FUDAN MICRO

MCU Selection Guide

Shanghai Fudan Microelectronics Group Company Limited.

Developer Forum：http://www.fmdevelopers.com.cn

About Us

In July 1998, Shanghai Commercial Investment Company, ASIC & System State-Key Laboratory of Fudan University and a group of founders with dreams and pioneer spirits established FMSH. Since then, FMSH has successfully taken a dominant position of the ASIC industry in China. FMSH went public in Hong Kong Growing Enterprise Market on August 4th, 2000(stock code: 8102), being the first listed IC design company from mainland China. On January 8th, 2014, the enterprise transferred of listing from GEM to Main Board(stock code: 1385).

Today, FMSH has been grown from 10 founders to over 1200 employees with customers all around the world. With its excellent management system, high development potential and remarkable achievements, FMSH has attracted attention from people in IC industry both at home and abroad. The well-known Hong Kong magazine "Asia Financial" listed FMSH as one of the best ten companies in Mainland China in 2001.

Growing in shanghai, focusing on Hong Kong and heading to the world,FMSH aims at developing the microelectronics industry in China and keeping up with the international advanced technology. Our daily work has set a solid base for the company to become the leading global IC group.

Shanghai Fudan Microelectronics Group Co., Ltd. is the earliest chip design company in China that started the research and development, design and application of MCU chips for smart energy meters. Since the early 1990s, it has been in the field of smart meters for more than 20 years and has become the field of smart meters MCU leader, with a market share of more than 60%. In 2013, Shanghai Fudan Microelectronics Group Co., Ltd. began the research and development of low-power MCU . After years of technology accumulation, it has successively launched low-power series MCU chips. At present, several series and dozens of models of MCU have been launched in response to different embedded application requirements, and the cumulative product shipments have exceeded 400 million. While continuously launching MCU products that meet market needs, we will continue to improve the product ecosystem and strive to provide customers with MCU products that are highly reliable, platform-oriented, easy to use, and resource-rich. So far, it has been widely used in smart electricity, water ,gas and heat meters, household appliances, consumer electronics, medical instruments, smart homes, the Internet of Things, and many other fields.

"Better chips, better future" as its slogan, FMSH will stand together with our partners and ultimate customers to realize our better future!

IoT Terminal Platform

FM-IoT

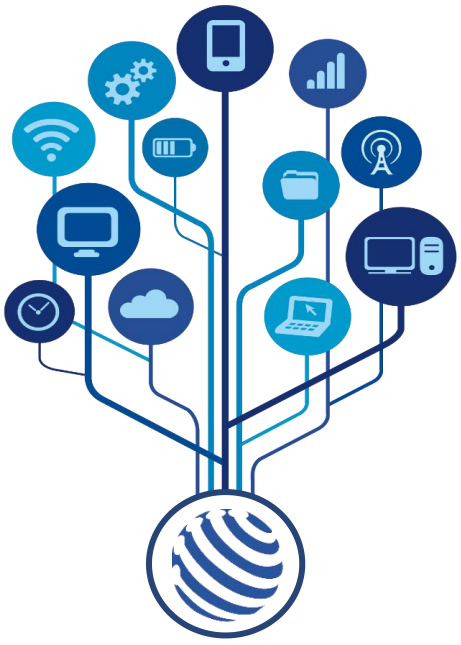
Introduce:

The Internet of Things (IoT) is opening the potential for billions of connected smart devices to communicate with each other using the nearly ubiquitous Internet Protocol technology. The IoT enables almost any system to leverage the Internet and the eco-system of Cloud Computing in order to innovate and make a diverse range of objects smarter and more aware. The growth in the number of internet-connected devices is driven by the broad availability of high quality, reliable wireless connectivity, as well as low cost low power embedded components.

