# Spansion® Microcontroller
Product Selection Guide

SPANSION®

Consumer and Industrial MCU Core Roadmap

Consumer and Industrial MCU Family
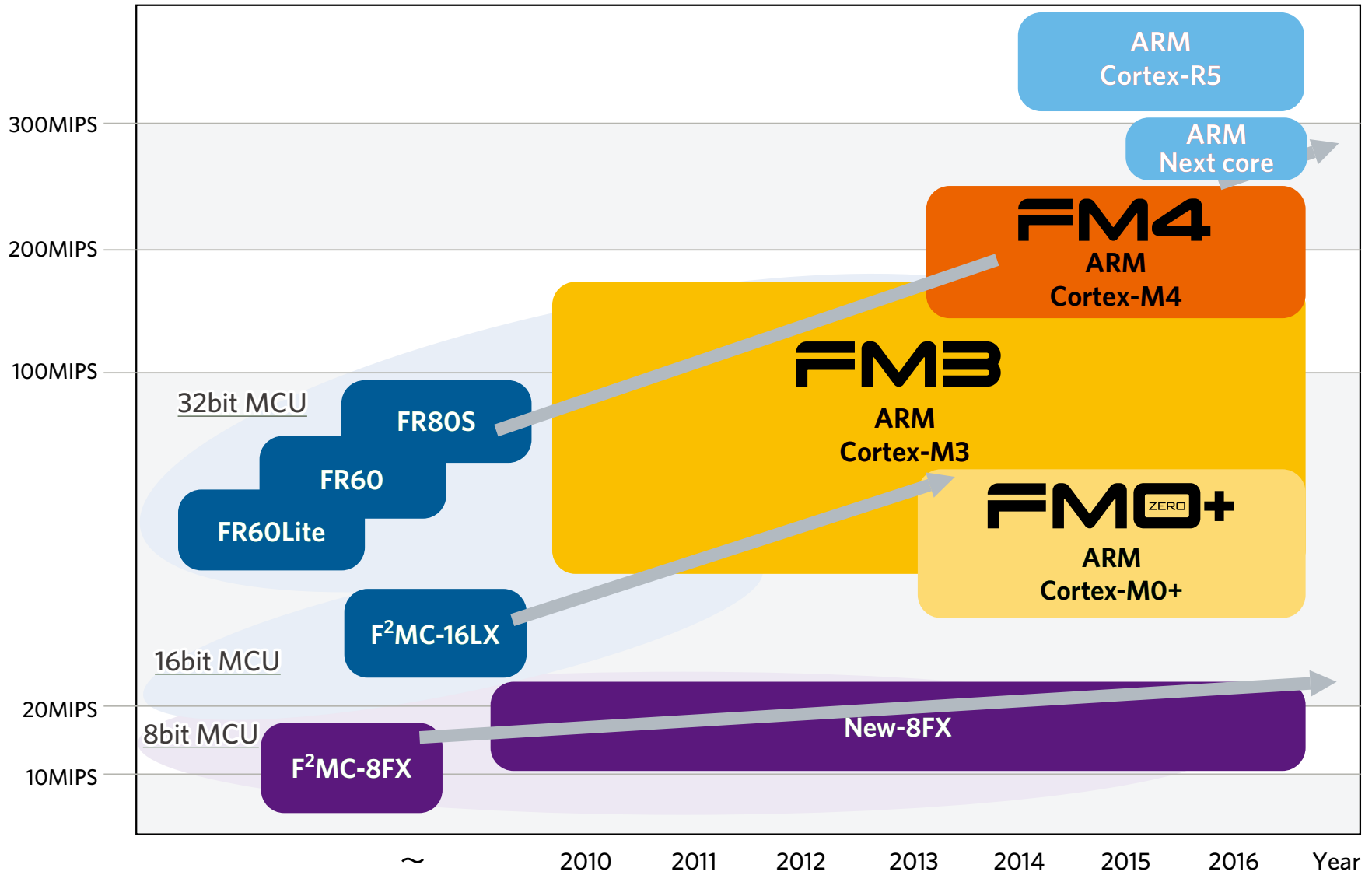
FM4 Family

Spansion's FM MCU Microcontroller family, based on ARM Cortex-M0+, M3 and M4F CPUs, is a scalable platform for many industrial applications. Customers can select the best fitting device from a range of products, coming in packages from 32pin to 176pin and flash memory densities between 56KB and 1.5MB.

With a maximum CPU frequency of 160MHz, a high speed flash memory, DSP and FPU hardware instructions, FM4 covers the high end of the line-up. The wide operation supply voltage range up to 5.5V improves the signal to noise ratio, results in a robust design and is unique among Cortex-M Microcontroller families. All products are based on the same architecture (software compatible), use the same peripherals and are pin compatible in most cases.

FM0+ Family

The FM0+ family, which is based on the ARM Cortex-M0+ core, is designed for industrial and cost-sensitive applications with low power requirements such as white goods, sensors, meters, HMI systems and power tools.

The family, which operates at 40MHz, has a run-mode current of 70×A/MHz and an RTC mode current of 0.7×A. The FM0+ family can be easily embedded into systems adopting Spansion's 8-, 16- or 32-bit MCUs, accelerating product development and reducing development costs. The FM0+ family includes two groups for ultra-low-power and cost-effective applications.

FM3 Family

Spansions ARM Cortex-M3 Microcontroller family is a scalable platform for many industrial applications. Customers can select the best fitting device from a range of products, coming in packages from 32pin to 176pin and flash memory densities between 32KB and 1MB. With a maximum CPU frequency of 144MHz and a high speed flash memory, FM3 belongs to the fastest ARM Cortex-M3 devices on the market. The wide operation supply voltage range up to 5.5V improves the signal to noise ratio, results in a robust design and is quite unique among Cortex-M3 Microcontroller families. The FM3 MCU family is split into 4 groups: High Performance, Basic, Low Power and Ultra Low Leakage Group. Main differences are CPU operation frequency and supply voltage. Beside this, all products are based on the same architecture (software compatible), use the same peripherals and are pin compatible in most cases. The ultra low leakage line products are based on an optimized low leakage process technology. Development tools and evaluation boards are offered from different vendors and Spansion.

New 8FX Family

Spansion New 8FX MCU is a high-performance 8-bit microcontroller with different size of embedded flash memory. The new series use the F2MC-8FX CISC CPU, which offers industry-leading class performance of 8-bit microcontrollers unit enabling more instructions to be executed per cycle. On top of delivering the industry class performance of the MCU, this series MCU also deliver low power efficient MCU products for the customer's usage.

This new series MCU also feature a variety of on-chip timers, A/D converters, analog and digital peripheral and communication interface such as LIN-UART (Local Interconnect Network Universal Asynchronous Receiver-Transmitter), CAN (controller area network), I²C (Inter-Integrated Circuit) interface for various application usage.

For easy development, these new series also employ a 1-line on-chip debug that uses only one pin on the microcontroller, thereby minimizing the number of pins used for debugging in product development. On top of that, Spansion Microelectronics also provides easy to use and cost competitive development starter kit and development environment for this new series MCU.

Automotive MCU Core Roadmap

Performance

Cortex R5 [32bit ARM]

FCR4
Cortex R4 [32bit ARM]

FR81S
[32bit Original core]

FR60/FR60Lite
[32bit Original core]

F^{2}MC-16FX
[16bit Original core]

F^{2}MC-16LX
[16bit Original core]

2009   2011   2013   2015
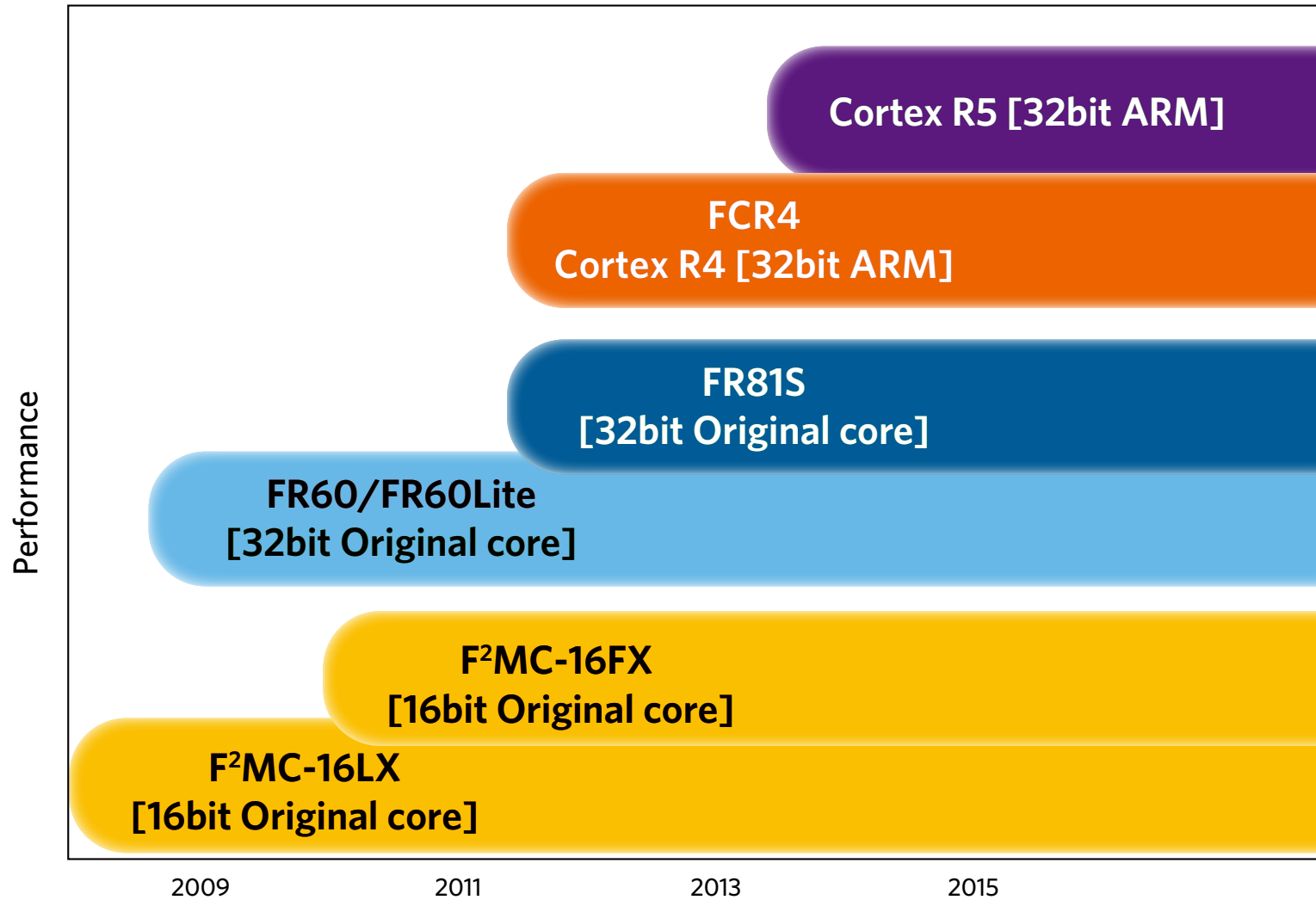
FR Family

Modern automotive and industrial designs demand higher computing power combined with a high degree of integration. Efficient data collection, data processing and distribution are essential and need a large number of communication interfaces such as CAN, FlexRay and LIN as well as a large on-chip memory capacity.

Spansion's 32bit MCU families have been designed in close co-operation with major automotive customers worldwide and inherit the high-performance core of Spansion's proprietary FR MCU architecture. The latest members (MB915xx) also include a single precision Floating Point Unit (FPU) providing additional computing power required by complex control algorithms.

This high computing performance combined with powerful peripheral functions such as on-chip graphics controller and motor control macros offers a higher grade of flexibility and lower cost for automotive as well as industrial applications.

Many devices offer an external bus interface which can be connected to Spansion's stand alone Flexray controller or to the latest generation of graphics controllers in order to build full-featured dashboards, driver information and advanced driver assistance systems.

F^{2}MC-16FX Family

Spansion's 16-bit Flexible Microcontroller series offers a scalable family concept approach to a variety of automotive and industrial applications. The combination of different FLASH/ROM/RAM sizes with different mixtures of peripherals saves development time and costs. CAN and LIN support, on-chip LCD controller, SMC (stepper motor controller), I^{2}C bus interface, analogue input channels, external bus interface, selectable port levels for CMOS, TTL and automotive levels are some of the enhanced features. A security feature is incorporated on some devices, preventing unauthorized reading of the contents of the Flash memory.

Spansion's 16-bit CPU core features easy programming with plenty of data types such as bit, nibble, byte, word and long word, together with 23 addressing modes. The 16MB memory address range is accessible using bank or linear addressing modes, which are fully supported by the optimized instruction set.

On-chip registers such as USER and SYSTEM stack pointers, together with supporting instructions, provide additional advanced support for RealTime Operating Systems.

