

Fujitsu Enhances FM3 Family of 32-bit Microcontrollers with the Release of 93 New Products

Supports a broad range of applications, from household appliances to mobile equipment, for a total of 463 products

Yokohama, Japan, September 13, 2012 – Fujitsu Semiconductor Limited today announced the launch of the fifth wave of products in its FM3 Family of 32-bit RISC microcontrollers based on the ARM® Cortex™-M3 processor core. In total, Fujitsu Semiconductor is releasing 93 new products, which incrementally will be made available in sample quantities starting September 28, 2012.

The 93 new products are divided into two groups: a Basic Group with a total of 72 products that include the MB9B520M Series, the MB9BF524MPMC, and other products; and a Low Power Group with a total of 21 products that include the MB9A150R Series, the MB9AF156RPMC, and other products. With the addition of these new products, Fujitsu semiconductor's top class ARM® Cortex™-M3 processor core-based microcontroller lineup will total 463 products.

Fujitsu Semiconductor plans to continue expanding the product line to reach more than 500 products by the end of fiscal 2012.

The FM3 Family combines a Cortex™-M3 core with peripheral functions developed for the FR microcontrollers. The addition of 72 products in the Basic Group and 21 products in the Low Power Group to the existing product line brings the FM3 Family to a total of 463 products, providing a comprehensive lineup for the global marketplace.

The Basic Group has been designed to enable simple inverter control, making products from the group optimal choices for household appliances, office automation equipment, and industrial equipment. The Low Power Group is a product line that meets demand for low-power consumption in the marketplace. It contains an optimal range of products for the low-power demands of consumer devices, including battery-powered mobile products, digital home appliances, and healthcare products.

Product Overview

Basic Group: MB9B520M/320M/120M Series

While retaining the High Performance Group's rich array of peripheral functions, Fujitsu Semiconductor has added a lineup of products that operate at a clock speed of 72MHz, improving upon the 40MHz of existing Basic Group products. In addition to inverter control functionality, products in the series are equipped with CAN, USB 2.0, and a real-time clock, and flash memory is available from 96KB to 288KB variations, as well as packaging from 48-pin to 96-pin configurations. This series is an optimal choice for inverter control applications in household appliances, such as for air conditioners, refrigerators, and washing machines, as well as for man-machine interface control in general consumer electronics. The Basic Group is also ideal for a wide range of applications, including control for the various motors used in office automation equipment, such as printers and copiers, and CAN-enabled network communications between various kinds of industrial equipment.

Low Power Group: MB9A150R Series

The Low Power Group is a line of energy-efficient products that achieve low-voltage operations for reducing power consumption during operation and for battery-powered devices. The MB9A150R Series features enhanced flash memory and pin counts compared to the existing lineup of products within the Low Power Group, with flash memory available from 288KB to 544KB and packaging from 80-pin to 120-pin variations. The series is also equipped with a host of peripheral functions, such as a real-time clock and HDMI-CEC. Furthermore, in addition to battery-powered devices, the series supports AV applications required for controlling digital connectivity among AV devices and digital consumer electronics.

Sample Price and Release Schedule

Basic Group

Product Name	Price (With TAX)	Delivery
MB9BF524MPMC	JPY 420 *	From November 30, 2012