In order to facilitate the rapid and efficient development of various IoT terminal product applications, Fudan Microelectronics has launched a one-stop platform solution for FM-IoT platform applications. FM-IoT Platform uses Fudan microelectronic FM33G0xx, FM33A0xx, FM33A0xxEV, FM33LC0xxx, FM33LG0xx and other series of ARM®core MCUs as the hardware platform, supporting a variety of mainstream real-time operatingsystems, including AliOS, FreeRTOS and μC/OS II, that developers can realize efficient secondary development on the basis of this platform.

Features:

- Support of a wide range of communications methods: NB-IoT, Wi-Fi, LoRa, 4G
- Support of a wide range of communications protocol : CoAP, MQTT, LwIP, DTLS, LoRaWAN
- Development kits: OLED display, temperature sensor, humidity sensor, light sensor, etc.
- Supported platform: Android mobile APP, WEB terminal control management platform, WeChat mini programs, etc.
- Encryption methods: software/hardware encryption
- Customization development: embedded firmware SDK, mobile SDK, cloud platform API



IoT Applications:

While IoT devices come in many different form factors, they all require common functional building blocks such as processing and security, sensing and actuating, connectivity, signal conditioning, protection, power and energy management.

LC0 Series Low-Power 32-bit ARM Cortex-M0 MCU

FM33LC0xx Series

Introduction:

- 32-bit low-power MCU chip based on the ARM® Cortex®-M0 core , frequency up to 64MHz
- Integrated memory up to 256KB FLASH, 24KB RAM
- A wide range of on-chip peripherals, including LCD driver, High-Accuracy RTC, SAR ADC, OPA, AES, UART, I2C, SPI, U7816 and USB2.0 FS device MAC&PHY
- Support multiple packages: LQFP64/LQFP48/QFN32/TSSOP20

Features:

- Operating Voltage Range:1.8V~3.6V (USB)/1.8V~5.5V (No USB)
- Operating Temperature Range: -40°C ~+85°C
- Current consumption:
  - Active：120 uA/MHz @24Mhz, 95 uA/MHz @64Mhz
  - LPRUN: 30uA@32KHz
  - Sleep mode :6uA+LCD (2 uA)
  - Deep Sleep mode with RTC, 16KB RAM data & CPU state retention: 1uA +LCD (2 uA)
  - Deep Sleep mode without RTC, 16KB RAM data & CPU state retention: 0.8uA+LCD(2 uA)
- Built-in True Random Number Generator(TRNG); Every chip has its Unique Identification Code(UID);
- Support AES hardware computing unit, 128/192/256-bit, AES supports ECB/CBC/CTR/GCM/GMAC mode;
- Support Flash lock and unlock by sector; Support remote erasing and online firmware upgrade;
- PDR, BOR, SVD for supply management and reset;
- Featured 2 Low-Power UART(LPUART) with the ability of waking up the chip at falling edge, after receiving one byte, or upon receiving a specified byte;
- 4×UART interface with Infrared Modulation capability, which carrier frequency can be set;
- I2C supports master-slave mode, supports low-power wake-up; SPI supports full/half duplex;
- DMA supports UART, LPUART, U7816, SPI, I2C,ATIM,GTIM,AES,ADC and CRC Module;
- Built-in 12bit SAR-ADC, 1Msps sampling rate, 2 rail-to-rail OPA operational amplifiers, 2 low-power analog comparators;
- Embedded USB2.0 Full-Speed Device PHY&MAC operating without external crystal; Built-in high-precision temperature sensor(**±2℃** accuracy);
- Built-in LCD driver, supports LCD up to 4COM×32SEG / 6COM×30SEG / 8COM×28SEG;
- 16-bit Advanced Timer(ATIM), which is available for motor application, features multiple complementary PWM output up to 120MHz with dead zone;
- Built-in Low-Power Timers(LPTIM) capable for timing/counting in Sleep mode;
- 1×CPU Watchdog Timer with programmable window(WWDT), 1×System Watchdog Timer with programmable window(IWDT);
- Low-Power Real-Time Clock(RTC) features a digital adjustment function(accuracy up to **±0.477ppm**);
- Wide range of clock source:
  - On-chip High Frequency RC Oscillator(RCHF) with configurable frequency(8~24MHz)
  - External High Frequency Crystal Oscillator(XTHF@4~32MHz) Circuit
  - Internal PLL(up to 64MHz)
  - On-chip Medium Frequency RC Oscillator(RCMF@4MHz)
  - On-chip Low Frequency RC Oscillator(LPOSC@32KHz)
  - External Low Frequency Crystal Oscillator(XTLF@32.768KHz) Circuit with Fail Detection