Series Name	Product Name	Maximum Internal Clock Frequency [MHz]	Package [pin]	Operating Voltage: VCC [V]	Sub Clock	Memory Type	ROM [byte]	RAM [byte]	Cache [Kbyte]	DMAC [ch]	Ext. Interrupt [ch]	External Bus	Maximum I/O port [ch]	10bit AD Converter [ch(unit)]	12bit AD Converter [ch(unit)]	DA Converter [bit x ch]	Output Compare [ch]	Free-Run Timer [ch]	Input Capture [ch]	Reload Timer [ch]	PWM Timer [ch]	PWC Timer [ch]	PPG Timer [ch]	Up/Down Counter [ch]	Other timers [ch]	I²C [ch]	UART/SIO [ch]	SIO [ch]	LIN/UART/SIO [ch]	CAN [ch]	USB-Host [ch]	USB-Function [ch]	LCD Controller [seg x com]	Three-phase Inverter	Note	Evaluation Device
MB9B560R	MB9BF566M	160	LQFP-80	2.7 to 5.5	○	Main Flash +Work Flash	512K +32K	64K	-	8	16	○	63		16(3)	12 x 2	Multi-Function Timer x 2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable)			Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)				QPRC x 2	1		Multi Function Serial x 8ch (UART/CSIO/I²C/LIN Selectable)			2		1ch (USB-Host/ USB-Function Selectable)	-	○	CAN: 32Msg-buffer, Dual Timer, Real Time Clock, DSTC x 128ch, Unique ID, SD Card I/F	On-chip Debug (SWJ-DP/ETM)
	MB9BF566N		LQFP-100 QFP-100 BGA-112										80		24(3)																						
	MB9BF566R		LQFP-120 BGA-144										100																								
	MB9BF567M		LQFP-80				768K +32K	96K					63		16(3)																						
	MB9BF567N		LQFP-100 QFP-100 BGA-112										80		24(3)																						
	MB9BF567R		LQFP-120 BGA-144										100																								
	MB9BF568M		LQFP-80				1024K +32K	128K					63		16(3)																						
	MB9BF568N		LQFP-100 QFP-100 BGA-112										80		24(3)																						
	MB9BF568R		LQFP-120 BGA-144										100																								
MB9B460R	MB9BF466M	160	LQFP-80	2.7 to 5.5	○	Main Flash +Work Flash	512K +32K	64K	-	8	16	○	63		16(3)	12 x 2	Multi-Function Timer x 2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable)			Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)				QPRC x 2	1		Multi Function Serial x 8ch (UART/CSIO/I²C/LIN Selectable)			2	-	-	-	○	CAN: 32Msg-buffer, Dual Timer, Real Time Clock, DSTC x 128ch, Unique ID, SD Card I/F	On-chip Debug (SWJ-DP/ETM)
	MB9BF466N		LQFP-100 QFP-100 BGA-112										80		24(3)																						
	MB9BF466R		LQFP-120 BGA-144										100																								
	MB9BF467M		LQFP-80				768K +32K	96K					63		16(3)																						
	MB9BF467N		LQFP-100 QFP-100 BGA-112										80		24(3)																						
	MB9BF467R		LQFP-120 BGA-144										100																								
	MB9BF468M		LQFP-80				1024K +32K	128K					63		16(3)																						
	MB9BF468N		LQFP-100 QFP-100 BGA-112										80		24(3)																						
	MB9BF468R		LQFP-120 BGA-144										100																								
MB9B360R	MB9BF366M	160	LQFP-80	2.7 to 5.5	○	Main Flash +Work Flash	512K +32K	64K	-	8	16	○	63		16(3)	12 x 2	Multi-Function Timer x 2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable)			Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)				QPRC x 2	1		Multi Function Serial x 8ch (UART/CSIO/I²C/LIN Selectable)			-		1ch (USB-Host/ USB-Function Selectable)	-	○	Dual Timer, Real Time Clock, DSTC x 128ch, Unique ID, SD Card I/F	On-chip Debug (SWJ-DP/ETM)
	MB9BF366N		LQFP-100 QFP-100 BGA-112										80		24(3)																						
	MB9BF366R		LQFP-120 BGA-144										100																								
	MB9BF367M		LQFP-80				768K +32K	96K					63		16(3)																						
	MB9BF367N		LQFP-100 QFP-100 BGA-112										80		24(3)																						
	MB9BF367R		LQFP-120 BGA-144										100																								
	MB9BF368M		LQFP-80				1024K +32K	128K					63		16(3)																						
	MB9BF368N		LQFP-100 QFP-100 BGA-112										80		24(3)																						
	MB9BF368R		LQFP-120 BGA-144										100																								
MB9B160R	MB9BF166M	160	LQFP-80	2.7 to 5.5	○	Main Flash +Work Flash	512K +32K	64K	-	8	16	○	63		16(3)	12 x 2	Multi-Function Timer x 2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable)			Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)				QPRC x 2	1		Multi Function Serial x 8ch (UART/CSIO/I²C/LIN Selectable)			-	-	-	-	○	Dual Timer, Real Time Clock, DSTC x 128ch, Unique ID, SD Card I/F	On-chip Debug (SWJ-DP/ETM)
	MB9BF166N		LQFP-100 QFP-100 BGA-112										80		24(3)																						
	MB9BF166R		LQFP-120 BGA-144										100																								
	MB9BF167M		LQFP-80				768K +32K	96K					63		16(3)																						
	MB9BF167N		LQFP-100 QFP-100 BGA-112										80		24(3)																						
	MB9BF167R		LQFP-120 BGA-144										100																								
	MB9BF168M		LQFP-80				1024K +32K	128K					63		16(3)																						
	MB9BF168N		LQFP-100 QFP-100 BGA-112										80		24(3)																						
	MB9BF168R		LQFP-120 BGA-144										100																								

Series	Product	Package	Pin	Vcc		Flash Type	Flash	RAM								Multi-Function Timer	Base Timer	QPRC		Multi Function Serial		USB				CAN / Others	Debug
MB9B560L	MB9BF564K	LQFP-48 QFN-48	160	2.7 to 5.5	○	Main Flash +Work Flash	256K +32K	32K	-	8	-	15	33	-	8(2)	12 x 2	Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable)	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 1	1	Multi Function Serial x 6ch (UART/CSIO/I²C/LIN Selectable)	1	1ch (USB-Host/ USB-Function Selectable)	-	○	CAN: 32Msg-buffer, Dual Timer, Real Time Clock, Unique ID, DSTC x 128ch	On-chip Debug (SWJ-DP)
	MB9BF564L	LQFP-64 QFN-64										16	48		15(2)		Multi-Function Timer x 2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable)										
	MB9BF565K	LQFP-48 QFN-48					384K +32K	48K				15	33		8(2)		Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable)										
	MB9BF565L	LQFP-64 QFN-64										16	48		15(2)		Multi-Function Timer x 2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable)										
	MB9BF566K	LQFP-48 QFN-48					512K +32K	64K				15	33		8(2)		Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable)										
	MB9BF566L	LQFP-64 QFN-64										16	48		15(2)		Multi-Function Timer x 2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable)										
MB9B460L	MB9BF464K	LQFP-48 QFN-48	160	2.7 to 5.5	○	Main Flash +Work Flash	256K +32K	32K	-	8	-	15	33	-	8(2)	12 x 2	Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable)	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 1	1	Multi Function Serial x 6ch (UART/CSIO/I²C/LIN Selectable)	1	-	-	-	○	CAN: 32Msg-buffer, Dual Timer, Real Time Clock, Unique ID, DSTC x 128ch	On-chip Debug (SWJ-DP)
	MB9BF464L	LQFP-64 QFN-64										16	48		15(2)		Multi-Function Timer x 2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable)										
	MB9BF465K	LQFP-48 QFN-48					384K +32K	48K				15	33		8(2)		Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable)										
	MB9BF465L	LQFP-64 QFN-64										16	48		15(2)		Multi-Function Timer x 2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable)										
	MB9BF466K	LQFP-48 QFN-48					512K +32K	64K				15	33		8(2)		Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable)										
	MB9BF466L	LQFP-64 QFN-64										16	48		15(2)		Multi-Function Timer x 2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable)										

*: Under developing, **: Under planning

Series Name	Product Name	Max Internal Clock Freq [MHz]	Package [pin]	Operating Voltage: VCC [V]	Sub Clock	Memory Type	ROM [byte]	RAM [byte]	Cache [Kbyte]	DMAC [ch]	Ext. Interrupt [ch]	External Bus	Maximum I/O port [ch]	10bit AD Converter [ch(unit)]	12bit AD Converter [ch(unit)]	DA Converter [bit x ch]	Output Compare [ch] / Free-Run / Input Capture	Reload/PWM/PWC/PPG Timer	Up/Down Counter [ch]	Other timers [ch]	Serial (I²C/UART/SIO/LIN)	CAN [ch]	USB-Host / USB-Function [ch]	USB-Function [ch]	LCD Controller [seg x com]	Three-phase Inverter	Note	Evaluation Device
MB9B360L	MB9BF364K	160	LQFP-48 QFN-48	2.7 to 5.5	○	Main Flash +Work Flash	256K +32K	32K	-	8	15	-	33	-	8(2)	12 x 2	Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable)	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 1	1	Multi Function Serial x 6ch (UART/CSIO/I²C/LIN Selectable)	-	1ch (USB-Host/ USB-Function Selectable)	-	-	○	Dual Timer, Real Time Clock, Unique ID, DSTC x 128ch	On-chip Debug (SWJ-DP)
	MB9BF364L		LQFP-64 QFN-64								16		48		15(2)		Multi-Function Timer x 2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable)											
	MB9BF365K		LQFP-48 QFN-48				384K +32K	48K			15		33		8(2)		Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable)											
	MB9BF365L		LQFP-64 QFN-64								16		48		15(2)		Multi-Function Timer x 2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable)											
	MB9BF366K		LQFP-48 QFN-48				512K +32K	64K			15		33		8(2)		Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable)											
	MB9BF366L		LQFP-64 QFN-64								16		48		15(2)		Multi-Function Timer x 2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable)											
MB9B160L	MB9BF164K	160	LQFP-48 QFN-48	2.7 to 5.5	○	Main Flash +Work Flash	256K +32K	32K	-	8	15	-	33	-	8(2)	12 x 2	Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable)	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 1	1	Multi Function Serial x 6ch (UART/CSIO/I²C/LIN Selectable)	-	-	-	-	○	Dual Timer, Real Time Clock, Unique ID, DSTC x 128ch	On-chip Debug (SWJ-DP)
	MB9BF164L		LQFP-64 QFN-64								16		48		15(2)		Multi-Function Timer x 2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable)											
	MB9BF165K		LQFP-48 QFN-48				384K +32K	48K			15		33		8(2)		Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable)											
	MB9BF165L		LQFP-64 QFN-64								16		48		15(2)		Multi-Function Timer x 2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable)											

Group	Series Name	Product Name	Max Internal Clock [MHz]	Package [pin]	Operating Voltage VCC [V]	Sub Clock	Memory Type	ROM [byte]	RAM [byte]	Cache [Kbyte]	DMAC [ch]	Ext. Interrupt [ch]	External Bus	Max I/O port [ch]	10bit AD Converter [ch(unit)]	12bit AD Converter [ch(unit)]	DA Converter [bit x ch]	Timer	Base Timer	Up/Down Counter [ch]	Other timers [ch]	Serial	CAN [ch]	USB-Host / USB-Function [ch]	LCD Controller [seg x com]	Three-phase Inverter	Note	Evaluation Device
	MB9B160L	MB9BF166K	160	LQFP-48 / QFN-48	2.7 to 5.5	○	Main Flash +Work Flash	512K +32K	64K	-	8	-	-	15	33	-	12 x 2	Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable)	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 1	1	Multi Function Serial x 6ch (UART/CSIO/I²C/LIN Selectable)	-	- / -	-	○	Dual Timer, Real Time Clock, Unique ID, DSTC x 128ch	On-chip Debug (SWJ-DP)
		MB9BF166L		LQFP-64 / QFN-64										16	48	-	—	Multi-Function Timer x 2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable)										
														8(2)														
														15(2)														

*: Under developing, **: Under planning

FM3 Family • *32* bit Microcontrollers

Group	Series Name	Product Name	Max Internal Clock [MHz]	Package [pin]	Operating Voltage VCC [V]	Sub Clock	Memory Type	ROM [byte]	RAM [byte]	Cache [Kbyte]	DMAC [ch]	Ext. Interrupt [ch]	External Bus	Max I/O port [ch]	10bit AD [ch(unit)]	12bit AD [ch(unit)]	DA Converter	Timer	Base Timer	Up/Down Counter (QPRC)	Other timers [ch]	Serial	CAN [ch]	USB-Host / USB-Function	LCD Controller	Three-phase Inverter	Note	Evaluation Device
High-performance group	MB9BD10T	MB9BFD16T	144	LQFP-176 / BGA-192	2.7 to 5.5	○	FLASH	512K	64K	-	8	32	○	154	-	32(3)	-	Multi-Function Timer x 3units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)	Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 3	1	Multi Function Serial x 8ch (UART/CSIO/I²C/LIN Selectable)	2	2ch (USB-Host/ USB-Function Selectable)	-	○	CAN: 32Msg-buffer, Dual Timer, Ethernet-MAC x 2ch	On-chip Debug (SWJ-DP/ETM)
		MB9BFD16S		LQFP-144										122		24(3)												
		MB9BFD17T		LQFP-176 / BGA-192				768K	96K					154		32(3)												
		MB9BFD17S		LQFP-144										122		24(3)												
		MB9BFD18T		LQFP-176 / BGA-192				1M	128K					154		32(3)												
		MB9BFD18S		LQFP-144										122		24(3)												
	MB9B610T	MB9BF616T	144	LQFP-176 / BGA-192	2.7 to 5.5	○	FLASH	512K	64K	-	8	32	○	154	-	32(3)	-	Multi-Function Timer x 3units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)	Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 3	1	Multi Function Serial x 8ch (UART/CSIO/I²C/LIN Selectable)	-	2ch (USB-Host/ USB-Function Selectable)	-	○	Dual Timer, Ethernet-MAC x 2ch	On-chip Debug (SWJ-DP/ETM)
		MB9BF616S		LQFP-144										122		24(3)												
		MB9BF617T		LQFP-176 / BGA-192				768K	96K					154		32(3)												
		MB9BF617S		LQFP-144										122		24(3)												
		MB9BF618T		LQFP-176 / BGA-192				1M	128K					154		32(3)												
		MB9BF618S		LQFP-144										122		24(3)												
	MB9B510T	MB9BF516T	144	LQFP-176 / BGA-192	2.7 to 5.5	○	FLASH	512K	64K	-	8	32	○	154	-	32(3)	-	Multi-Function Timer x 3units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)	Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 3	1	Multi Function Serial x 8ch (UART/CSIO/I²C/LIN Selectable)	2	2ch (USB-Host/ USB-Function Selectable)	-	○	CAN: 32Msg-buffer, Dual Timer	On-chip Debug (SWJ-DP/ETM)
		MB9BF516S		LQFP-144										122		24(3)												
		MB9BF517T		LQFP-176 / BGA-192				768K	96K					154		32(3)												
		MB9BF517S		LQFP-144										122		24(3)												
		MB9BF518T		LQFP-176 / BGA-192				1M	128K					154		32(3)												
		MB9BF518S		LQFP-144										122		24(3)												
	MB9B410T	MB9BF416T	144	LQFP-176 / BGA-192	2.7 to 5.5	○	FLASH	512K	64K	-	8	32	○	154	-	32(3)	-	Multi-Function Timer x 3units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)	Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 3	1	Multi Function Serial x 8ch (UART/CSIO/I²C/LIN Selectable)	2	- / -	-	○	CAN: 32Msg-buffer, Dual Timer	On-chip Debug (SWJ-DP/ETM)
		MB9BF416S		LQFP-144										122		24(3)												
		MB9BF417T		LQFP-176 / BGA-192				768K	96K					154		32(3)												
		MB9BF417S		LQFP-144										122		24(3)												
		MB9BF418T		LQFP-176 / BGA-192				1M	128K					154		32(3)												
		MB9BF418S		LQFP-144										122		24(3)												
	MB9B310T	MB9BF316T	144	LQFP-176 / BGA-192	2.7 to 5.5	○	FLASH	512K	64K	-	8	32	○	154	-	32(3)	-	Multi-Function Timer x 3units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)	Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 3	1	Multi Function Serial x 8ch (UART/CSIO/I²C/LIN Selectable)	-	2ch (USB-Host/ USB-Function Selectable)	-	○	Dual Timer	On-chip Debug (SWJ-DP/ETM)
		MB9BF316S		LQFP-144										122		24(3)												
		MB9BF317T		LQFP-176 / BGA-192				768K	96K					154		32(3)												
		MB9BF317S		LQFP-144										122		24(3)												
		MB9BF318T		LQFP-176 / BGA-192				1M	128K					154		32(3)												
		MB9BF318S		LQFP-144										122		24(3)												

