

MB9B520T/420T/320T/120T Series (Basic Group)

1. High Capacity Flash Memory

Maximum flash memory capacity of the existing FM3 family products was 1 MB. The new series features greater capacity up to 1.5 MB, and makes it possible to support multiple languages in the display components of AV and office automation equipment, or other devices that need to handle more parameters and data.

2. Full array of communications functions

While retaining the communications functionality of the High Performance Group, the new products 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/I²C). The series can be deployed in a wide range of applications, such as industrial systems equipment; energy management systems such as BEMS/HEMS; and other network-enabled devices such as office automation equipment.

3. 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.

Lineup: MB9B520T/420T/320T/120T Series (24 products)

Operation Frequency (Max.)	Package	Size [mm] (X*Y)	Peripheral		Flash /RAM density	
			USB2.0 Host/Function	CAN	1MB+64KB / 160KB	1.5MB+64KB / 192KB
60MHz	LQFP-176 0.5mm pitch	24*24	1	1	MB9BF528TPMC	MB9BF529TPMC
			-	1	MB9BF428TPMC	MB9BF429TPMC
			1	-	MB9BF328TPMC	MB9BF329TPMC
			-	-	MB9BF128TPMC	MB9BF129TPMC
	BGA-192 0.8mm pitch	12*12	1	1	MB9BF528TBGL	MB9BF529TBGL
			-	1	MB9BF428TBGL	MB9BF429TBGL
			1	-	MB9BF328TBGL	MB9BF329TBGL
			-	-	MB9BF128TBGL	MB9BF129TBGL
	LQFP-144 0.5mm pitch	20*20	1	1	MB9BF528SPMC	MB9BF529SPMC
			-	1	MB9BF428SPMC	MB9BF429SPMC
			1	-	MB9BF328SPMC	MB9BF329SPMC
			-	-	MB9BF128SPMC	MB9BF129SPMC

[Larger View](#)

MB9B120J Series (Basic Group)

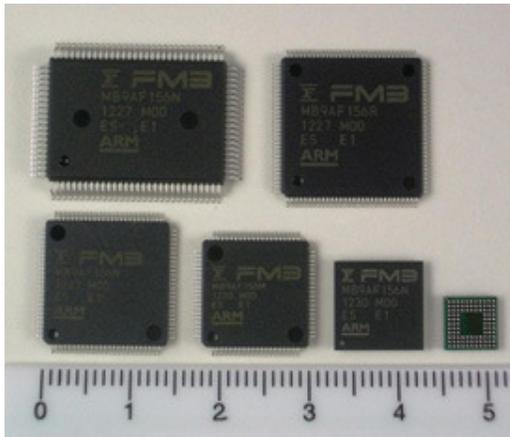
1. Peripheral functionality enabling support for high-precision motor control

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 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 1.0μs conversion) demonstrates exceptional performance in applications such as highly-efficient inverters used in household appliances and industrial systems. With 1 unit and up to 8 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.

2. Small size package

The series comes with 5mm x 5mm QFN 32-pin package, the smallest for the FM3 family of products. It provides optimal solutions for applications that require high precision motor control and small mounted area at the same time, such as equipment using brushless motors.



Operation Frequency (Max.)	Package	Size [mm] (X*Y)	Flash / RAM density
			64KB / 8KB
72MHz	LQFP-32 0.8mm pitch	7*7	MB9BF121JPMC
	QFN-32 0.5mm pitch	5*5	MB9BF121JWQN

Lineup: MB9B120J Series (2 products)

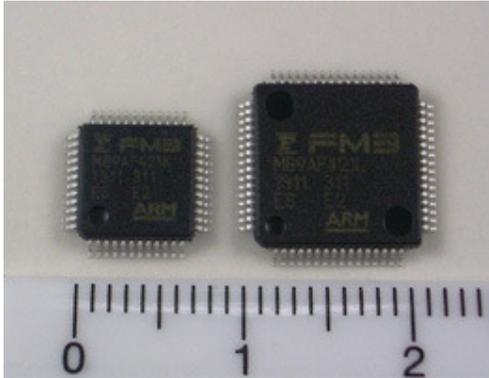
MB9A420L/120L Series (Basic Group)

1. Wide range of operating voltages and low power consumption

This series can run on operating voltages ranging from 2.7V to 5.5V. It can be applied for various industrial equipment and home appliances, which include both 3V and 5V supply voltage systems. It has also achieved low power consumption; it runs almost at half the operating current compared with the High Performance Group products of the FM3 family.

2. Rich array of peripheral functions

The series features CAN communications functionality, a multifunction timer that is capable of inverter control, and a 10-bit DA converter. It is an optimal option for use in equipment that requires push button tone control, such as elevators, building management applications, and electronic switchboards.



MB9A420L Series

Lineup: MB9A420L/120L Series (12 products)

Operation Frequency (Max)	Package	Size [mm] (X*Y)	Peripheral	Flash / RAM density
			CAN	64KB / 4KB
40MHz	LQFP-64 0.5mm pitch	10*10	1	MB9AF421 LPMC1
			-	MB9AF121 LPMC1
	LQFP-64 0.65mm pitch	12*12	1	MB9AF421 LPMC
			-	MB9AF121 LPMC
	QFN-64 0.5mm pitch	9*9	1	MB9AF421 LVWQN
			-	MB9AF121 LVWQN
	LQFP-52 0.65mm pitch	10*10	1	MB9AF421 KPMC1
			-	MB9AF121 KPMC1
	LQFP-48 0.5mm pitch	7*7	1	MB9AF421 KPMC
			-	MB9AF121 KPMC
	QFN-48 0.5mm pitch	7*7	1	MB9AF421 KWQGN
			-	MB9AF121 KWQGN