Application Field:

- Smart electricity, water ,gas and heat meters
- Household appliances
- Consumer electronics
- Medical instruments
- Smart homes
- The Internet of Things

L0 Series Low-Power 32-bit ARM Cortex-M0 MCU

FM33L0xx Series

Introduction:

- 32-bit low-power MCU chip based on the ARM® Cortex®-M0 core , frequency up to 64MHz
- Integrated memory up to 128KB FLASH, 24KB RAM
- A wide range of on-chip peripherals, including LCD driver, High-Accuracy RTC, SAR ADC, OPA, AES, UART, I2C, SPI and U7816
- Support multiple packages: LQFP64/LQFP48/QFN32

Features:

- Operating Voltage Range:1.8V~3.6V (USB)/1.8V~5.5V (No USB)
- Operating Temperature Range: -40°C ~+85°C
- Current consumption:
  - Active：120 uA/MHz @24Mhz, 95 uA/MHz @64Mhz
  - LPRUN: 30uA@32KHz
  - Sleep mode :6uA+LCD (2 uA)
  - Deep Sleep mode with RTC, 16KB RAM data & CPU state retention: 1uA +LCD (2 uA)
  - Deep Sleep mode without RTC, 16KB RAM data & CPU state retention: 0.8uA+LCD(2 uA)
- Built-in True Random Number Generator(TRNG); Every chip has its Unique Identification Code(UID);
- Support AES hardware computing unit, 128/192/256-bit, AES supports ECB/CBC/CTR/GCM/GMAC mode;
- Support Flash lock and unlock by sector; Support remote erasing and online firmware upgrade;
- PDR, BOR, SVD for supply management and reset;
- Featured 2 Low-Power UART(LPUART) with the ability of waking up the chip at falling edge, after receiving one byte, or upon receiving a specified byte;
- 4×UART interface with Infrared Modulation capability, which carrier frequency can be set;
- I2C supports master-slave mode, supports low-power wake-up; SPI supports full/half duplex;
- DMA supports UART, LPUART, U7816, SPI, I2C,ATIM,GTIM,AES,ADC and CRC Module;
- Built-in 12bit SAR-ADC, 1Msps sampling rate, 2 rail-to-rail OPA operational amplifiers;
- Embedded USB2.0 Full-Speed Device PHY&MAC operating without external crystal; Built-in high-precision temperature sensor(**±2℃** accuracy);
- Built-in LCD driver, supports LCD up to 4COM×32SEG / 6COM×30SEG / 8COM×28SEG;
- 16-bit Advanced Timer(ATIM), which is available for motor application, features multiple complementary PWM output up to 120MHz with dead zone;
- Built-in Low-Power Timers(LPTIM) capable for timing/counting in Sleep mode;
- 1×CPU Watchdog Timer with programmable window(WWDT), 1×System Watchdog Timer with programmable window(IWDT);
- Low-Power Real-Time Clock(RTC) features a digital adjustment function(accuracy up to **±0.477ppm**);
- Wide range of clock source:
  - On-chip High Frequency RC Oscillator(RCHF) with configurable frequency(8~24MHz)
  - External High Frequency Crystal Oscillator(XTHF@4~32MHz) Circuit
  - Internal PLL(up to 64MHz)
  - On-chip Low Frequency RC Oscillator(RCLP@32KHz)
  - External Low Frequency Crystal Oscillator(XTLF@32.768KHz) Circuit with Fail Detection

LG0 Series Low-Power 32-bit ARM Cortex-M0 MCU

FM33LG0xx Series

Introduction:

- 32-bit low-power MCU chip based on the ARM® Cortex®-M0 core, frequency up to 64Mhz
- Integrated memory up to 256KB FLASH, 32KB RAM
- A wide range of on-chip peripherals, including LCD driver, High-Accuracy RTC, SAR ADC， DAC, OPA, AES, UART,CAN, I2C, SPI and U7816
- Support multiple packages:LQFP80/LQFP64/LQFP48

Features:

- Operating Voltage Range:1.65V~5.5V
- Operating Temperature Range: -40°C ~+85°C
- Current consumption:
  - Active：150 uA/MHz
  - Sleep mode without LCD:5uA
  - DeepSleep with RTC, 16KB RAM data & CPU state retention: 1.5uA
  - VBAT mode, walking RTC + backup register: 0.8 uA
- Built-in True Random Number Generator(TRNG); Every chip has its Unique Identification Code(UID);
- Support AES hardware computing unit, 128/192/256-bit, AES supports ECB/CBC/CTR/GCM/GMAC mode;
- Support Flash lock and unlock by sector; Support remote erasing and online firmware upgrade;
- PDR, BOR, SVD for supply management and reset;
- Featured 3 Low-Power UART(LPUART) with the ability of waking up the chip at falling edge, after receiving one byte, or upon receiving a specified byte;
- 5×UART interface with Infrared Modulation capability, which carrier frequency can be set;
- I2C supports master-slave mode, supports low-power wake-up; SPI supports full/half duplex;
- CAN Supports protocol version 2.0 A, B Active;
- DMA supports UART, LPUART, U7816, SPI, I2C,ATIM,GTIM,AES,ADC,DAC and CRC Module;
- Built-in a 12bit 1Msps SAR-ADC, a 12bit 1Msps DAC, a rail-to-rail OPA operational amplifiers,and 3 low-power analog comparators;
- Built-in high-precision temperature sensor(**±2℃** accuracy);
- Built-in LCD driver, supports LCD up to 4COM×44SEG / 6COM×42SEG / 8COM×40SEG;
- 16-bit Advanced Timer(ATIM), which is available for motor application, features multiple complementary PWM output up to 120MHz with dead zone;
- Built-in Low-Power Timers(LPTIM) capable for timing/counting in Sleep mode;
- 1×CPU Watchdog Timer with programmable window(WWDT), 1×System Watchdog Timer with programmable window(IWDT);
- Low-Power Real-Time Clock(RTC) features a digital adjustment function(accuracy up to **±0.477ppm**);
- Wide range of clock source:
  - On-chip High Frequency RC Oscillator(RCHF) with configurable frequency(8~24MHz)
  - External High Frequency Crystal Oscillator(XTHF@4~32MHz) Circuit
  - Internal PLL(up to 64MHz)
  - On-chip Medium Frequency RC Oscillator(RCLF@614.4KHz)
  - On-chip Low Frequency RC Oscillator(RCLP@32KHz)
  - External Low Frequency Crystal Oscillator(XTLF@32.768KHz) Circuit

Application Field:

- The Internet of things
- Sensor module
- Smart Home
- Smart meters
- Consumer electronics
- Battery-management system

A0xxE Series Low-Power 32-bit ARM Cortex-M0 MCU

FM33A0xxE Series

Introduction:

- 32-bit low-power MCU chip based on the ARM® Cortex®-M0 core, frequency up to 64Mhz
- Integrated memory up to 512KB FLASH, 80KB RAM
- A wide range of on-chip peripherals, including LCD driver, High-Accuracy RTC, Σ-△ADC, OPA, AES,PAE,Crypto Hash Accelerator, UART, I2C, SPI, QSPI and U7816
- Support multiple packages:LQFP100/LQFP80/LQFP48.