*: Under developing, **: Under planning

Group	Series Name	Product Name	Maximum Internal Clock Frequency [MHz]	Package [pin]	Operating Voltage: VCC [V]	Sub Clock	Memory Type	ROM [byte]	RAM [byte]	Cache [Kbyte]	DMAC [ch]	Ext. Interrupt [ch]	External Bus	Maximum I/O port [ch]	10bit AD Converter [ch(unit)]	12bit AD Converter [ch(unit)]	DA Converter [bit x ch]	Timer (Output Compare / Free-Run / Input Capture / PWM / PWC / PPG)	Reload Timer etc.	Up/Down Counter [ch]	Other timers [ch]	Serial (I²C / UART/SIO / SIO / LIN/UART/SIO)	CAN [ch]	USB-Host / USB-Function [ch]	LCD Controller [seg x com]	Three-phase Inverter	Note	Evaluation Device
High-performance group	MB9B210T	MB9BF216T	144	LQFP-176 BGA-192	2.7 to 5.5	○	FLASH	512K	64K	-	8	32	○	154	-	32(3)	-	Multi-Function Timer x 3units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)	Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 3	1	Multi Function Serial x 8ch (UART/CSIO/I²C/LIN Selectable)	-	2ch (USB-Host/ USB-Function Selectable)	-	○	Dual Timer, Ethernet-MAC x 1ch	On-chip Debug (SWJ-DP/ETM)
		MB9BF216S		LQFP-144										122		24(3)												
		MB9BF217T		LQFP-176 BGA-192				768K	96K					154		32(3)												
		MB9BF217S		LQFP-144										122		24(3)												
		MB9BF218T		LQFP-176 BGA-192				1M	128K					154		32(3)												
		MB9BF218S		LQFP-144										122		24(3)												
	MB9B110T	MB9BF116T	144	LQFP-176 BGA-192	2.7 to 5.5	○	FLASH	512K	64K	-	8	32	○	154	-	32(3)	-	Multi-Function Timer x 3units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)	Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 3	1	Multi Function Serial x 8ch (UART/CSIO/I²C/LIN Selectable)	-	-	-	○	Dual Timer	On-chip Debug (SWJ-DP/ETM)
		MB9BF116S		LQFP-144										122		24(3)												
		MB9BF117T		LQFP-176 BGA-192				768K	96K					154		32(3)												
		MB9BF117S		LQFP-144										122		24(3)												
		MB9BF118T		LQFP-176 BGA-192				1M	128K					154		32(3)												
		MB9BF118S		LQFP-144										122		24(3)												
	MB9B510R	MB9BF512N	144	QFP-100 LQFP-100 BGA-112	2.7 to 5.5	○	Main Flash +Work Flash	128K +32K	16K	-	8	16	○	83	-	16(3)	-	Multi-Function Timer x 3units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 3	1	Multi Function Serial x 8ch (UART/CSIO/I²C/LIN Selectable)	2	1ch (USB-Host/ USB-Function Selectable)	-	○	CAN: 32Msg-buffer, Dual Timer	On-chip Debug (SWJ-DP/ETM)
		MB9BF512R		LQFP-120										103														
		MB9BF514N		QFP-100 LQFP-100 BGA-112				256K +32K	32K					83														
		MB9BF514R		LQFP-120										103														
		MB9BF515N		QFP-100 LQFP-100 BGA-112				384K +32K	48K					83														
		MB9BF515R		LQFP-120										103														
		MB9BF516N		QFP-100 LQFP-100 BGA-112				512K +32K	64K					83														
		MB9BF516R		LQFP-120										103														
	MB9B410R	MB9BF412N	144	QFP-100 LQFP-100 BGA-112	2.7 to 5.5	○	Main Flash +Work Flash	128K +32K	16K	-	8	16	○	83	-	16(3)	-	Multi-Function Timer x 3units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 3	1	Multi Function Serial x 8ch (UART/CSIO/I²C/LIN Selectable)	2	-	-	○	CAN: 32Msg-buffer, Dual Timer	On-chip Debug (SWJ-DP/ETM)
		MB9BF412R		LQFP-120										103														
		MB9BF414N		QFP-100 LQFP-100 BGA-112				256K +32K	32K					83														
		MB9BF414R		LQFP-120										103														
		MB9BF415N		QFP-100 LQFP-100 BGA-112				384K +32K	48K					83														
		MB9BF415R		LQFP-120										103														
		MB9BF416N		QFP-100 LQFP-100 BGA-112				512K +32K	64K					83														
		MB9BF416R		LQFP-120										103														
	MB9B310R	MB9BF312N	144	QFP-100 LQFP-100 BGA-112	2.7 to 5.5	○	Main Flash +Work Flash	128K +32K	16K	-	8	16	○	83	-	16(3)	-	Multi-Function Timer x 3units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 3	1	Multi Function Serial x 8ch (UART/CSIO/I²C/LIN Selectable)	-	1ch (USB-Host/ USB-Function Selectable)	-	○	Dual Timer	On-chip Debug (SWJ-DP/ETM)
		MB9BF312R		LQFP-120										103														
		MB9BF314N		QFP-100 LQFP-100 BGA-112				256K +32K	32K					83														
		MB9BF314R		LQFP-120										103														
		MB9BF315N		QFP-100 LQFP-100 BGA-112				384K +32K	48K					83														
		MB9BF315R		LQFP-120										103														
		MB9BF316N		QFP-100 LQFP-100 BGA-112				512K +32K	64K					83														
		MB9BF316R		LQFP-120										103														

Group	Sub-group	Product	Package	Pin	Power Supply (V)	Flash	Flash / Work Flash	Flash Size	RAM		Bit	ADC Res.		GPIO		A/D Converter		Multi-Function Timer	Base Timer	QPRC		Multi Function Serial	USB				Others	CAN / Others	On-chip Debug
High-performance group	MB9B110R	MB9BF112N	QFP-100 / LQFP-100 / BGA-112	144	2.7 to 5.5	○	Main Flash +Work Flash	128K +32K	16K	-	8	16	○	83	-	16(3)	-	Multi-Function Timer x 3units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 3	1	Multi Function Serial x 8ch (UART/CSIO/I²C/LIN Selectable)	-	-	-	-	○	Dual Timer	On-chip Debug (SWJ-DP/ETM)
		MB9BF112R	LQFP-120											103																
		MB9BF114N	QFP-100 / LQFP-100 / BGA-112					256K +32K	32K					83																
		MB9BF114R	LQFP-120											103																
		MB9BF115N	QFP-100 / LQFP-100 / BGA-112					384K +32K	48K					83																
		MB9BF115R	LQFP-120											103																
		MB9BF116N	QFP-100 / LQFP-100 / BGA-112					512K +32K	64K					83																
		MB9BF116R	LQFP-120											103																
	MB9B500B	MB9BF504NB	LQFP-100 / BGA-112	80	2.7 to 5.5	○	FLASH		256K	32K	-	8	16	○	80	-	16(3)	-	Multi-Function Timer x 2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 2	1	Multi Function Serial x 8ch (UART/CSIO/I²C/LIN Selectable)	2	1ch (USB-Host/ USB-Function Selectable)	-	○	CAN: 32Msg-buffer, Dual Timer	On-chip Debug (SWJ-DP/ETM)
		MB9BF504RB	LQFP-120											100																
		MB9BF505NB	LQFP-100 / BGA-112					384K	48K					80																
		MB9BF505RB	LQFP-120											100																
		MB9BF506NB	LQFP-100 / BGA-112					512K	64K					80																
		MB9BF506RB	LQFP-120											100																
	MB9B400A	MB9BF404NA	LQFP-100 / BGA-112	80	2.7 to 5.5	○	FLASH		256K	32K	-	8	16	○	80	-	16(3)	-	Multi-Function Timer x 2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 2	1	Multi Function Serial x 8ch (UART/CSIO/I²C/LIN Selectable)	2	-	-	○	CAN: 32Msg-buffer, Dual Timer	On-chip Debug (SWJ-DP/ETM)
		MB9BF404RA	LQFP-120											100																
		MB9BF405NA	LQFP-100 / BGA-112					384K	48K					80																
		MB9BF405RA	LQFP-120											100																
		MB9BF406NA	LQFP-100 / BGA-112					512K	64K					80																
		MB9BF406RA	LQFP-120											100																
	MB9B300B	MB9BF304NB	LQFP-100 / BGA-112	80	2.7 to 5.5	○	FLASH		256K	32K	-	8	16	○	80	-	16(3)	-	Multi-Function Timer x 2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 2	1	Multi Function Serial x 8ch (UART/CSIO/I²C/LIN Selectable)	-	1ch (USB-Host/ USB-Function Selectable)	-	○	Dual Timer	On-chip Debug (SWJ-DP/ETM)
		MB9BF304RB	LQFP-120											100																
		MB9BF305NB	LQFP-100 / BGA-112					384K	48K					80																
		MB9BF305RB	LQFP-120											100																
		MB9BF306NB	LQFP-100 / BGA-112					512K	64K					80																
		MB9BF306RB	LQFP-120											100																
	MB9B100A	MB9BF102NA	LQFP-100 / BGA-112	80	2.7 to 5.5	○	FLASH		128K	16K	-	8	16	○	80	-	16(3)	-	Multi-Function Timer x 2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 2	1	Multi Function Serial x 8ch (UART/CSIO/I²C/LIN Selectable)	-	-	-	○	Dual Timer	On-chip Debug (SWJ-DP/ETM)
		MB9BF102RA	LQFP-120											100																
		MB9BF104NA	LQFP-100 / BGA-112					256K	32K					80																
		MB9BF104RA	LQFP-120											100																
		MB9BF105NA	LQFP-100 / BGA-112					384K	48K					80																
		MB9BF105RA	LQFP-120											100																
		MB9BF106NA	LQFP-100 / BGA-112					512K	64K					80																
		MB9BF106RA	LQFP-120											100																
Basic group	MB9B520M	MB9BF521K	LQFP-48 / QFN-48	72	2.7 to 5.5	○	Dual Op. Flash (Main area + Work area)		64K +32K	16K	-	8	-	10bit x 2	14	35	14(2)	-	Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 1	1	Multi Function Serial x 4ch (UART/CSIO/I²C/LIN Selectable)	1	1ch (USB-Host/ USB-Function Selectable)	-	○	CAN: 32Msg-buffer, Dual Timer, Unique ID, Real Time Clock	On-chip Debug (SWJ-DP)
		MB9BF521L	LQFP-64 / QFN-64												19	50	23(2)				QPRC x 2		Multi Function Serial x 8ch (UART/CSIO/I²C/LIN Selectable)						
		MB9BF521M	LQFP-80 / BGA-96												23	65	26(2)												
		MB9BF522K	LQFP-48 / QFN-48						128K +32K						14	35	14(2)				QPRC x 1		Multi Function Serial x 4ch (UART/CSIO/I²C/LIN Selectable)						
		MB9BF522L	LQFP-64 / QFN-64												19	50	23(2)				QPRC x 2		Multi Function Serial x 8ch (UART/CSIO/I²C/LIN Selectable)						
		MB9BF522M	LQFP-80 / BGA-96												23	65	26(2)												
		MB9BF524K	LQFP-48 / QFN-48						256K +32K	32K					14	35	14(2)				QPRC x 1		Multi Function Serial x 4ch (UART/CSIO/I²C/LIN Selectable)						
		MB9BF524L	LQFP-64 / QFN-64												19	50	23(2)				QPRC x 2		Multi Function Serial x 8ch (UART/CSIO/I²C/LIN Selectable)						
		MB9BF524M	LQFP-80 / BGA-96												23	65	26(2)												