Low Power Group

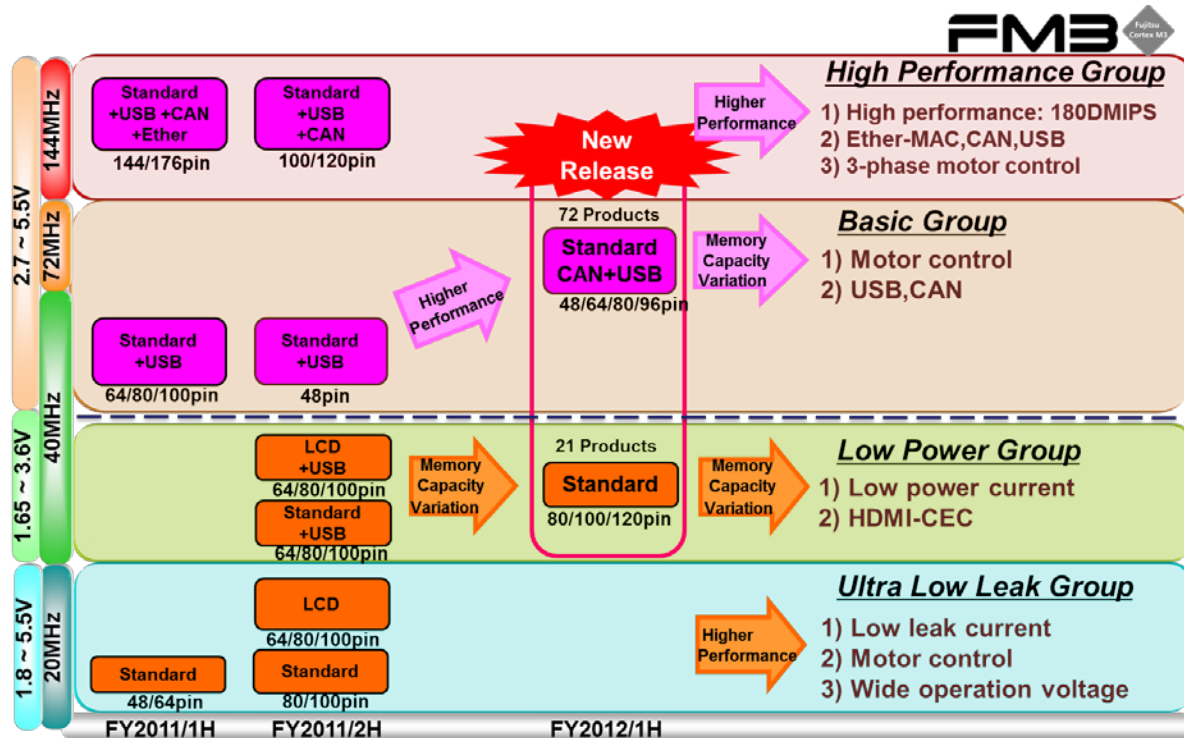
Product Name	Price (With TAX)	Delivery
MB9AF156RPMC	JPY 500 *	From September 28, 2012

* Unit price at 1,000 pieces in order

Sales Target

1,000,000 pieces per month when in mass-production. (Total of 93 products)

Product Roadmap



For More Information:

<http://jp.fujitsu.com/group/fsl/en/> (Fujitsu Semiconductor)

About Fujitsu Semiconductor

Fujitsu Semiconductor Limited designs, manufactures, and sells semiconductors, providing highly reliable, optimal solutions and support to meet the varying needs of its customers. Products and services include microcontrollers, ASICs, ASSPs, and power management ICs, with wide-ranging expertise focusing on mobile, ecological, automotive, imaging, security, and high-performance applications. Fujitsu Semiconductor also drives power efficiency and environmental initiatives. Headquartered in Yokohama, Fujitsu Semiconductor Limited (formerly named Fujitsu Microelectronics Limited) was established as a subsidiary of Fujitsu Limited on March 21, 2008. Through its global sales and development network, with sites in Japan and throughout Asia, Europe, and the Americas, Fujitsu Semiconductor offers semiconductor solutions to the global marketplace.

For more information, please see: <http://jp.fujitsu.com/fsl/en/>

Press Contacts

Fujitsu Semiconductor Limited

Public Relations Department

Inquiry: <https://www-s.fujitsu.com/jp/group/fsl/en/release/inquiry.html>

Customer Contacts

Fujitsu Semiconductor Limited

MCU Solutions Business Unit

MCU Business Division

Marketing Department

Tel: +81-45-755-7036

Inquiry: <http://edevicе.fujitsu.com/en-qform.html>

Company and product names mentioned herein are trademarks or registered trademarks of their respective companies. Information provided in this press release is accurate at time of publication and subject to change without advance notice.

Appendix

Basic Group: MB9B520M/320M/120M Series

1. A full array of communications functions

While retaining the communications functionality of the high-end models of the High Performance Group, new products in the Basic Group are equipped with a diverse range of macros used for serial communications, including CAN, a USB 2.0 Host/Function controller, and multifunction serial interfaces (UART/CSIO/LIN/PC). The series can be deployed in a wide range of applications, such as industrial inverters, PLC and other industrial systems equipment; energy management systems such as BEMS/HEMS; and office automation equipment and other network-enabled devices.