Features:

- Operating Voltage Range:1.8V~5.5V
- Operating Temperature Range: -40°C ~+85°C
- Current consumption:
  - Active：135 uA/MHz@32MHZ
  - LPRUN: 30uA@32KHz
  - Sleep mode without LCD: 3.6uA
  - DeepSleep with RTC, 16KB RAM data & CPU state retention: 1.5uA
- Built-in True Random Number Generator(TRNG); Every chip has its Unique Identification Code(UID);
- Support AES hardware computing unit, 128/192/256-bit, AES supports ECB/CBC/CTR/GCM/GMAC mode;
- Support Flash lock and unlock by sector; Support remote erasing and online firmware upgrade;
- PDR, BOR, SVD for supply management and reset;
- Featured 2 Low-Power UART(LPUART) with the ability of waking up the chip at falling edge, after receiving one byte, or upon receiving a specified byte;
- 6×UART interface with Infrared Modulation capability, which carrier frequency can be set;
- I2C supports master-slave mode, supports low-power wake-up; SPI supports full/half duplex;
- QSPI(Queued SPI) 4 lines interface allows half-duplex, synchronous, serial communication with external devices.
- DMA supports UART, LPUART, U7816, SPI,QSPI, I2C,AES, and CRC Module;
- Built-in a Hash Accelerator supports SHA-1,SHA256;
- Built-in a 14bit 1Msps Σ-△-ADC and 2 low-power analog comparators;
- Built-in high-precision temperature sensor(±**2**℃ accuracy);
- Built-in LCD driver, supports LCD up to 4COM×44SEG / 6COM×42SEG / 8COM×40SEG;
- Built-in Low-Power Timers(LPTIM) capable for timing/counting in Sleep mode;
- 1×CPU Watchdog Timer with programmable window(WWDT), 1×System Watchdog Timer with programmable window(IWDT);
- Low-Power Real-Time Clock(RTC) features a digital adjustment function(accuracy up to **±0.03ppm**);
- Wide range of clock source:
  - On-chip High Frequency RC Oscillator(RCHF) with configurable frequency(8~32MHz)
  - External High Frequency Crystal Oscillator(XTHF@4~24MHz) Circuit
  - Internal PLL H(up to 64MHz)
  - Internal PLL L(up to 16.384MHz)
  - On-chip Medium Frequency RC Oscillator(RCMF@2MHz)
  - On-chip Low Frequency RC Oscillator(RCLP@32KHz)
  - External Low Frequency Crystal Oscillator(XTLF@32.768KHz) Circuit

Application Field:

- Domestic/Overseas single & three-phase smart meters
- IR46 smart single/three-phase meters
- The Internet of things communication

G0 Series Low-Power 32-bit ARM Cortex-M0 MCU

FM33G0xxSeries

Introduction:

- 32-bit low-power MCU chip based on the ARM® Cortex®-M0 core, frequency up to 40Mhz
- Integrated memory up to 256KB FLASH, 24KB RAM
- A wide range of on-chip peripherals, including LCD driver, High-Accuracy RTC, ∑-△ADC,AES UART, I2C, SPI, HSPI and U7816
- Support multiple packages:LQFP80/LQFP64/LQFP48

Features:

- Operating Voltage Range:1.65V~5.5V
- Operating Temperature Range: -40°C ~+85°C
- Current consumption:
  - Active：180 uA/MHz@8Mhz
  - Sleep mode without LCD:5uA
  - DeepSleep with RTC, 16KB RAM data & CPU state retention: 1.3uA
  - RTC backup mode, walking RTC + backup register: 0.9 uA
  - LPRUN: 9uA@32KHz
- Built-in True Random Number Generator(TRNG); Every chip has its Unique Identification Code(UID);
- Support AES hardware computing unit, 128/192/256-bit, AES supports ECB/CBC/CTR/GCM/GMAC mode;
- Support Flash lock and unlock by sector; Support remote erasing and online firmware upgrade;
- PDR, BOR, SVD for supply management and reset;
- Featured 1 Low-Power UART(LPUART) with the ability of waking up the chip at falling edge, after receiving one byte, or upon receiving a specified byte;
- 6×UART interface with Infrared Modulation capability, which carrier frequency can be set;
- I2C supports master-slave mode, supports low-power wake-up; SPI supports full/half duplex, clock frequency up to AHBCLK/2;
- Built-in 1×HSPI supports higher clock frequency up to AHBCLK;
- DMA supports UART, LPUART, U7816, SPI, I2C,BTIM,ETIM,AES,ADC and CRC Module;
- Built-in 11bit ∑-△-ADC, 2 rail-to-rail OPA operational amplifiers;
- Built-in high-precision temperature sensor(±2℃ accuracy);
- Built-in LCD driver, supports LCD up to 4COM×44SEG / 6COM×42SEG / 8COM×40SEG;
- Built-in Low-Power Timers(LPTIM) capable for timing/counting in Sleep mode;
- 1×CPU Watchdog Timer with programmable window(WWDT), 1×System Watchdog Timer with programmable window(IWDT);
- Low-Power Real-Time Clock(RTC) features a digital adjustment function(accuracy up to **±0.06ppm**);
- Wide range of clock source:
  - On-chip High Frequency RC Oscillator(RCHF) with configurable frequency(8~48MHz)
  - Internal PLL(up to 49.152MHz)
  - On-chip Medium Frequency RC Oscillator(RCLF@512KHz)
  - On-chip Low Frequency RC Oscillator(RCLP@32KHz)
  - External Low Frequency Crystal Oscillator(XTLF@32.768KHz) Circuit

Application Field:

- Smart Water /Heat /Gas Meter
- Smart home
- Domestic / overseas single and three-phase smart meters
- Smoke alarm and sensor module
- Display panel control
- Internet of Things

Part num	MAX SPEED（MHz）	FLASH(KB)	RAM(KB)	PACKAGE	VOLTAGE（V）	IO	8BIT TIMER	16BIT TIMER	32BIT TIMER	16BIT LPTIMER	32BIT LPTIMER	16BIT ATIMER	11BIT∑-△ADC EXCH	1BIT SAR-ADC EXCH	UART	LPUART	SPI	I²C	7816	LCD	RTC	AES	COMP	OPA	USB
FM33LC0xx Series Low-Power32 bit ARM Cortex-M0 MCU																									
FM33LC046U	64	256	24	LQFP64	1.8~3.6	54	-	2	1	-	1	1	-	12	4	2	2	1	1	√	√	√	2	2	1
FM33LC023U	64	128	24	QFN32	1.8~3.6	26	-	2	1	-	1	1	-	9	4	2	2	1	-	-	√	√	1	1	1
FM33LC046N	64	256	24	LQFP64	1.8~5.5	56	-	2	1	-	1	1	-	12	4	2	2	1	1	√	√	√	2	2	-
FM33LC026N	64	128	24	LQFP64	1.8~5.5	56	-	2	1	-	1	1	-	12	4	2	2	1	1	√	√	√	2	2	-
FM33LC023N	64	128	24	QFN32	1.8~5.5	28	-	2	1	-	1	1	-	9	4	2	2	-	-	-	√	√	1	2	-
FM33LC015N	64	64	16	LQFP48	1.8~5.5	44	-	2	1	-	1	1	-	11	4	2	2	-	-	√	√	√	1	2	-
FM33LC012N	64	64	16	TSSOP20	1.8~5.5	16	-	2	1	-	1	1	-	6	2	1	1	-	-	-	√	√	-	-	-

FM33LC0X6N/5N/3N/2N, X=4/2/1match Flash size separately 256/128/64KB，RAM size separately 24/24/16KB；

FM33L0xx Series Low-Power32 bit ARM Cortex-M0 MCU																									
FM33L013	64	64	8	QFN32	1.8~5.5	28	-	2	1	-	1	1	-	8	3	2	2	1	-	-	√	√	--	2	-
FM33L025	64	128	16	LQFP48	1.8~5.5	44	-	2	1	-	1	1	-	11	4	2	2	1	-	√	√	√	--	2	-
FM33L016	64	64	8	LQFP64	1.8~5.5	58	-	2	1	-	1	1	-	12	4	2	2	1	√	√	√	√	--	2	-
FM33L026	64	128	16	LQFP64	1.8~5.5	58	-	2	1	-	1	1	-	12	4	2	2	1	√	√	√	√	--	2	-