*: Under developing, **: Under planning

Group	Series Name	Product Name	Maximum Internal Clock Frequency [MHz]	Package [pin]	Operating Voltage: VCC [V]	Sub Clock	Memory Type	ROM [byte]	RAM [byte]	Cache [Kbyte]	DMAC [ch]	Ext. Interrupt [ch]	External Bus	Maximum I/O port [ch]	10bit AD Converter [ch/unit]	12bit AD Converter [ch(unit)]	DA Converter [bit x ch]	Timer									Serial				Communication			LCD Controller [seg x com]	Three-phase Inverter	Note	Evaluation Device
																		Output Compare [ch] / Free-Run Timer [ch] / Input Capture [ch]	Reload Timer [ch] / PWM Timer [ch] / PWC Timer [ch] / PPG Timer [ch]							Up/Down Counter [ch]	Other timers [ch]	I²C [ch]	UART/SIO [ch]	SIO [ch]	LIN/UART/SIO [ch]	CAN [ch]	USB-Host [ch]	USB-Function [ch]				
Basic group	MB9B320M	MB9BF321K	72	LQFP-48 QFN-48	2.7 to 5.5	○	Dual Op. Flash (Main area + Work area)	64K +32K	16K	-	8	14	-	35	-	14(2)	10bit x 2	Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)						QPRC x 1	1	Multi Function Serial x 4ch (UART/CSIO/I²C/LIN Selectable)				-	1ch (USB-Host/ USB-Function Selectable)		-	○	Dual Timer, Unique ID, Real Time Clock	On-chip Debug (SWJ-DP)
		MB9BF321L		LQFP-64 QFN-64								19		50		23(2)											Multi Function Serial x 8ch (UART/CSIO/I²C/LIN Selectable)										
		MB9BF321M		LQFP-80 BGA-96								23		65		26(2)																					
		MB9BF322K		LQFP-48 QFN-48				128K +32K				14		35		14(2)									QPRC x 1		Multi Function Serial x 4ch (UART/CSIO/I²C/LIN Selectable)										
		MB9BF322L		LQFP-64 QFN-64								19		50		23(2)									QPRC x 2		Multi Function Serial x 8ch (UART/CSIO/I²C/LIN Selectable)										
		MB9BF322M		LQFP-80 BGA-96								23		65		26(2)																					
		MB9BF324K		LQFP-48 QFN-48				256K +32K	32K			14		35		14(2)									QPRC x 1		Multi Function Serial x 4ch (UART/CSIO/I²C/LIN Selectable)										
		MB9BF324L		LQFP-64 QFN-64								19		50		23(2)									QPRC x 2		Multi Function Serial x 8ch (UART/CSIO/I²C/LIN Selectable)										
		MB9BF324M		LQFP-80 BGA-96								23		65		26(2)																					
	MB9B120M	MB9BF121K	72	LQFP-48 QFN-48	2.7 to 5.5	○	Dual Op. Flash (Main area + Work area)	64K +32K	16K	-	8	14	-	35	-	14(2)	10bit x 2	Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)						QPRC x 1	1	Multi Function Serial x 4ch (UART/CSIO/I²C/LIN Selectable)				-	-	-	-	○	Dual Timer, Unique ID, Real Time Clock	On-chip Debug (SWJ-DP)
		MB9BF121L		LQFP-64 QFN-64								19		50		23(2)									QPRC x 2		Multi Function Serial x 8ch (UART/CSIO/I²C/LIN Selectable)										
		MB9BF121M		LQFP-80 BGA-96								23		65		26(2)																					
		MB9BF122K		LQFP-48 QFN-48				128K +32K				14		35		14(2)									QPRC x 1		Multi Function Serial x 4ch (UART/CSIO/I²C/LIN Selectable)										
		MB9BF122L		LQFP-64 QFN-64								19		50		23(2)									QPRC x 2		Multi Function Serial x 8ch (UART/CSIO/I²C/LIN Selectable)										
		MB9BF122M		LQFP-80 BGA-96								23		65		26(2)																					
		MB9BF124K		LQFP-48 QFN-48				256K +32K	32K			14		35		14(2)									QPRC x 1		Multi Function Serial x 4ch (UART/CSIO/I²C/LIN Selectable)										
		MB9BF124L		LQFP-64 QFN-64								19		50		23(2)									QPRC x 2		Multi Function Serial x 8ch (UART/CSIO/I²C/LIN Selectable)										
		MB9BF124M		LQFP-80 BGA-96								23		65		26(2)																					
	MB9B120J	MB9BF121J	72	LQFP-32 QFN-32	2.7 to 5.5	○	FLASH	64K	8K	-	4	7	-	23	-	8(1)	-	Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 4ch/PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)						QPRC x 1	1	Multi Function Serial x 4ch (UART/CSIO/I²C/LIN Selectable)				-	-	-	-	○	Dual Timer, Real Time Clock, Unique ID	On-chip Debug (SW-DP)
	MB9B520T	MB9BF528S*	60	LQFP-144	2.7 to 5.5	○	Dual Op. Flash (Main area + Work area)	1M +64K	160K	-	8	32	○	122	-	24(2)	10bit x 2	Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)	Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)						QPRC x 1	1	Multi Function Serial x 16ch (UART/CSIO/I²C/LIN Selectable)				1	1ch (USB-Host/ USB-Function Selectable)		-	○	CAN: 32Msg-buffer, Dual Timer, HDMI-CEC/Remote Control Reception x 2, Real Time Clock, Unique ID	On-chip Debug (SWJ-DP/ETM)
		MB9BF528T*		LQFP-176 BGA-192										154											QPRC x 2											
		MB9BF529S*		LQFP-144				1.5M +64K	192K					122											QPRC x 1											
		MB9BF529T*		LQFP-176 BGA-192										154											QPRC x 2											
	MB9B420T	MB9BF428S*	60	LQFP-144	2.7 to 5.5	○	Dual Op. Flash (Main area + Work area)	1M +64K	160K	-	8	32	○	122	-	24(2)	10bit x 2	Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)	Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)						QPRC x 1	1	Multi Function Serial x 16ch (UART/CSIO/I²C/LIN Selectable)				1	-	-	-	○	CAN: 32Msg-buffer, Dual Timer, HDMI-CEC/Remote Control Reception x 2, Real Time Clock, Unique ID	On-chip Debug (SWJ-DP/ETM)
		MB9BF428T*		LQFP-176 BGA-192										154											QPRC x 2											
		MB9BF429S*		LQFP-144				1.5M +64K	192K					122											QPRC x 1											
		MB9BF429T*		LQFP-176 BGA-192										154											QPRC x 2											
	MB9B320T	MB9BF328S*	60	LQFP-144	2.7 to 5.5	○	Dual Op. Flash (Main area + Work area)	1M +64K	160K	-	8	32	○	122	-	24(2)	10bit x 2	Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)	Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)						QPRC x 1	1	Multi Function Serial x 16ch (UART/CSIO/I²C/LIN Selectable)				-	1ch (USB-Host/ USB-Function Selectable)		-	○	Dual Timer, HDMI-CEC/Remote Control Reception x 2, Real Time Clock, Unique ID	On-chip Debug (SWJ-DP/ETM)
		MB9BF328T*		LQFP-176 BGA-192										154											QPRC x 2											
		MB9BF329S*		LQFP-144				1.5M +64K	192K					122											QPRC x 1											
		MB9BF329T*		LQFP-176 BGA-192										154											QPRC x 2											
	MB9B120T	MB9BF128S*	60	LQFP-144	2.7 to 5.5	○	Dual Op. Flash (Main area + Work area)	1M +64K	160K	-	8	32	○	122	-	24(2)	10bit x 2	Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)	Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)						QPRC x 1	1	Multi Function Serial x 16ch (UART/CSIO/I²C/LIN Selectable)				-	-	-	-	○	Dual Timer, HDMI-CEC/Remote Control Reception x 2, Real Time Clock, Unique ID	On-chip Debug (SWJ-DP/ETM)
		MB9BF128T*		LQFP-176 BGA-192										154											QPRC x 2											
		MB9BF129S*		LQFP-144				1.5M +64K	192K					122											QPRC x 1											
		MB9BF129T*		LQFP-176 BGA-192										154											QPRC x 2											
	MB9A420L	MB9AF421K	40	LQFP-48 LQFP-52 QFN-48	2.7 to 5.5	○	FLASH	64K	4K	-	-	14	-	36	-	8(1)	10bit x 1	Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 3ch/PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)						-	1	Multi Function Serial x 4ch (UART/CSIO/I²C/LIN Selectable)				1	-	-	-	○	CAN: 32Msg-buffer, Dual Timer, Real Time Clock, Unique ID	On-chip Debug (SWJ-DP)
		MB9AF421L		LQFP-64 QFN-64								19		51																							

Group	Series	Part No.	Package		Voltage		Memory	Flash	RAM			ADC				(pins)	AD res.	Multi-Function Timer	Base Timer	QPRC		Multi Function Serial	USB					Other	On-chip Debug
Basic group	MB9A120L	MB9AF121K	LQFP-48 LQFP-52 QFN-48	40	2.7 to 5.5	○	FLASH	64K	4K	-	-	14	-	36	-	8(1)	10bit x 1	Multi-Function Timer x 1unit/ Output Compare 6ch/ Input Capture 3ch/PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	-	1	Multi Function Serial x 4ch (UART/CSIO/I²C/LIN Selectable)	-	-	-	-	○	Dual Timer, Real Time Clock, Unique ID	On-chip Debug (SWJ-DP)
		MB9AF121L	LQFP-64 QFN-64									19		51															
	MB9A310A	MB9AF311LA	LQFP-64 QFN-64	40	2.7 to 5.5	○	FLASH	64K	16K	-	8	8	-	51	-	9(2)	-	Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 2	1	Multi Function Serial x 8ch (UART/CSIO/I²C/LIN Selectable)	1ch (USB-Host/ USB-Function Selectable)	-	-	○	Dual Timer	On-chip Debug (SWJ-DP)
		MB9AF311MA	LQFP-80									11		66		12(3)		Multi-Function Timer x 2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)										
		MB9AF311NA	LQFP-100 QFP-100* BGA-112									16	○	83		16(3)												On-chip Debug (SWJ-DP/ETM)
		MB9AF312LA	LQFP-64 QFN-64						128K			8	-	51		9(2)		Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)										On-chip Debug (SWJ-DP)
		MB9AF312MA	LQFP-80									11		66		12(3)		Multi-Function Timer x 2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)										
		MB9AF312NA	LQFP-100 QFP-100* BGA-112									16	○	83		16(3)												On-chip Debug (SWJ-DP/ETM)
		MB9AF314LA	LQFP-64 QFN-64						256K			7	-	51		9(2)		Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)										On-chip Debug (SWJ-DP)
		MB9AF314MA	LQFP-80						32K			11		66		12(3)		Multi-Function Timer x 2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)										On-chip Debug (SWJ-DP)
		MB9AF314NA	LQFP-100 QFP-100* BGA-112									16		83		16(3)												On-chip Debug (SWJ-DP/ETM)
		MB9AF315MA	LQFP-80						384K			11		66		12(3)												On-chip Debug (SWJ-DP)
		MB9AF315NA	LQFP-100 QFP-100* BGA-112**									16	○	83		16(3)												On-chip Debug (SWJ-DP/ETM)
		MB9AF316MA	LQFP-80						512K			11		66		12(3)												On-chip Debug (SWJ-DP)
		MB9AF316NA	LQFP-100 QFP-100* BGA-112**									16		83		16(3)												On-chip Debug (SWJ-DP/ETM)
	MB9A110A	MB9AF111LA	LQFP-64 QFN-64	40	2.7 to 5.5	○	FLASH	64K	16K	-	8	8	-	51	-	9(2)	-	Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 2	1	Multi Function Serial x 8ch (UART/CSIO/I²C/LIN Selectable)	-	-	-	○	Dual Timer	On-chip Debug (SWJ-DP)
		MB9AF111MA	LQFP-80									11		66		12(3)		Multi-Function Timer x 2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)										
		MB9AF111NA	LQFP-100 QFP-100* BGA-112									16	○	83		16(3)												On-chip Debug (SWJ-DP/ETM)
		MB9AF112LA	LQFP-64 QFN-64						128K			8	-	51		9(2)		Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)										On-chip Debug (SWJ-DP)
		MB9AF112MA	LQFP-80									11		66		12(3)		Multi-Function Timer x 2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)										
		MB9AF112NA	LQFP-100 QFP-100* BGA-112									16	○	83		16(3)												On-chip Debug (SWJ-DP/ETM)
		MB9AF114LA	LQFP-64 QFN-64						256K			8	-	51		9(2)		Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)										On-chip Debug (SWJ-DP)
		MB9AF114MA	LQFP-80									11		66		12(3)		Multi-Function Timer x 2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)										
		MB9AF114NA	LQFP-100 QFP-100* BGA-112						32K			16		83		16(3)												On-chip Debug (SWJ-DP/ETM)
		MB9AF115MA	LQFP-80						384K			11		66		12(3)												On-chip Debug (SWJ-DP)
		MB9AF115NA	LQFP-100 QFP-100* BGA-112**									16	○	83		16(3)												On-chip Debug (SWJ-DP/ETM)
		MB9AF116MA	LQFP-80						512K			11		66		12(3)												On-chip Debug (SWJ-DP)
		MB9AF116NA	LQFP-100 QFP-100* BGA-112**									16		83		16(3)												On-chip Debug (SWJ-DP/ETM)

*: Under developing, **: Under planning

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Group	Series Name	Product Name	Maximum Internal Clock Frequency [MHz]	Package [pin]	Operating Voltage: VCC [V]	Sub Clock	Memory Type	ROM [byte]	RAM [byte]	Cache [Kbyte]	DMAC [ch]	Ext. Interrupt [ch]	External Bus	Maximum I/O port [ch]	10bit AD Converter [ch(unit)]	12bit AD Converter [ch(unit)]	DA Converter [bit x ch]	Timer — Output Compare [ch]	Timer — Free-Run Timer [ch]	Timer — Input Capture [ch]	Timer — Reload Timer [ch]	Timer — PWM Timer [ch]	Timer — PWC Timer [ch]	Timer — PPG Timer [ch]	Timer — Up/Down Counter [ch]	Timer — Other timers	Serial — I²C [ch]	Serial — UART/SIO [ch]	Serial — SIO [ch]	Serial — LIN/UART/SIO [ch]	Comm. — CAN [ch]	Comm. — USB-Host [ch]	Comm. — USB-Function [ch]	LCD Controller [seg x com]	Three-phase Inverter	Note	Evaluation Device
Basic group	MB9A310K	MB9AF311K	40	LQFP-48 LQFP-52 QFN-48	2.7 to 5.5	○	Main Flash +Work Flash	64K +32K	16K	-	4	6	-	36	-	8(2)	-	Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)			Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)				QPRC x 1	1	Multi Function Serial x 4ch (UART/CSIO/I²C/LIN Selectable)				-	1ch (USB-Host/ USB-Function Selectable)		-	○	Dual Timer, Real Time Clock	On-chip Debug (SWJ-DP)
		MB9AF312K						128K +32K																													
	MB9A110K	MB9AF111K	40	LQFP-48 LQFP-52 QFN-48	2.7 to 5.5	○	Main Flash +Work Flash	64K+ 32K	16K	-	4	6	-	36	-	8(2)	-	Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)			Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)				QPRC x 1	1	Multi Function Serial x 4ch (UART/CSIO/I²C/LIN Selectable)				-	-	-	-	○	Dual Timer, Real Time Clock	On-chip Debug (SWJ-DP)
		MB9AF112K						128K +32K																													
Low-power group	MB9A150R	MB9AF154M	40	LQFP-80 BGA-96	1.65 to 3.6	○	Dual Op. Flash (Main area + Work area)	256K +32K	32K	-	8	23	○	66	-	17(2)	-	Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)			Base Timer x 15ch (Reload/PPG/PWM/ PWC Selectable)				QPRC x 2	1	Multi Function Serial x 10ch (UART/CSIO/I²C Selectable)				-	-	-	○		Dual Timer, HDMI-CEC/Remote Control Reception x 2, Real Time Clock, Unique ID	On-chip Debug (SWJ-DP)
		MB9AF154N		LQFP-100 BGA-112								24		83		24(2)					Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)						Multi Function Serial x 14ch (UART/CSIO/I²C Selectable)										On-chip Debug (SWJ-DP/ETM)
		MB9AF154R		LQFP-120										103													Multi Function Serial x 16ch (UART/CSIO/I²C Selectable)										On-chip Debug (SWJ-DP/ETM)
		MB9AF155M		LQFP-80 BGA-96				384K +32K	48K			23		66		17(2)					Base Timer x 15ch (Reload/PPG/PWM/ PWC Selectable)						Multi Function Serial x 10ch (UART/CSIO/I²C Selectable)										On-chip Debug (SWJ-DP)
		MB9AF155N		LQFP-100 BGA-112								24		83		24(2)					Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)						Multi Function Serial x 14ch (UART/CSIO/I²C Selectable)										On-chip Debug (SWJ-DP/ETM)
		MB9AF155R		LQFP-120										103													Multi Function Serial x 16ch (UART/CSIO/I²C Selectable)										
		MB9AF156M		LQFP-80 BGA-96				512K +32K	64K			23		66		17(2)					Base Timer x 15ch (Reload/PPG/PWM/ PWC Selectable)						Multi Function Serial x 10ch (UART/CSIO/I²C Selectable)										On-chip Debug (SWJ-DP)
		MB9AF156N		LQFP-100 BGA-112								24		83		24(2)					Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)						Multi Function Serial x 14ch (UART/CSIO/I²C Selectable)										On-chip Debug (SWJ-DP/ETM)
		MB9AF156R		LQFP-120										103													Multi Function Serial x 16ch (UART/CSIO/I²C Selectable)										
	MB9AB40NA	MB9AFB41LA	40	LQFP-64 QFN-64	1.65 to 3.6	○	Dual Op. Flash (Main area + Work area)	64K +32K	16K	-	8	8	-	51	-	12(2)	-	-	-	-	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)				-	1	Multi Function Serial x 8ch (UART/CSIO/I²C Selectable)				-	1ch (USB-Host/ USB-Function Selectable)		20 x 8	-	Dual Timer, HDMI-CEC/Remote Control Reception x 2, Real Time Clock, Unique ID	On-chip Debug (SWJ-DP)
		MB9AFB41MA		LQFP-80 BGA-96								11		66		17(2)																		33 x 8			
		MB9AFB41NA		LQFP-100 QFP-100 BGA-112								16	○	83		24(2)																		40 x 8			
		MB9AFB42LA		LQFP-64 QFN-64				128K +32K				8	-	51		12(2)																		20 x 8			
		MB9AFB42MA		LQFP-80 BGA-96								11		66		17(2)																		33 x 8			
		MB9AFB42NA		LQFP-100 QFP-100 BGA-112								16	○	83		24(2)																		40 x 8			
		MB9AFB44LA		LQFP-64 QFN-64				256K +32K	32K			8	-	51		12(2)																		20 x 8			On-chip Debug (SWJ-DP/ETM)
		MB9AFB44MA		LQFP-80 BGA-96								11		66		17(2)																		33 x 8			
		MB9AFB44NA		LQFP-100 QFP-100 BGA-112								16	○	83		24(2)																		40 x 8			
	MB9AA40NA	MB9AFA41LA	40	LQFP-64 QFN-64	1.65 to 3.6	○	Dual Op. Flash (Main area + Work area)	64K +32K	16K	-	8	8	-	51	-	12(2)	-	-	-	-	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)				-	1	Multi Function Serial x 8ch (UART/CSIO/I²C Selectable)				-	-	-	20 x 8		Dual Timer, HDMI-CEC/Remote Control Reception x 2, Real Time Clock, Unique ID	On-chip Debug (SWJ-DP)
		MB9AFA41MA		LQFP-80 BGA-96								11		66		17(2)																		33 x 8			
		MB9AFA41NA		LQFP-100 QFP-100 BGA-112								16	○	83		24(2)																		40 x 8			
		MB9AFA42LA		LQFP-64 QFN-64				128K +32K				8	-	51		12(2)																		20 x 8			
		MB9AFA42MA		LQFP-80 BGA-96								11		66		17(2)																		33 x 8			
		MB9AFA42NA		LQFP-100 QFP-100 BGA-112								16	○	83		24(2)																		40 x 8			
		MB9AFA44LA		LQFP-64 QFN-64				256K +32K	32K			8	-	51		12(2)																		20 x 8			On-chip Debug (SWJ-DP/ETM)
		MB9AFA44MA		LQFP-80 BGA-96								11		66		17(2)																		33 x 8			
		MB9AFA44NA		LQFP-100 QFP-100 BGA-112								16	○	83		24(2)																		40 x 8			