2. Peripheral functionality enabling support for high-precision motor control

In addition to preserving the peripheral functionality of the FR family of microcontrollers, which boasts a solid reputation in motor control performance, Fujitsu Semiconductor has enhanced the MB9B520M/320M/120M Series with an advanced selection of peripheral functions to provide new support for high-precision motor control. In particular, the series' high-precision, high speed 12-bit A/D converter (capable of +/- 2.5LSB 1.0 μ s conversion) demonstrates exceptional performance in applications such as highly-efficient inverters used in household appliances and industrial systems. With 2 units and up to 26 channels of this A/D converter, the series is able to perform fine-grained motor control with improved motor positioning accuracy. Furthermore, the built-in quad counter (motor rotation-phase detection counter) can handle rotation-phase detection—which previously was processed at the software level—at the hardware level, thereby reducing load on the CPU. The use of this product can enable energy-efficient inverter systems.

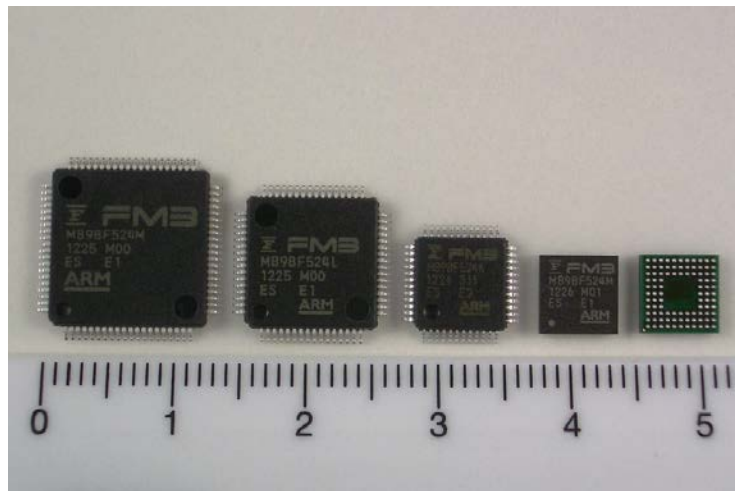


Photo 1. MB9B520M Series

Product Lineup
Basic Group

Operation Frequency (Max.)	Package	Size(mm) (X*Y)	Peripheral		Flash/RAM density		
			USB2.0 Host/Function	CAN	64KB+32KB /16KB	128KB+32KB /16KB	256KB+32KB /32KB
72MHz	LQFP-80 0.5mm pitch	12*12	1	1	MB9BF521MPMC	MB9BF522MPMC	MB9BF524MPMC
			1	-	MB9BF321MPMC	MB9BF322MPMC	MB9BF324MPMC
			-	-	MB9BF121MPMC	MB9BF122MPMC	MB9BF124MPMC
	LQFP-80 0.65mm pitch	14*14	1	1	MB9BF521MPMC1	MB9BF522MPMC1	MB9BF524MPMC1
			1	-	MB9BF321MPMC1	MB9BF322MPMC1	MB9BF324MPMC1
			-	-	MB9BF121MPMC1	MB9BF122MPMC1	MB9BF124MPMC1
	BGA-96 0.5mm pitch	6*6	1	1	MB9BF521MBGL	MB9BF522MBGL	MB9BF524MBGL
			1	-	MB9BF321MBGL	MB9BF322MBGL	MB9BF324MBGL
			-	-	MB9BF121MBGL	MB9BF122MBGL	MB9BF124MBGL
	LQFP-64 0.5mm pitch	10*10	1	1	MB9BF521LPMC1	MB9BF522LPMC1	MB9BF524LPMC1
			1	-	MB9BF321LPMC1	MB9BF322LPMC1	MB9BF324LPMC1
			-	-	MB9BF121LPMC1	MB9BF122LPMC1	MB9BF124LPMC1
	LQFP-64 0.65mm pitch	12*12	1	1	MB9BF521LPMC	MB9BF522LPMC	MB9BF524LPMC
			1	-	MB9BF321LPMC	MB9BF322LPMC	MB9BF324LPMC
			-	-	MB9BF121LPMC	MB9BF122LPMC	MB9BF124LPMC
	QFN-64 0.5mm pitch	9*9	1	1	MB9BF521LQN	MB9BF522LQN	MB9BF524LQN
			1	-	MB9BF321LQN	MB9BF322LQN	MB9BF324LQN
			-	-	MB9BF121LQN	MB9BF122LQN	MB9BF124LQN
	LQFP-48 0.5mm pitch	7*7	1	1	MB9BF521KPMC	MB9BF522KPMC	MB9BF524KPMC
			1	-	MB9BF321KPMC	MB9BF322KPMC	MB9BF324KPMC
			-	-	MB9BF121KPMC	MB9BF122KPMC	MB9BF124KPMC
	QFN-48 0.5mm pitch	7*7	1	1	MB9BF521KQN	MB9BF522KQN	MB9BF524KQN
			1	-	MB9BF321KQN	MB9BF322KQN	MB9BF324KQN
			-	-	MB9BF121KQN	MB9BF122KQN	MB9BF124KQN

