

MC34708

Power Management Integrated Circuit Designed for the Freescale i.MX50/53 Families

Applications

- Tablets
- Smart mobile devices
- eReaders
- Digital signage
- Telehealth
- Video-enabled IP phones
- Portable navigation devices
- HMI for appliances, building control, factory/home automation, printers and security panels

Overview

The MC34708 Power Management Integrated Circuit (PMIC) represents a complete system power solution in a single package, designed specifically for use with the Freescale i.MX50/53 families. It integrates six multi-mode buck regulators and eight LDO regulators for direct supply of the processor core, memory and peripherals. This device is powered by SMARTMOS technology.

The USB switch enables the use of a single, mini or micro USB connector for USB, UART and audio connections. It automatically identifies the type of device connected. In addition, the MC34708 also integrates a real time clock, coin cell charger, a 16-channel 10-bit ADC, 5.0 V USB boost regulator, two PWM outputs, touch-screen interface, general purpose LED drivers and four GPIOs.

The MC34708 is available in pin compatible 8x8 and 13x13 packages.

MC34708 Functional Block Diagram



Performance	Typical Values
Buck Regulators Output Voltage Range	0.65 to 3.15 V
Buck Regulators Load Capability	Up to 2000 mA
LDO Output Voltage Range	1.2 to 3.3 V
LDO Load Capacity	Up to 350 mA
Total Standby Quiescent Current Consumption (no load)	340 μ A
USB On-The-Go (OTG) Supply Current	100 mA
Boost Regulator Load Capability	380 mA

Features

- Six multi-mode buck regulators for direct supply of the processor core, memory and peripherals
- Boost regulator for USB OTG support
- Eight LDO regulators with internal and external pass devices for thermal budget optimization
- USB/UART/Audio switching for mini-micro USB connector
- 10-bit ADC for monitoring battery and other inputs
- Real time clock and crystal oscillator circuitry with coin cell backup/charger
- SPI/I²C bus for control and register interface

Freescale Semiconductor is a leading provider for over 25 years of high-performance products that use SMARTMOS technology that combines digital, power and standard analog functions. The company supplies analog and power management ICs for the automotive, consumer, networking and industrial markets.

Freescale's analog and power ICs complement our broad portfolio of microcontrollers, microprocessors, ZigBee[®] technology, digital signal processors, sensors and development tools. Freescale offers superior support for system solutions to help customers.

The i.MX53 and i.MX50 families of processors represent Freescale's next generation of advanced multimedia and power-efficient implementation of the ARM[®] Cortex[™]-A8 core.

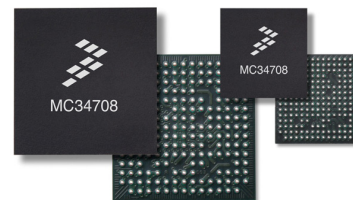
Ordering Information		
Device (add R2 suffix for tape and reel)	Temperature Range	Package
MC34708VK	-40 to 85 °C	8x8 mm 206 MAPBGA, 0.5 mm pitch
MC34708VM	-40 to 85 °C	13x13 mm 206 MAPBGA, 0.8 mm pitch
Development Tools	Description	
DF34708	MC34708 Recommended Schematic Files	
KIT34708VMEVBE	MC34708 13x13 Evaluation Kit	
MCIMX53-START-R	i.MX53 Quick Start Board	
MCIMX50EVK	i.MX50 Evaluation Kit	
MCIMX50SABRE	SABRE platform for eReaders	
Documentation	Description	
MC34708	Data Sheet	
MC34708ER	Errata	
AN6420	Interfacing the MC34708 with an External Battery Charger	
SG1002	Analog Product Selector Guide	

The i.MX53 family is optimized for both performance and power to meet the demands of high-end advanced applications. An integrated display controller, 1080p HD video decode and 720p video encode, enhanced graphics and connectivity features make the i.MX53 ideal for applications which require rich user interfaces with high color displays. The i.MX50 family supports both LCD and EPD displays to allow customers the flexibility in designing their system.

The supported memories include mDDR, DDR2, and LP-DDR2, SD/MMC, and raw-NAND with up to 32 bit ECC. Connectivity features like dual USB with PHY and Fast Ethernet Controller allow customers to connect to the interfaces they need.

Benefits

- Highly integrated cost-effective solution
- Optimized for use with Freescale's i.MX family
- Integration reduces system costs in mobile applications and reduces board space for compact designs
- High efficiency switching regulators increase battery life for portable applications



206 MAPBGA
13 x 13 mm
0.8 mm Pitch

206 MAPBGA
8 x 8 mm
0.5 mm Pitch

Learn More: For current information about Freescale products, please visit www.freescale.com.