Group	Series	Part No.	Package	MHz		Flash Type	Flash	RAM		A/D	A/D ch		D/A ch	D/A	Multi-Function Timer	Base Timer			Multi Function Serial				USB				Others	On-chip Debug
Low-power group	MB9A340NA	MB9AF341LA	LQFP-64 QFN-64							8	-	51	12(2)															On-chip Debug (SWJ-DP)
		MB9AF341MA	LQFP-80 BGA-96				64K +32K			11	○	66	17(2)																
		MB9AF341NA	LQFP-100 QFP-100 BGA-112					16K		16		83	24(2)																
		MB9AF342LA	LQFP-64 QFN-64	40	○	Dual Op. Flash (Main area + Work area)	128K +32K		-	8	-	51	12(2)	-	-	-	-	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	-	1	Multi Function Serial x 8ch (UART/CSIO/I²C Selectable)	-	-	1ch (USB-Host/ USB-Function Selectable)	-	-	Dual Timer, HDMI-CEC/Remote Control Reception x 2, Real Time Clock, Unique ID	
		MB9AF342MA	LQFP-80 BGA-96							11	○	66	17(2)																
		MB9AF342NA	LQFP-100 QFP-100 BGA-112							16		83	24(2)																
		MB9AF344LA	LQFP-64 QFN-64							8	-	51	12(2)															On-chip Debug (SWJ-DP/ETM)
		MB9AF344MA	LQFP-80 BGA-96				256K +32K	32K		11	○	66	17(2)																
		MB9AF344NA	LQFP-100 QFP-100 BGA-112							16		83	24(2)																
	MB9A140NA	MB9AF141LA	LQFP-64 QFN-64							8	-	51	12(2)															On-chip Debug (SWJ-DP)
		MB9AF141MA	LQFP-80 BGA-96				64K +32K			11	○	66	17(2)																
		MB9AF141NA	LQFP-100 QFP-100 BGA-112					16K		16		83	24(2)																
		MB9AF142LA	LQFP-64 QFN-64	40	○	Dual Op. Flash (Main area + Work area)	128K +32K		-	8	-	51	12(2)	-	-	-	-	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	-	1	Multi Function Serial x 8ch (UART/CSIO/I²C Selectable)	-	-	-	-	-	Dual Timer, HDMI-CEC/Remote Control Reception x 2, Real Time Clock, Unique ID	
		MB9AF142MA	LQFP-80 BGA-96							11	○	66	17(2)																
		MB9AF142NA	LQFP-100 QFP-100 BGA-112							16		83	24(2)																
		MB9AF144LA	LQFP-64 QFN-64							8	-	51	12(2)															On-chip Debug (SWJ-DP/ETM)
		MB9AF144MA	LQFP-80 BGA-96				256K +32K	32K		11	○	66	17(2)																
		MB9AF144NA	LQFP-100 QFP-100 BGA-112							16		83	24(2)																
Ultra low leak group	MB9AA30N	MB9AFA31L	LQFP-64 QFN-64							8		52	9(1)												24 x 4 or 20 x 8			On-chip Debug (SWJ-DP)
		MB9AFA31M	LQFP-80				64K	12K		11		67	12(1)												37 x 4 or 33 x 8			
		MB9AFA31N	LQFP-100 QFP-100 BGA-112							16		84	16(1)	10bit x 2											44 x 4 or 40 x 8			
		MB9AFA32L	LQFP-64 QFN-64	20	○	FLASH			-	8	-	52	9(1)	Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	-	-	Multi Function Serial x 8ch (UART/CSIO/I²C Selectable)	-	-	-	○	24 x 4 or 20 x 8	HDMI-CEC/Remote Control Reception x 2, Real Time Clock		
		MB9AFA32M	LQFP-80				128K	16K		11		67	12(1)												37 x 4 or 33 x 8			
		MB9AFA32N	LQFP-100 QFP-100 BGA-112							16		84	16(1)												44 x 4 or 40 x 8			
	MB9A130N	MB9AF131M	LQFP-80							11		67																On-chip Debug (SWJ-DP)
		MB9AF131N	LQFP-100 QFP-100 BGA-112				64K	12K		16		84	12(1)															
		MB9AF132M	LQFP-80	20	○	FLASH			-	11	-	67		10bit x 2	Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	-	-	Multi Function Serial x 8ch (UART/CSIO/I²C Selectable)	-	-	-	-	○	HDMI-CEC/Remote Control Reception x 2, Real Time Clock	
		MB9AF132N	LQFP-100 QFP-100 BGA-112				128K	16K		16		84	16(1)															
	MB9A130LA	MB9AF131LA	LQFP-64 QFN-64				64K			8		52	8(1)			Multi Function Serial x 8ch (UART/CSIO/I²C Selectable)										Real Time Clock	On-chip Debug (SWJ-DP)
		MB9AF131KA	LQFP-48 QFN-48							6		37	6(1)			Multi Function Serial x 4ch (UART/CSIO/I²C Selectable, CSIO/I²C up to 3ch)											
		MB9AF132LA	LQFP-64 QFN-64	20	○	FLASH		8K	-	8	-	52	8(1)	Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	-	-	Multi Function Serial x 8ch (UART/CSIO/I²C Selectable)	-	-	-	○			
		MB9AF132KA	LQFP-48 QFN-48				128K			6		37	6(1)			Multi Function Serial x 4ch (UART/CSIO/I²C Selectable, CSIO/I²C up to 3ch)											

*: Under developing, **: Under planning

FM0 ZERO+ Family • 32 bit Microcontrollers

Series Name	Product Name	Maximum Internal Clock Frequency [MHz]	Package [pin]	Operating Voltage: VCC [V]	Sub Clock	Memory Type	ROM [byte]	RAM [byte]	Cache [Kbyte]	DMAC [ch]	Ext. Interrupt [ch]	External Bus	Maximum I/O port [ch]	10bit AD Converter [ch(unit)]	12bit AD Converter [ch(unit)]	DA Converter [bit x ch]	Output Compare [ch]	Free-Run Timer [ch]	Input Capture [ch]	Reload Timer [ch]	PWM Timer [ch]	PWC Timer [ch]	PPG Timer [ch]	Up/Down Counter [ch]	Other timers [ch]	I²C [ch]	UART/SIO [ch]	SIO [ch]	LIN/UART/SIO [ch]	CAN [ch]	USB-Host [ch]	USB-Function [ch]	LCD Controller [seg x com]	Three-phase Inverter	Note	Evaluation Device
S6E1A	S6E1A11B0A	40	LQFP-32 QFN-32	2.7 to 5.5	○	Flash	56K	6K	-	2	8	-	23	5(1)	-	Multi-Function Timer x 1unit (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)				Base Timer x 4ch (Reload/PPG/PWM/ PWC Selectable)				QPRC x 1	1	Multi Function Serial x 3ch (UART/CSIO/I²C/LIN Selectable)			-	-	-	-	○	Dual Timer, Real Time Clock, Unique ID, Fast I/O	On-chip Debug (SW-DP/MTB)
	S6E1A11C0A		LQFP-48 LQFP-52 QFN-48										37	8(1)																						
	S6E1A12B0A		LQFP-32 QFN-32				88K						23	5(1)																						
	S6E1A12C0A		LQFP-48 LQFP-52 QFN-48										37	8(1)																						

FR Family • 32 bit Microcontrollers

Applications	Series Name	Product Name	Maximum Internal Clock Frequency [MHz]	Package [pin]	Operating Voltage: VCC [V]	Sub Clock	Memory Type	ROM [byte]	RAM [byte]	Cache [Kbyte]	DMAC [ch]	Ext. Interrupt [ch]	External Bus	Maximum I/O port [ch]	10bit AD Converter [ch(unit)]	12bit AD Converter [ch(unit)]	DA Converter [bit x ch]	Output Compare [ch]	Free-Run Timer [ch]	Input Capture [ch]	Reload Timer [ch]	PWM Timer [ch]	PWC Timer [ch]	PPG Timer [ch]	Up/Down Counter [ch]	Other timers [ch]	I²C [ch]	UART/SIO [ch]	SIO [ch]	LIN/UART/SIO [ch]	CAN [ch]	USB-Host [ch]	USB-Function [ch]	LCD Controller [seg x com]	Three-phase Inverter	Note	Evaluation Device
CAN/Automotive	MB91460	MB91F464A	80	LQFP-100	3.0 to 5.5	○	FLASH	416K	16K	-	10	-	73	21(1)	-	-	6						10	-		1			5	1	-	-	-	-	CAN: 32Msg-buffer, LVD, built-in CR	MB91FV460B
		MB91F465B	100	LQFP-144				544K	40K	8	16	○	108	32(1)			8						16	2		2			7	3						
		MB91F467B	96					1088K																						6						
		MB91F463C	100	LQFP-144				288K	24K	4	15	-	104	30(1)			4	8	8	8			12	3		3			5	3					CAN: 32Msg-buffer, Sound generator, SMC x 6ch, LVD, built-in CR	
		MB91F465C						544K	32K																										
		MB91F467C						1088K	64K																										
		MB91F465D		LQFP-208				544K	48K	8	14		170	24(1)											3										
		MB91F467D	96					1088K	64K																										
		MB91F467E							128K			○														2									
		MB91F469G	100	BGA-320				2112K	96K	16	16		205	32(1)			8							4	4			8	6					CAN: 128Msg-buffer, Sound generator, LVD, built-in CR	
		MB91F464H	100	LQFP-144				416K	40K	8			108	32(1)									16	2		2			7	1					CAN: 32Msg-buffer, LVD, built-in CR	
		MB91F466H						832K																											
		MB91F465K	80	LQFP-120				544K	16K	4	5	10	-	92	26(1)									12	-		1			5							
		MB91F467M		LQFP-216				1088K	64K	8		16	○	175	12(1)			4	4	4	5			8			8			9	2					MediaLB x 1ch, CAN: 32Msg-buffer+64Msg-buffer, I²S: 10ch, LVD, built-in CR	
		MB91F463N		LQFP-64	3.0 to 3.6 / 4.5 to 5.5			288K	10K	4		10	-	48	8(1)									8	2		2			4						CAN: 32Msg-buffer, LVD, built-in CR	
		MB91F465P	100	LQFP-176	3.0 to 5.5			544K	40K	8		16		141	32(1)			8						32			4			12	3					CAN: 32Msg-buffer, Sound generator, LVD, built-in CR	
		MB91F467P						1088K+64K	80K						32(1) 9(1)				8	8	16				4						4					
		MB91F469Q		BGA-320				2112K	96K	16		32	○	205	32(1) 8(1)				9	10	8			16							3					
		MB91F467R	80	LQFP-176	3.0 to 3.6 / 4.5 to 5.5			1088K	64K	8		16		138	16(1)			4	4	4	5			8	-		3			7						CAN: 32/64Msg-buffer	
		MB91F467S												133											16	4			6	2					APIX, CAN: 32Msg-buffer, Sound generator, LVD, built-in CR	
		MB91F467T	100	LQFP-144	3.0 to 5.5							12		109				8	8	8	8			14	2		4			11						CAN: 32Msg-buffer, Sound generator, LVD, built-in CR	
		MB91F465X		LQFP-100				544K	32K	8		11	-	73	17(1)			6						12	-		1			3						FlexRay, CAN: 32Msg-buffer, LVD, built-in CR	

MB91520 series

Part No.	Package			Flash		CPU clock	Pin	External bus	I/O	DMA	A/D	U-T	Timer	Serial	CAN	FlexRay	Features	Debug