Low Power Group: MB9A150R Series

1. Equipped with a user-friendly power-saving mode

The new MB9A150R Series enables low power consumption, consuming a current of 8mA (with the peripheral clock stopped) when running the CPU at 40 MHz. Moreover, through clock gating and power gating technology, the series can be set to six different power-saving mode patterns, including sleep mode, timer mode, RTC mode, stop mode, deep standby RTC mode, and deep standby stop mode. Current consumption can be reduced depending on the usage specifications, such as to 14 μ A when RTC mode is employed for date and time management, or to 2.0 μ A when deep standby RTC mode is employed with the internal SRAM power source switched off.

2. HDMI-CEC macros for user interfaces in AV devices and other equipment

The series is equipped with transmission/receiver functionalities for HDMI-CEC, a standard interface among AV devices, and remote control receiver functions, both of which are available up to two channels.

3. Dual-operation functionality for flash memory

The MB9A150R Series' built-in flash memory is equipped with dual-operation functionality that allows data to be written while programming is taking place. Through this feature, external nonvolatile memory can be incorporated into the microcontroller, leading to a reduction in the number of external components required. This, in turn, helps to conserve space and reduce costs.

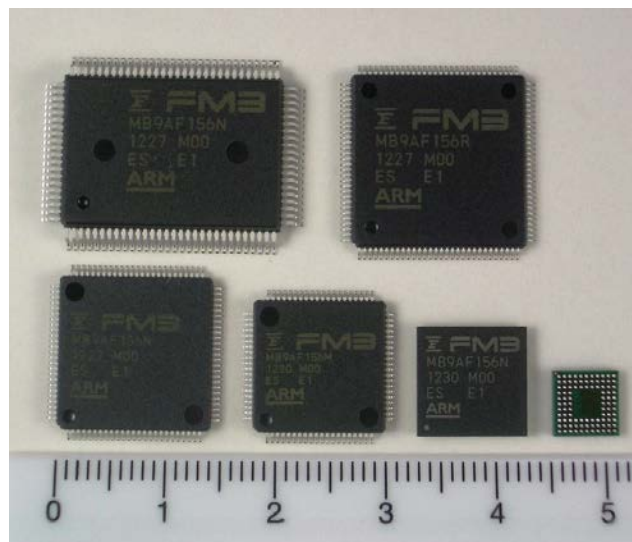


Photo 2. MB9A150R Series

Product Lineup
Low Power Group

Operation Frequency (Max.)	Package	Size(mm) (X*Y)	Flash/RAM density		
			256KB+32KB /32KB	384KB+32KB /48KB	512KB+32KB /64KB
40MHz	LQFP-120 0.5mm pitch	16*16	MB9AF154RPMC	MB9AF155RPMC	MB9AF156RPMC
	BGA-112 0.8mm pitch	10*10	MB9AF154NBGL	MB9AF155NBGL	MB9AF156NBGL
	LQFP-100 0.5mm pitch	14*14	MB9AF154NPMC	MB9AF155NPMC	MB9AF156NPMC
	QFP-100 0.65mm pitch	14*20	MB9AF154NPQC	MB9AF155NPQC	MB9AF156NPQC
	LQFP-80 0.5mm pitch	12*12	MB9AF154MPMC	MB9AF155MPMC	MB9AF156MPMC
	LQFP-80 0.65mm pitch	14*14	MB9AF154MPMC1	MB9AF155MPMC1	MB9AF156MPMC1
	BGA-96 0.5mm pitch	6*6	MB9AF154MBGL	MB9AF155MBGL	MB9AF156MBGL