PART NUM	MAX SPEED (MHz)	FLASH(KB)	RAM(KB)	PACKAGE	VOLTAGE (V)	IO	8BIT TIMER	16BIT TIMER	32BIT TIMER	16BIT LPTIMER	32BIT LPTIMER	16BIT ATIMER	12BIT SAR-ADC EXCH	DAC	UART	LPUART	SPI	I²C	7816	LCD	RTC	AES	CAN	VBAT	COMP	OPA	USB
FM33LG0xx Series Low-Power32 bit ARM Cortex-M0 MCU																											
FM33LG048	64	256	32	LQFP80	1.65~5.5	71	-	4	1	1	1	1	20	1	5	2	3	2	1	√	√	√	√	√	3	1	-
FM33LG045	64	256	32	LQFP48	1.65~5.5	40	-	4	1	1	1	1	9	1	5	2	3	1	1	√	√	√	√	√	2	1	-
FM33LG026	64	128	32	LQFP64	1.65~5.5	56	-	4	1	1	1	1	18	1	5	2	3	1	1	√	√	√	√	√	3	1	-
FM33LG025	64	128	32	LQFP48	1.65~5.5	40	-	4	1	1	1	1	9	1	5	2	3	1	1	√	√	√	√	√	2	1	-

Part num	MAX SPEED （MHz）	FLASH(KB)	RAM(KB)	PACKAGE	SUPPLY VOLTAGE（V）	IO	8BIT TIMER	16BIT TIMER	32BIT TIMER	16BIT LPTIMER	32BIT LPTIMER	16BIT ATIMER	11BIT∑-△ADC EXCH	1BIT SAR-ADC EXCH	UART	LPUART	SPI	I²C	7816	LCD	RTC	AES	COMP	OPA	USB
FM33G0xx Series Low-Power32 bit ARM Cortex-M0 MCU																									
FM33G026	40	128	16	LQFP64	1.8~5.5	57	4	4	-	1	-	-	7	-	6	1	3	1	1	√	√	√	1	-	-
FM33G045	40	256	24	LQFP48	1.8~5.5	41	4	4	-	1	-	-	4	-	5	1	3	1	1	-	√	√	1	-	-
FM33G048	40	256	24	LQFP80	1.8~5.5	73	4	4	-	1	-	-	8	-	6	1	3	1	2	√	√	√	2	-	-
FM33A0xxEV Series Low-Power32 bit ARM Cortex-M0 MCU																									
FM33A0610EV	64	512	80	LQFP100	1.8~5.5	91	4	4	-	1	-	-	12	-	6	2	5	2	1	√	√	√	2	-	-
FM33A048EV	64	256	48	LQFP80	1.8~5.5	73	4	4	-	1	-	-	8	-	6	2	5	1	1	√	√	√	2	-	-
FM33A045EV	64	256	48	LQFP48	1.8~5.5	42	4	4	-	1	-	-	4	-	5	1	2	1	1	-	√	√	1	-	-

Core Competitiveness

Complete R & D system

The company has a complete R & D system including chip research center, engineering technology center, postdoctoral research workstation and Central Research Institute, providing more complete services.

Reliable process platform:

Advanced and controllable process platform, covering 0.8 μm to 28 nm, with complete chip development capability

Long term partners:

Long term partners include Grofangde, SMIC Zhongxin international, Huahong Hongli, ASMC advanced semiconductor, Nantong Fujitsu, Jiangyin Changdian, Riyueguang, Tianshui Huatian, Shanghai Hualing and other well-known enterprises in the industry.

Comprehensive quality management system

ISO9001 quality management system
IECQ QC080000 hazardous substance process management system
Iso14064-1 greenhouse gas emission management system

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