MB91520

MB91F522B	LQFP-64	320K+64K	56K				44	13(1) 13(1)	8bit x1	16bit x6 32bit x4	16bit x3 32bit x1	16bit x4 32bit x5	Reload Timer x 7ch + PPG Timer x 21ch (Reload/PPG/PWM/PWC Selectable)	Multi Function Serial x 8ch (LIN/UART/SIO/I²C Selectable)			
MB91F523B		448K+64K															
MB91F524B		576K+64K	72K														
MB91F525B		832K+64K	104K														
MB91F526B		1088K+64K	136K														
MB91F522D	LQFP-80	320K+64K	56K				56	16(1) 16(1)			16bit x3 32bit x2		Reload Timer x 7ch + PPG Timer x 27ch + Base Timer x 1ch (Reload/PPG/PWM/PWC Selectable)	Multi Function Serial x 9ch (LIN/UART/SIO/I²C Selectable)			
MB91F523D		448K+64K															
MB91F524D		576K+64K	72K														
MB91F525D		832K+64K	104K														
MB91F526D		1088K+64K	136K														
MB91F522F	LQFP-100	320K+64K	56K				76	16(1) 21(1)					Reload Timer x 8ch + PPG Timer x 34ch + Base Timer x 1ch (Reload/PPG/PWM/PWC Selectable)		3		
MB91F523F		448K+64K															
MB91F524F		576K+64K	72K														
MB91F525F		832K+64K	104K														
MB91F526F		1088K+64K	136K														
MB91F522J	LQFP-120	320K+64K	56K		80	2.7 to 5.5	96	16(1) 26(1)					Reload Timer x 8ch + PPG Timer x 38ch + Base Timer x 2ch (Reload/PPG/PWM/PWC Selectable)		2		LIN, FPU, MPU, Tuning RAM
MB91F523J		448K+64K															
MB91F524J		576K+64K	72K	16													
MB91F525J		832K+64K	104K														
MB91F526J		1088K+64K	136K														
MB91F522K	LQFP-144	320K+64K	56K			Main Flash +Work Flash	120	16(1) 32(1)		16bit x6 32bit x6	16bit x3	16bit x4 32bit x6	Reload Timer x 8ch + PPG Timer x 44ch + Base Timer x 2ch (Reload/PPG/PWM/PWC Selectable)	Multi Function Serial x 12ch (LIN/UART/SIO/I²C Selectable)			
MB91F523K		448K+64K															
MB91F524K		576K+64K	72K														
MB91F525K		832K+64K	104K														
MB91F526K		1088K+64K	136K														
MB91F527R	LQFP-144 TEQFP-144	1600K+64K	192+16K				115		8bit x2						6		
MB91F528R		2112K+64K	320K;16K														
MB91F522L	LQFP-176	320K+64K	56K				152	16(1) 32(1)					Reload Timer x 8ch + PPG Timer x 48ch + Base Timer x 2ch (Reload/PPG/PWM/PWC Selectable)		3		
MB91F523L		448K+64K															
MB91F524L		576K+64K	72K														
MB91F525L		832K+64K	104K														
MB91F526L		1088K+64K	136K														
MB91F527U	LQFP-176 TEQFP-176	1600K+64K	192+16K				147								6		
MB91F528U		2112K+64K	320K;16K														
MB91F527M	LQFP-208 TEQFP-208	1600K+64K	192+16K				177	32(1) 32(1)		16bit x6 32bit x8	16bit x3 32bit x8	16bit x4 32bit x8	Reload Timer x 8ch + PPG Timer x 64ch + Base Timer x 2ch (Reload/PPG/PWM/PWC Selectable)	Multi Function Serial x 20ch (LIN/UART/SIO/I²C Selectable)	6		
MB91F528M		2112K+64K	320K;16K	24	128										4		
MB91F527Y	BGA-416	1600K+64K	192+16K				219						Reload Timer x 8ch + PPG Timer x 88ch + Base Timer x 2ch (Reload/PPG/PWM/PWC Selectable)		6		
MB91F528Y		2112K+64K	320K;16K														

MB91520B/D/F/J/K/L series: CAN: 64Msg-buffer x 2ch, 128Msg-buffer x 1ch,

MB91520R/U/M/Y series: CAN: 128Msg-buffer x 6ch, FlexRay : 1 unit

On-chip Debug

Details of part number suffix

Dual clock system				
	xWB	xJB	xYB	xLB
CSV initial value	ON	OFF	ON	OFF
LVD initial value	ON	ON	OFF	OFF

Single clock system				
	xSB	xHB	xUB	xKB
CSV initial value	ON	OFF	ON	OFF
LVD initial value	ON	ON	OFF	OFF

* See "part number suffix" in Note

MB91570 series

Part No.	Package		Flash		Pin	Features	Debug

MB91570

MB91F575B	LQFP-144	576K+64K	48K	109	Reload Timer x 7ch (3ch for Periodic Timer Interrupt Occurrence) + PPG Timer x 24ch + Base Timer x 2ch (Reload/PPG/PWM/PWC Selectable) — 40(1), 8bit x2, 12, 6, 12, 2, Multi Function Serial x 4ch (LIN/UART/SIO/I²C Selectable. However, I²C only supports ch0/ch1), 6, 3, 32 x 4	On-chip Debug
MB91F575BS	○			111	CAN: 32/64Msg-buffer, LIN, Sound generator, SMC x 6ch. From among the RAM, 8KB can be used as BackUpRAM. For models with H suffix on part number, the initial status of the clock supervisor is off	
MB91F575BH	○			109		
MB91F575BHS	-			111		
MB91F577B	○	1088K+64K	72K	109		
MB91F577BS	-			111		
MB91F577BH	○			109		
MB91F577BHS	-			111		
MB91F578C	○	1600K+64K	112K	109		
MB91F578CS	-			111		
MB91F578CH	○			109		
MB91F578CHS	-			111		
MB91F579C	○	2112K+64K	144K	109		
MB91F579CS	-			111		
MB91F579CH	○			109		
MB91F579CHS	-			111		
MB91F578CM	LQFP-208	1600K+64K	112K	157	CAN: 32/64Msg-buffer, LIN, Sound generator, SMC x 6ch. From among the RAM, 16KB can be used as BackUpRAM. For models with H suffix on part number, the initial status of the clock supervisor is off	
MB91F578CSM	-			159		
MB91F578CHM	○			157		
MB91F578CHSM	-			159		
MB91F579CM	○	2112K+64K	144K	157		
MB91F579CSM	-			159		
MB91F579CHM	○			157		
MB91F579CHSM	-			159		

(MB91570 common specs: CPU clock 80, Voltage 4.5 to 5.5, Main Flash +Work Flash, 16, 16, ○)

*: Under developing, **: Under planning

Applications	Series Name	Product Name	Max Internal Clock Freq [MHz]	Package [pin]	Operating Voltage: VCC [V]	Sub Clock	Memory Type	ROM [byte]	RAM [byte]	Cache [Kbyte]	DMAC [ch]	Ext. Interrupt [ch]	External Bus	Maximum I/O port [ch]	10bit AD Converter [ch(unit)]	12bit AD Converter [ch(unit)]	DA Converter [bit x ch]	Output Compare [ch]	Free-Run Timer [ch]	Input Capture [ch]	Timer (Reload/PWM/PWC/PPG)	Up/Down Counter [ch]	Other timers	I²C [ch]	Serial (UART/SIO/SIO/LIN)	CAN [ch]	USB-Host [ch]	USB-Function [ch]	LCD Controller [seg x com]	Three-phase Inverter	Note	Evaluation Device
CAN/Automotive	MB91580	MB91F583SG* / MB91F583SH* / MB91F583SJ* / MB91F583SK*		LQFP-64	4.5 to 5.5	-	Main Flash +Work Flash	320K +64K	32K	-	8	8	-	44		6(3)	10bit x1	7		4	Reload Timer x 4ch + PPG Timer x 6ch + Base Timer x 2ch (Reload/PPG/PWM/PWC Selectable)		-		Multi Function Serial x 4ch (LIN/UART/SIO/I²C Selectable)	1	-	-	-	○	CAN: 64Msg-buffer, LIN, FPU, MPU, with no built-in RDC, Models with H or K suffix on part number have no built-in FlexRay. Models with J or K suffix on part number stop the built-in CR oscillator while in standby mode. From among the RAM, 8KB can be used as BackUpRAM	On-chip Debug
		MB91F584SG* / MB91F584SH* / MB91F584SJ* / MB91F584SK*		LQFP-64		-		448K +64K	48K																							
		MB91F585SG* / MB91F585SH* / MB91F585SJ* / MB91F585SK*		LQFP-64		-		576K +64K	48K																							
		MB91F583MG* / MB91F583MH* / MB91F583MJ* / MB91F583MK*	128	LQFP-100		-		320K +64K	32K					76					6			2				2						
		MB91F584MG* / MB91F584MH* / MB91F584MJ* / MB91F584MK*		LQFP-100		-		448K +64K	48K																							
		MB91F585MG* / MB91F585MH* / MB91F585MJ* / MB91F585MK*		LQFP-100		-		576K +64K	48K																							
		MB91F585LA		LQFP-144				576K +64K	64K				-	98	8(3)	-		12		8	Reload Timer x 4ch + PPG Timer x 24ch + Base Timer x 2ch (Reload/PPG/PWM/PWC Selectable)				Multi Function Serial x 5ch (LIN/UART/SIO/I²C Selectable)	3					CAN: 64Msg-buffer, LIN, FPU, MPU, FlexRay, Models with B or D suffix on part number have no built-in RDC. Models with C or D suffix on part number stop the built-in CR oscillator while in standby mode. From among the RAM, 8KB can be used as BackUpRAM	
		MB91F585LB		LQFP-144				576K +64K	64K				○	111		10bit x1																
		MB91F585LC		LQFP-144				576K +64K	64K				-	98		-																
		MB91F585LD		LQFP-144				576K +64K	64K				○	111		10bit x1																
		MB91F586LA		LQFP-144				832K +64K	64K				-	98		-																
		MB91F586LB		LQFP-144				832K +64K	64K				○	111		10bit x1																
		MB91F586LC		LQFP-144				832K +64K	64K				-	98		-																
		MB91F586LD		LQFP-144				832K +64K	64K				○	111		10bit x1																
		MB91F587LA		LQFP-144				1088K +64K	128K				-	98		-																
		MB91F587LB		LQFP-144				1088K +64K	128K				○	111		10bit x1																
		MB91F587LC		LQFP-144				1088K +64K	128K				-	98		-																
		MB91F587LD		LQFP-144				1088K +64K	128K				○	111		10bit x1																
	MB91590	MB91F591B	80	LQFP-208	3.0 to 3.6 / 4.5 to 5.5 (2 power supplies)	○	Main Flash +Work Flash	576K +64K	48K	-	16	16	Dedicated for GDC External Memory	61	32(1)	-	-	4	2	6	Reload Timer x 4ch + PPG Timer x 24ch + Base Timer x 2ch (Reload/PPG/PWM/PWC Selectable)			-	Multi Function Serial x 2ch (LIN/UART/SIO/I²C Selectable)	6	3	-	-	-	CAN: 32/64Msg-buffer, LIN, FPU, MPU, Sound generator, SMC x 6ch, From among the RAM, 8KB can be used as BackUpRAM, Built-in 2D GDC. For models with H suffix on part number, the initial status of the clock supervisor is off	On-chip Debug
		MB91F591BS		LQFP-208		-		576K +64K	48K					63																		
		MB91F591BH		LQFP-208		○		576K +64K	48K					61																		
		MB91F591BHS		LQFP-208		-		576K +64K	48K					63																		
		MB91F592B		LQFP-208		○		576K +64K	48K					61																		
		MB91F592BS		LQFP-208		-		576K +64K	48K					63																		
		MB91F592BH		LQFP-208		○		576K +64K	48K					61																		
		MB91F592BHS		LQFP-208		-		576K +64K	48K					63																		
		MB91F594B		LQFP-208		○		1088K +64K	72K					61																		
		MB91F594BS		LQFP-208		-		1088K +64K	72K					63																		
		MB91F594BH		LQFP-208		○		1088K +64K	72K					61																		
		MB91F594BHS		LQFP-208		-		1088K +64K	72K					63																		
		MB91F59AC	128	BGA-320		○		1600K +64K	264K					61					4	8	12	Reload Timer x 8ch + PPG Timer x 24ch + Base Timer x 2ch (Reload/PPG/PWM/PWC Selectable)			3	Multi Function Serial x 6ch (LIN/UART/SIO/I²C Selectable. However, I²C only supports ch0/ch1)							
		MB91F59ACS		BGA-320		-		1600K +64K	264K					63																		
		MB91F59ACH		BGA-320		○		1600K +64K	264K					61																		
		MB91F59ACHS		BGA-320		-		1600K +64K	264K					63																		
		MB91F59BC		BGA-320		○		2112K +64K	264K					61																		
		MB91F59BCS		BGA-320		-		2112K +64K	264K					63																		
		MB91F59BCH		BGA-320		○		2112K +64K	264K					61																		
		MB91F59BCHS		BGA-320		-		2112K +64K	264K					63																		

*: Under developing, **: Under planning

F²MC-16FX/F²MC-16LX • *16* bit Microcontrollers

Applications	Series Name	Product Name	Maximum Internal Clock Frequency [MHz]	Package [pin]	Operating Voltage: VCC [V]	Sub Clock	Memory Type	ROM [byte]	RAM [byte]	Cache [Kbyte]	DMAC [ch]	Ext. Interrupt [ch]	External Bus	Maximum I/O port [ch]	10bit AD Converter [ch(unit)]	12bit AD Converter [ch(unit)]	DA Converter [bit x ch]	Output Compare [ch]	Free-Run Timer [ch]	Input Capture [ch]	Reload Timer [ch]	PWM Timer [ch]	PWC Timer [ch]	PPG Timer [ch]	Up/Down Counter [ch]	Other timers	I²C [ch]	UART/SIO [ch]	SIO [ch]	LIN/UART/SIO [ch]	CAN [ch]	USB-Host [ch]	USB-Function [ch]	LCD Controller [seg x com]	Three-phase Inverter	Note	Evaluation Device
	MB96310	MB96F313AS	56	LQFP-48	3.0 to 5.5	-	FLASH	96K	8K	-	4	11	-	36	12(1)	-	-	2	4	4 +3 (Dedicated for LIN)	4 +1 (Dedicated for PPG)	-	-	14	-	-	-	-	-	3	-	-	-	-	-	LVD, built-in CR Option without CAN	MB96V300C
		MB96F313AW				○								34																	-							
		MB96F313RS				○								36																	1							
		MB96F313RW				○								34																	-							
		MB96F315AS				-		160K						36																								
		MB96F315AW				○								34																		-							
		MB96F315RS				-								36																		1							
		MB96F315RW				○								34																									
Automotive	MB96320	MB96F326AS	56	LQFP-80	3.0 to 5.5	-	FLASH	288K	12K	-	4	15	○	66	18(1)	-	-	6	4	12	4 +1 (Dedicated for PPG)	-	-	20	-	-	1	-	-	4	-	-	-	-	-	LVD, built-in CR Option without CAN	MB96V300C
		MB96F326AW				○								64																		2							
		MB96F326RS				-								66																									
		MB96F326RW				○								64																									
	MB96330	MB96F336US	48	LQFP-144	3.0 to 5.5	-	FLASH	288K	24K	-	10	16	○	124	36(1)	-	-	12	4	10	4 +1 (Dedicated for PPG)	-	-	20	-	-	2	-	-	8	1	1ch (USB-Host/ USB-Function Selectable)		-	-	LVD, built-in CR	MB96V300C
		MB96F336UW				○								122																									
		MB96F338RS				-		544K	32K					124	40(1)																								
		MB96F338RW				○								122																									
		MB96F338US				-								120	36(1)																	3	1ch (USB-Host/ USB-Function Selectable)					
		MB96F338UW				○								118																									
Automotive	MB96340	MB96F345RS	56	LQFP-100 QFP-100	3.0 to 5.5	-	MASK	160K	8K	-	6	16	○	82	24(1)	-	-	8	2	8	4 +1 (Dedicated for PPG)	-	16	-	-	-	2	-	-	7	2	-	-	-	-	Option without CAN	MB96V300C
		MB96F345RW	56			○	MASK							80																								
		MB96F346RS				-		288K	16K					82																									
		MB96F346RW				-								80																									
		MB96F345DS	40			-	FLASH	160K +64K	8K					82																		1							
		MB96F345DW				○								80																									
		MB96F346AS				-		288K						82																		-							
		MB96F346AW				○								80																									
		MB96F346RS				-								82																		2							
		MB96F346RW				○								80																									
		MB96F347AS	56			-		416K	16K					82																		-							
		MB96F347AW				○								80																									
		MB96F347RS				-								82																		2							
		MB96F347RW				○								80																									
		MB96F348AS				-		544K	24K					82																		-							
		MB96F348AW				○								80																									
		MB96F348RS				-								82																		2							
		MB96F348RW				○								80																									
		MB96F348HS				-		544K +32K						82															4										
		MB96F348HW				○								80																									
Automotive	MB96350	MB96F353AS	56	LQFP-64	3.0 to 5.5	-	FLASH	96K	8K	-	4	13	○	51	15(1)	-	-	4	4	6 +3 (Dedicated for LIN)	4 +1 (Dedicated for PPG)	-	-	20	-	-	1	-	-	4	1	-	-	-	-	Option without CAN	MB96V300C
		MB96F353AW				○								49																									
		MB96F353RS				-								51																									
		MB96F353RW				○								49																									
		MB96F355AS				-		160K						51																									
		MB96F355AW				○								49																									
		MB96F355RS				-								51																									
		MB96F355RW				○								49																									
		MB96F356AS				-		288K	12K					51																		2							
		MB96F356AW				○								49																									
		MB96F356RS				-								51																									
		MB96F356RW				○								49																									
	MB96370	MB96F378HS	40	LQFP-144	3.0 to 5.5	-	FLASH	544K +32K	28K	-	7	8	○	120	22(1)	-	-	6	2	8	4 +1 (Dedicated for PPG)	-	-	12	-	-	2	-	-	6	2	-	-	72 x 4	-	SMC x 6ch Sound generator x 2ch	MB96V300C
		MB96F378HW				○								118																									
		MB96F379RS				-		832K	32K					120																									
		MB96F379RW				○								118																									

