to lower power dissipation
	6 LDOs, + coin cell charger, and RTC supply	Supply multiple peripherals, lowering external component count
	Forced PFM (Pulse Frequency Modulation), APS (Auto Pulse Skip) or PWM operation	Higher light load efficiency – longer battery standby time
Simplify	Programmable output voltage, timing	Ensure scalability across platforms (multiple i.MX applications processors usage)
	5 V voltage input compatibility	Simplify bill of materials by alleviating the need for a 5 V to 4.5 V converter
	I ² C digital interface for programmability	On the fly voltage scaling for better system efficiency, regulator management for versatility
Low-Cost	Preprogrammed versions, optimized for dedicated i.MX applications processors versions	Reduces design efforts since the PMICs are designed for compatibility with the i.MX applications processors
	7 x 7 mm QFN power package	Allows 4 layer printed circuit boards (PCBs)

Features

- 2.8 V to 5.5 V input voltage
- 10-channel, 6.6 A total power delivery
- 3-channel configurable buck converters
- Forced PWM/PFM or APS operation
- 6 user programmable LDOs
- Coin cell charger
- Programmable output voltage, current limit, soft-start, FSW, fault interrupt
- Pin compatible with PF3000
- High power 7 x 7 mm QFN package
- Consumer, industrial grades available

PF3001 PMIC Enablement

KITPF3000FRDMEVM

- Generic family evaluation (Common platform with PF3000)
- Friendly graphical user interface with specific PF3000 or PF3001 display
- USB interface

Complete Technical Documentation Available

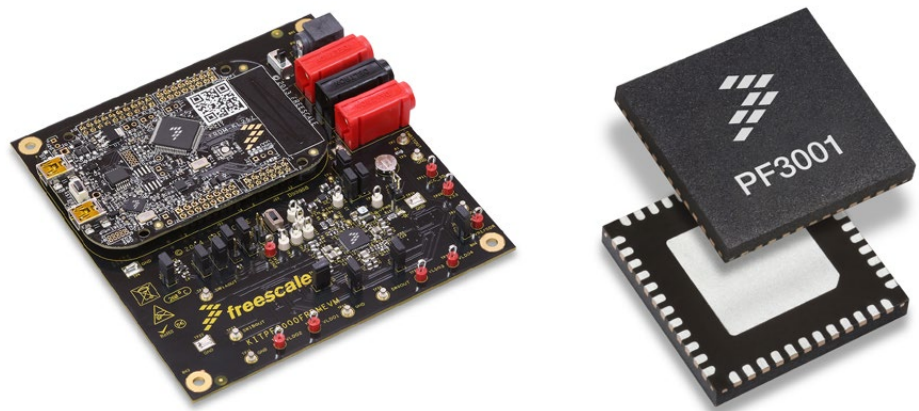
- Datasheet, application notes, EVM user guide

Easy to Use Tools

- GUI and evaluation systems available to test efficiency and temperature rise
- Technical and hands-on training available upon request

Product Core	Market	Ambient Temperature
MC32PF3001	Consumer	-40C° to +85C°
MC34PF3001	Industrial	-40C° to +105C°

Freescale Document Number	Title	Description
PF3001	PF3001	Data Sheet
SG1002	Analog Product Selector Guide	Selector Guide
SG200	Industrial Product Selector Guide	Selector Guide



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