*: Under developing, **: Under planning, **Bold letters: F²MC-16FX**, Black letters: F²MC-16LX

Applications	Series Name	Product Name	Max Internal Clock Freq [MHz]	Package [pin]	Operating Voltage: VCC [V]	Sub Clock	Memory Type	ROM [byte]	RAM [byte]	Cache [Kbyte]	DMAC [ch]	Ext. Interrupt [ch]	External Bus	Maximum I/O port [ch]	10bit AD Converter [ch(unit)]	12bit AD Converter [ch(unit)]	DA Converter [bit x ch]	Output Compare [ch]	Free-Run Timer [ch]	Input Capture [ch]	Reload Timer [ch]	PWM Timer [ch]	PWC Timer [ch]	PPG Timer [ch]	Up/Down Counter [ch]	Other timers [ch]	I²C [ch]	UART/SIO [ch]	SIO [ch]	LIN/UART/SIO [ch]	CAN [ch]	USB-Host [ch]	USB-Function [ch]	LCD Controller [seg x com]	Three-phase Inverter	Note	Evaluation Device
Automotive	MB96380	MB96384RS	56	LQFP-120	3.0 to 5.5	-	MASK	128K	6K	-	7	8	○	96	16(1)	-	-	4	2	8	4+1 (Dedicated for PPG)	5	-	8	-	-	1	-	-	5	1	-	-	65 x 4	-	SMC x 5ch Sound generator x 2ch	MB96V300C
		MB96384RW	56			○	MASK	128K	6K					94																								
		MB96385RS	56			-	MASK	160K	8K					96																								
		MB96385RW	56			○	MASK	160K	8K					94																								
		MB96F385RS	40			-	FLASH	160K	6K					96																								
		MB96F385RW	40			○	FLASH	160K	6K					94																								
		MB96F386RS	56			○	FLASH	288K	16K					96																								
		MB96F386RW	56			○	FLASH	288K	16K					94																								
		MB96F387RS	56			-	FLASH	416K	16K					96																		2						
		MB96F387RW	56			○	FLASH	416K	16K					94																								
		MB96F388HS	40			-	FLASH	544K+32K	28K					96																								
		MB96F388HW	40			○	FLASH	544K+32K	28K					94																								
		MB96F389RS	40			-	FLASH	544K+288K	32K					96																								
		MB96F389RW	40			○	FLASH	544K+288K	32K					94																								
	MB96390	MB96393RS	40	LQFP-100	3.0 to 5.5	-	MASK	96K	5K	-	-	8	-	76	11(1)	-	-	4	2	4	4+1 (Dedicated for PPG)	4	-	4	-	-	1	-	-	3	1	-	-	49 x 4	-	SMC x 4ch Sound generator x 1ch	MB96V300C
		MB96393RW	40			○	MASK	96K	5K					74																								
		MB96395RS	40			-	MASK	160K	8K					76																								
		MB96395RW	40			○	MASK	160K	8K					74																								
		MB96F395RS	40			-	FLASH	160K	8K					76																								
		MB96F395RW	40			○	FLASH	160K	8K					74																								
	MB96610	MB96F612A	32	LQFP-48	2.7 to 5.5	○	Dual Op. Flash	32.5K+32K	4K	-	2	11	-	37(Single clock) 35(Dual clock)	16(1)	-	-	5	4	4+3 (Dedicated for LIN)	2+1 (Dedicated for PPG)	-	-	8bit x 16 16bit x 8	-	QPRC x 2	-	-	-	3	-	-	-	-	-	Option without CAN	On-chip Debug
		MB96F612R						32.5K+32K	4K																						1						
		MB96F613A						64.5K+32K	10K																						-						
		MB96F613R						64.5K+32K	10K																						1						
		MB96F615A						128.5K+32K	10K																						-						
		MB96F615R						128.5K+32K	10K																						1						
	MB96620	MB96F622A	32	LQFP-64	2.7 to 5.5	○	Dual Op. Flash	32.5K+32K	4K	-	2	13	-	52(Single clock) 50(Dual clock)	21(1)	-	-	6	4	6+2 (Dedicated for LIN)	2+1 (Dedicated for PPG)	-	-	8bit x 16 16bit x 8	-	QPRC x 2	1	-	-	3	-	-	-	-	-	Option without CAN	On-chip Debug
		MB96F622R						32.5K+32K	4K																						1						
		MB96F623A						64.5K+32K	10K																						-						
		MB96F623R						64.5K+32K	10K																						1						
		MB96F625A						128.5K+32K	10K																						-						
		MB96F625R						128.5K+32K	10K																						1						
	MB96630	MB96F633A	32	LQFP-80	2.7 to 5.5	○	Dual Op. Flash	64.5K+32K	10K	-	4	15	-	64(Single clock) 66(Dual clock)	21(1)	-	-	7	3	6+1 (Dedicated for LIN)	3	-	-	8bit x 20 16bit x 15	-	QPRC x 2	2	-	-	5	-	-	-	-	-	Option without CAN	On-chip Debug
		MB96F633R						64.5K+32K	10K																						1						
		MB96F635A						128.5K+32K	16K																						-						
		MB96F635R						128.5K+32K	16K																						1						
		MB96F636R						256.5K+32K	24K																						-						
		MB96F637R						384.5K+32K	28K																						1						
	MB96640	MB96F643A	32	LQFP-100	2.7 to 5.5	○	Dual Op. Flash	64.5K+32K	10K	-	4	16	-	81(Single clock) 79(Dual clock)	24(1)	-	-	7	3	6+1 (Dedicated for LIN)	5	-	-	8bit x 24 16bit x 16	-	QPRC x 2	2	-	-	6	-	-	-	-	-	Option without CAN	On-chip Debug
		MB96F643R						64.5K+32K	10K																						1						
		MB96F645A						128.5K+32K	16K																						-						
		MB96F645R						128.5K+32K	16K																						1						
		MB96F646R						256.5K+32K	24K																						-						
		MB96F647R						384.5K+32K	28K																						1						
	MB96650	MB96F653A	32	LQFP-120	2.7 to 5.5	○	Dual Op. Flash	64.5K+32K	10K	-	4	16	-	101(Single clock) 99(Dual clock)	29(1)	-	-	7	3	6+1 (Dedicated for LIN)	5	-	-	8bit x 32 16bit x 16	-	QPRC x 2	2	-	-	6	-	-	-	-	-	Option without CAN	On-chip Debug
		MB96F653R						64.5K+32K	10K																						1						
		MB96F655A						128.5K+32K	16K																						-						
		MB96F655R						128.5K+32K	16K																						1						
		MB96F656R						256.5K+32K	24K																						-						
		MB96F657R						384.5K+32K	28K																						1						
	MB96670	MB96F673A	32	LQFP-64	2.7 to 5.5	○	Dual Op. Flash	64.5K+32K	4K	-	2	7	-	50(Single clock) 48(Dual clock)	12(1)	-	-	-	2	4	3	-	-	8bit x 8 16bit x 4	-	-	1	-	-	2	-	-	-	24 x 4	-	SMC x 2ch Sound generator Option without CAN	On-chip Debug
		MB96F673R						64.5K+32K	4K																						1						
		MB96F675A						128.5K+32K	4K																						-						
		MB96F675R						128.5K+32K	4K																						1						

Product selection table (F²MC-16FX / F²MC-16LX)

Series	Product	Bit	Package	Voltage		Memory type	Flash	RAM		UART	CSIO		Ext. bus	Timer (A/D)				PPG	16-bit timer	I/O timer			I/O		Watch	WDT		Clock			Real time			LCD		Peripheral	Debug
MB96680	**MB96F683A** **MB96F683R** **MB96F685A** **MB96F685R**	32	LQFP-80	2.7 to 5.5	○	Dual Op. Flash	64.5K+32K / 128.5K+32K	4K	-	2	7	-	65(Single clock) 63(Dual clock)	14(1)	-	-	-	2	4	3	-	-	8bit x 8 16bit x 4	-	-	1	-	-	2	- 1 - 1	-	-	32 x 4	-	SMC x 2ch Sound generator Option without CAN	On-chip Debug
MB96690	**MB96F693A** **MB96F693R** **MB96F695A** **MB96F695R** **MB96F696R**	32	LQFP-100	2.7 to 5.5	○	Dual Op. Flash	64.5K+32K / 128.5K+32K / 256.5K+32K	8K / 16K	-	4	16	-	79(Single clock) 77(Dual clock)	27(1)	-	-	4	2	6	5	-	-	8bit x 14 16bit x 10	-	-	1	-	-	5	- 1 - 1	-	-	36 x 4	-	SMC x 4ch Sound generator x 2ch Option without CAN	On-chip Debug
MB966A0	**MB96F6A5A** **MB96F6A5R** **MB96F6A6R**	32	LQFP-120	2.7 to 5.5	○	Dual Op. Flash	128.5K+32K / 256.5K+32K	8K / 16K	-	4	16	-	97(Single clock) 95(Dual clock)	32(1)	-	-	4	2	8	5	-	-	8bit x 24 16bit x 12	-	-	1	-	-	5	- 1	-	-	44 x 4	-	SMC x 5ch Sound generator x 2ch Option without CAN	On-chip Debug
MB966B0	**MB96F6B5A** **MB96F6B5R** **MB96F6B6R**	32	LQFP-100	2.7 to 5.5	○	Dual Op. Flash	128.5K+32K / 256.5K+32K	8K / 16K	-	4	16	-	79(Single clock) 77(Dual clock)	27(1)	-	-	4	2	6	5	-	-	8bit x 16 16bit x 12	QPRC x 2	-	1	-	-	5	- 1	-	-	36 x 4	-	Sound generator x 2ch Option without CAN	On-chip Debug
MB966C0	**MB96F6C5A** **MB96F6C5R** **MB96F6C6R**	32	LQFP-120	2.7 to 5.5	○	Dual Op. Flash	128.5K+32K / 256.5K+32K	8K / 16K	-	4	16	-	99(Single clock) 97(Dual clock)	32(1)	-	-	4	2	8	5	-	-	8bit x 24 16bit x 12	QPRC x 2	-	1	-	-	5	- 1	-	-	44 x 4	-	Sound generator x 2ch Option without CAN	On-chip Debug

Automotive

Series	Product	Bit	Package	Voltage	MASK/FLASH		Flash	RAM					Pins	ADC														Peripheral	Eval chip
MB90340E	MB90341CE	24	LQFP-100 QFP-100	4.0 to 5.5	○	MASK	128K	16K	-	16	16	○	80	24(1)	-	-	8	2	8	4	-	-	16	-	-	2	-	-	4	LIN	MB90V340E-102
	MB90341CES				-								82																		MB90V340E-101
	MB90341E				○								80	16(1)												-					MB90V340E-102
	MB90341ES				-			16K					82															2			MB90V340E-101
	MB90342CE				○		256K						80	24(1)												2					MB90V340E-102
	MB90342CES				-								82																		MB90V340E-101
	MB90342E				○								80	16(1)												-					MB90V340E-102
	MB90346CE				○		64K	2K					80	24(1)												2					MB90V340E-102
	MB90346CES				-								82																		MB90V340E-101
	MB90346E				○								80	16(1)												-					MB90V340E-102
	MB90346ES				-								82																		MB90V340E-101
	MB90347CE				○		128K	6K					80	24(1)												2					MB90V340E-102
	MB90347CES				-								82															1			MB90V340E-101
	MB90347E				○								80	16(1)												-					MB90V340E-102
	MB90348CE				○		128K						80	24(1)												2					MB90V340E-102
	MB90348CES				-								82																		MB90V340E-101
	MB90348E				○								80	16(1)												-					MB90V340E-102
	MB90348ES				-								82																		MB90V340E-101
	MB90349CE				○		256K	16K					80	24(1)												2					MB90V340E-102
	MB90349CES				-								82																		MB90V340E-101
	MB90349E				○								80	16(1)												-					MB90V340E-102
	MB90F342CE				○	FLASH	256K						80	24(1)												2					MB90V340E-102
	MB90F342CES				-								82																		MB90V340E-101
	MB90F342E				○								80	16(1)												-					MB90V340E-102
	MB90F342ES				-								82															2			MB90V340E-101
	MB90F345CE				○		512K	20K					80	24(1)												2					MB90V340E-102
	MB90F345CES				-								82																		MB90V340E-101
	MB90F345E				○								80	16(1)												-					MB90V340E-102
	MB90F345ES				-								82																		MB90V340E-101
	MB90F346CE				○		64K	2K					80	24(1)												2					MB90V340E-102
	MB90F346CES				-								82																		MB90V340E-101
	MB90F346E				○								80	16(1)												-					MB90V340E-102
	MB90F346ES				-								82																		MB90V340E-101
	MB90F347CE				○		128K	6K					80	24(1)												2					MB90V340E-102
	MB90F347CES				-								82															1			MB90V340E-101
	MB90F347E				○								80	16(1)												-					MB90V340E-102
	MB90F347ES				-								82																		MB90V340E-101
	MB90F349CE				○		256K	16K					80	24(1)												2					MB90V340E-102
	MB90F349CES				-								82																		MB90V340E-101
	MB90F349E				○								80	16(1)												-					MB90V340E-102
	MB90F349ES				-								82																		MB90V340E-101

*: Under developing, **: Under planning, **Bold letters: F²MC-16FX**, Black letters: F²MC-16LX

F²MC-16FX/F²MC-16LX • *16* bit Microcontrollers

Applications	Series Name	Product Name	Max Internal Clock Freq [MHz]	Package [pin]	Operating Voltage VCC [V]	Sub Clock	Memory Type	ROM [byte]	RAM [byte]	Cache [Kbyte]	DMAC [ch]	Ext. Interrupt [ch]	External Bus	Max I/O port [ch]	10bit AD Conv [ch(unit)]	12bit AD Conv [ch(unit)]	DA Conv [bit x ch]	Output Compare [ch]	Free-Run Timer [ch]	Input Capture [ch]	Reload Timer [ch]	PWM Timer [ch]	PWC Timer [ch]	PPG Timer [ch]	Up/Down Counter [ch]	Other timers	I²C [ch]	UART/SIO [ch]	SIO [ch]	LIN/UART/SIO [ch]	CAN [ch]	USB-Host [ch]	USB-Function [ch]	LCD Controller [seg x com]	Three-phase Inverter	Note	Evaluation Device
Automotive	MB90350E	MB90351E				○	MASK	64K							49																						LIN	MB90V340E-102
		MB90351TE				○								49																							MB90V340E-102
		MB90351TES				-								51																						LIN, Low-voltage Detection Reset	MB90V340E-101
		MB90352E				○		128K						49																						LIN	MB90V340E-102
		MB90352ES				-								51																							MB90V340E-101
		MB90352TE				○								49																						LIN, Low-voltage Detection Reset	MB90V340E-102
		MB90352TES				-								51																							MB90V340E-101
		MB90356E				○		64K						49																						LIN, Clock Supervisor	MB90V340E-104
		MB90356ES				-								51																							MB90V340E-103
		MB90356TE				○								49																						LIN, Low-voltage Detection Reset, Clock Supervisor	MB90V340E-104
		MB90356TES				-								51																							MB90V340E-103
		MB90357E				○		128K						49																						LIN, Clock Supervisor	MB90V340E-104
		MB90357ES				-								51																							MB90V340E-103
		MB90357TE				○								49																						LIN, Low-voltage Detection Reset, Clock Supervisor	MB90V340E-104
		MB90357TES				-								51																							MB90V340E-103
		MB90F351E	24	LQFP-64	4.0 to 5.5	○	FLASH	64K	4K	-	16	8	○	49	15(1)	-	-	4	2	6	4	-	-	10	-	-	1	-	-	2	1	-	-	-	-	LIN	MB90V340E-102
		MB90F351ES				-								51																							MB90V340E-101
		MB90F351TE				○								49																						LIN, Low-voltage Detection Reset	MB90V340E-102
		MB90F351TES				-								51																							MB90V340E-101
		MB90F352E				○	Dual Op. Flash	128K						49																						LIN	MB90V340E-102
		MB90F352ES				-								51																							MB90V340E-101
		MB90F352TE				○								49																						LIN, Low-voltage Detection Reset	MB90V340E-102
		MB90F352TES				-								51																							MB90V340E-101
		MB90F356E				○	Flash	64K						49																						LIN, Clock Supervisor	MB90V340E-104
		MB90F356ES				-								51																							MB90V340E-103
		MB90F356TE				○								49																						LIN, Low-voltage Detection Reset, Clock Supervisor	MB90V340E-104
		MB90F356TES				-								51																							MB90V340E-103
		MB90F357E				○		128K						49																						LIN, Clock Supervisor	MB90V340E-104
		MB90F357ES				-								51																							MB90V340E-103
		MB90F357TE				○	Dual Op. Flash	128K						49																						LIN, Low-voltage Detection Reset, Clock Supervisor	MB90V340E-104
		MB90F357TES				-								51																							MB90V340E-103
	MB90360E	MB90362E				○	MASK	64K						34																						LIN	MB90V340E-102
		MB90362ES				-								36																							MB90V340E-101
		MB90362TE				○								34																						LIN, Low-voltage Detection Reset	MB90V340E-102
		MB90362TES				-								36																							MB90V340E-101
		MB90367E				○								34																						LIN, Clock Supervisor	MB90V340E-104
		MB90367ES				-								36																							MB90V340E-103
		MB90367TE	24	LQFP-48	4.0 to 5.5	○		64K	3K	-	-	8	-	34	16(1)	-	-	-	1	4	2	-	-	2	-	-	-	-	-	2	1	-	-	-	-	LIN, Low-voltage Detection Reset, Clock Supervisor	MB90V340E-104
		MB90367TES				-								36																							MB90V340E-103
		MB90F362E				○	FLASH							34																						LIN	MB90V340E-102
		MB90F362ES				-								36																							MB90V340E-101
		MB90F362TE				○								34																						LIN, Low-voltage Detection Reset	MB90V340E-102
		MB90F362TES				-								36																							MB90V340E-101
		MB90F367E				○								34																						LIN, Clock Supervisor	MB90V340E-104
		MB90F367ES				-								36																							MB90V340E-103
		MB90F367TE				○								34																						LIN, Low-voltage Detection Reset, Clock Supervisor	MB90V340E-104
		MB90F367TES				-								36																							MB90V340E-103
	MB90910	MB90911AS				-	MASK	64K	4K																												
		MB90F911AS	32	LQFP-48	3.0 to 5.5	-	FLASH	128K	8K	-	-	8	-	36	16(1)	-	-	-	1	4	2	-	-	3	-	-	-	1	-	2	1	-	-	-	-	LIN	MB90V950AMAS
		MB90F912BS																																			
	MB90950	MB90F952JDS	32	LQFP-100 QFP-100	3.0 to 5.5	-	FLASH	256K	16K	-	16	16	○	82	24(1)	-	8bit x 2	8	2	8	4	-	-	16	-	-	2	-	-	7	2	-	-	-	-	LIN, Clock Supervisor	MB90V950AJAS
		MB90F952MDS																																		LIN	MB90V950AMAS
	MB90990	MB90F997JBS	32	LQFP-48	3.0 to 5.5	-	FLASH	128K +32K	8K	-	-	8	-	36	16(1)	-	8bit x 1	-	1	4	2	-	-	3	-	-	-	1	-	2	1	-	-	-	-	LIN, Clock Supervisor	MB90V950AJAS
		MB90F997MBS																																		LIN	MB90V950AMAS

*: Under developing, **: Under planning,   Bold letters: F²MC-16FX, Black letters: F²MC-16LX

New 8FX • 8 bit Microcontrollers

Applications	Series Name	Product Name	Max Internal Clock Freq [MHz]	Package [pin]	Operating Voltage VCC [V]	Sub Clock	Memory Type	ROM [byte]	RAM [byte]	Ext. Interrupt [ch]	Maximum I/O port [ch]	10bit AD Converter [ch(unit)]	12bit AD Converter [ch(unit)]	Timer	PPG Timer [ch]	Up/Down Counter [ch]	I²C [ch]	UART/SIO [ch]	LIN/UART/SIO [ch]	LCD Controller [seg x com]	Three-phase Inverter	Note	Evaluation Device
LCD Controllers	MB95610H	MB95F613H MB95F613K MB95F614H MB95F614K MB95F616H MB95F616K	16	LQFP-80	2.4 to 5.5	○	Dual Op. Flash	12K 12K 20K 20K 36K 36K	512 512 1024 1024 1024 1024	8	40 41 40 41 40 41	4(1)	-	Reload Timer x 1ch + 8/16bit Compound Timer x 2ch (Interval Timer/PWM/PWC/Input Capture Selectable)	2	-	1	2	-	52 x 4 or 48 x 8	-	Clock Supervisor / Low-voltage Detection Reset, Clock Supervisor	On-chip Debug
	MB95710M	MB95F714J MB95F714M MB95F716J MB95F716M MB95F718J MB95F718M	16	LQFP-80	1.8 to 5.5	○	Dual Op. Flash	20K 20K 36K 36K 60K 60K	512 512 1K 1K 2K 2K	8	75 74 75 74 75 74	-	8(1)	Reload Timer x 1ch + 8/16bit Compound Timer x 2ch (Interval Timer/PWM/PWC/Input Capture Selectable)	2	-	1	3	-	40 x 4 or 36 x 8	-	Low-voltage Detection Reset, Clock Supervisor / Clock Supervisor	On-chip Debug
	MB95770M	MB95F774J MB95F774M MB95F776J MB95F776M MB95F778J MB95F778M	16	LQFP-64	1.8 to 5.5	○	Dual Op. Flash	20K 20K 36K 36K 60K 60K	512 512 1K 1K 2K 2K	8	59 58 59 58 59 58	-	8(1)	Reload Timer x 1ch + 8/16bit Compound Timer x 2ch (Interval Timer/PWM/PWC/Input Capture Selectable)	2	-	1	3	-	32 x 4 or 28 x 8	-	Low-voltage Detection Reset, Clock Supervisor / Clock Supervisor	On-chip Debug
Inverter	MB95630H	MB95F632H MB95F632K MB95F633H MB95F633K MB95F634H MB95F634K MB95F636H MB95F636K	16	LQFP-32 SH-DIP-32 QFN-32	2.4 to 5.5	○	Dual Op. Flash	8K 8K 12K 12K 20K 20K 36K 36K	256 256 512 512 1024 1024 1024 1024	10	28 29 28 29 28 29 28 29	8(1)	-	Reload Timer x 1ch + 8/16bit Compound Timer x 2ch (Interval Timer/PWM/PWC/Input Capture Selectable)	3	1	1	1	1	-	○	Low-voltage Detection Reset, Multi-pulse Generator (Reload/PPG/Waveform Sequencer), Clock Supervisor	On-chip Debug
	MB95690K	MB95F694K MB95F696K MB95F698K	16	LQFP-44 LQFP-48 LQFP-52 QFN-48	2.88 to 5.5	○	Dual Op. Flash	20K 36K 60K	512 1K 2K	8	45 *LQFP44 only: 41	-	12(1) *LQFP44 only: 8(1)	Reload Timer x 1ch + 8/16bit Compound Timer x 2ch (Interval Timer/PWM/PWC/Input Capture Selectable)	3	1	1	1	1	-	○	Low-voltage Detection Reset, Multi-pulse Generator (Reload/PPG/Waveform Sequencer), Clock Supervisor	On-chip Debug
Touch Sensor Controllers	MB95850K	MB95F856K	16	TSSOP-24 SOP-24	2.88 to 5.5	○	Dual Op. Flash	36K	1K	6	21	4(1)	-	8/16bit Compound Timer x 1ch (Interval Timer/PWM/PWC/Input Capture Selectable)	1	-	1	1	-	-	-	Low-voltage Detection Reset, Touch Sensor x 5, Clock Supervisor	On-chip Debug
	MB95860K	MB95F866K	16	LQFP-32	2.88 to 5.5	○	Dual Op. Flash	36K	1K	8	29	6(1)	-	8/16bit Compound Timer x 2ch (Interval Timer/PWM/PWC/Input Capture Selectable)	2	-	1	1	-	-	-	Low-voltage Detection Reset, Touch Sensor x 8, Clock Supervisor	On-chip Debug
	MB95870K	MB95F876K	16	LQFP-48 LQFP-52	2.88 to 5.5	○	Dual Op. Flash	36K	1K	10	45	8(1)	-	8/16bit Compound Timer x 2ch (Interval Timer/PWM/PWC/Input Capture Selectable)	3	-	1	1	-	-	-	Low-voltage Detection Reset, Touch Sensor x 12, Clock Supervisor	On-chip Debug
Standard	MB95560H	MB95F562H MB95F562K MB95F563H MB95F563K MB95F564H MB95F564K	16	SOP-20 TSSOP-20 QFN-32	2.4 to 5.5	○	Dual Op. Flash	8K 8K 12K 12K 20K 20K	240 240 496 496 496 496	6	16 17 16 17 16 17	6(1)	-	8/16bit Compound Timer x 2ch (Interval Timer/PWM/PWC/Input Capture Selectable)	-	-	-	-	1	-	-	Clock Supervisor / Low-voltage Detection Reset, Clock Supervisor	On-chip Debug
	MB95570H	MB95F572H MB95F572K MB95F573H MB95F573K MB95F574H MB95F574K	16	SOP-8	2.4 to 5.5	○	Dual Op. Flash	8K 8K 12K 12K 20K 20K	240 240 496 496 496 496	2	4 5 4 5 4 5	2(1)	-	8/16bit Compound Timer x 2ch (Interval Timer/PWM/PWC/Input Capture Selectable)	-	-	-	-	1	-	-	Clock Supervisor / Low-voltage Detection Reset, Clock Supervisor	On-chip Debug
	MB95580H	MB95F582H MB95F582K MB95F583H MB95F583K MB95F584H MB95F584K	16	SOP-16 TSSOP-16 QFN-32	2.4 to 5.5	○	Dual Op. Flash	8K 8K 12K 12K 20K 20K	240 240 496 496 496 496	6	12 13 12 13 12 13	5(1)	-	8/16bit Compound Timer x 2ch (Interval Timer/PWM/PWC/Input Capture Selectable)	-	-	-	-	1	-	-	Clock Supervisor / Low-voltage Detection Reset, Clock Supervisor	On-chip Debug
	MB95650L	MB95F652E MB95F652L MB95F653E MB95F653L MB95F654E MB95F654L MB95F656E MB95F656L	16	TSSOP-24 SOP-24 QFN-32	1.8 to 5.5	○	Dual Op. Flash	8K 8K 12K 12K 20K 20K 36K 36K	256 256 512 512 1024 1024 1024 1024	6	21 20 21 20 21 20 21 20	6(1)	-	8/16bit Compound Timer x 2ch (Interval Timer/PWM/PWC/Input Capture Selectable)	-	-	2	1	-	-	-	Low-voltage Detection Reset, Clock Supervisor / Clock Supervisor	On-chip Debug
	MB95810K	MB95F814K MB95F816K MB95F818K	16	LQFP-64	2.88 to 5.5	○	Dual Op. Flash	20K 36K 60K	512 1K 2K	12	58	12(1)	-	Reload Timer x 1ch + 8/16bit Compound Timer x 2ch (Interval Timer/PWM/PWC/Input Capture Selectable)	4	-	1	1	1	-	-	Low-voltage Detection Reset, Clock Supervisor	On-chip Debug

*: Under developing, **: Under planning

ABOUT SPANSION

Spansion's (NYSE: CODE) technology is at the heart of electronics systems, powering everything from the internet of today to the smart grid of tomorrow, positively impacting people's daily lives at work and play. Spansion's broad Flash memory product portfolio, smart innovation and industry leading service and support are enabling customers to achieve greater efficiency and success in their target markets. For more information, visit http://www.spansion.com.

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