Cypress Microcontroller
PRODUCT SELECTOR GUIDE
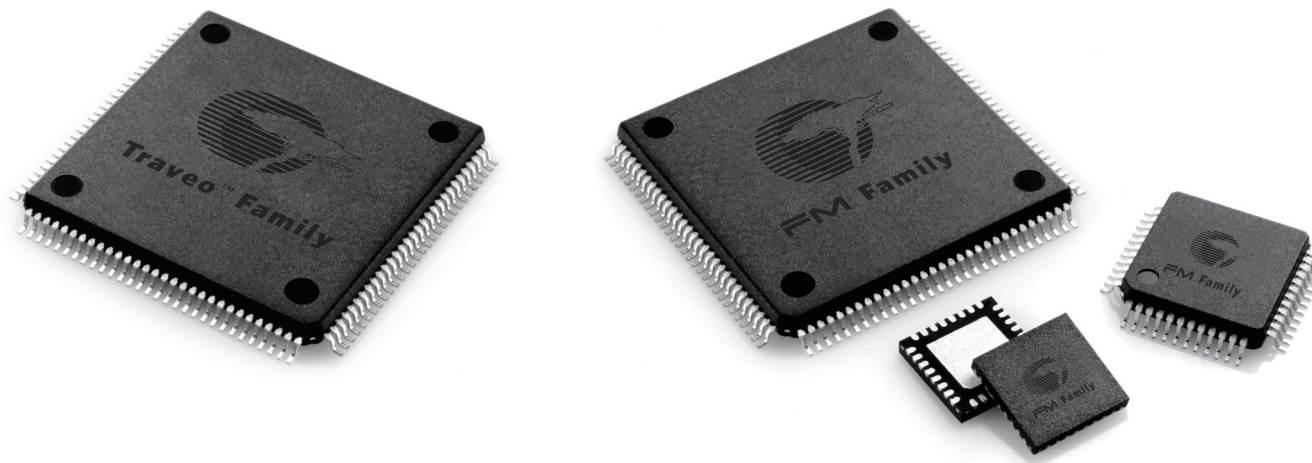
Consumer and Industrial MCU Core Roadmap

300MIPS
200MIPS
100MIPS

ARM Cortex-R5

ARM Next Core

FM4
ARM Cortex-M4

FM3
ARM Cortex-M3

FM0+ ZERO
ARM Cortex-M0+

32bit MCU

FR80S

FR60

FR60Lite

F²MC-16LX

16bit MCU

20MIPS

8FX

8bit MCU

10MIPS

F²MC-8FX

~ 2010 2011 2012 2013 2014 2015 2016 Year
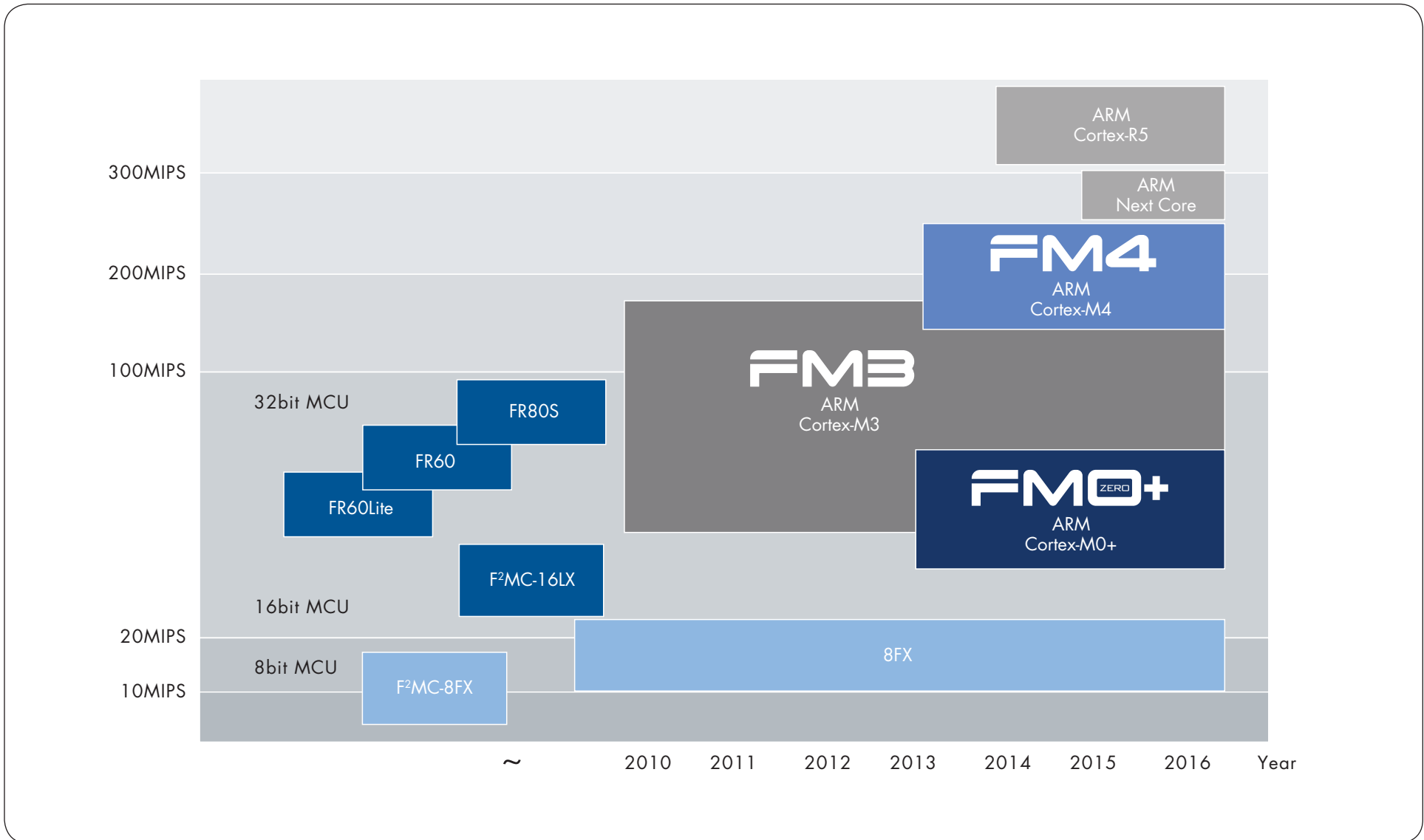
Consumer and Industrial MCU Family
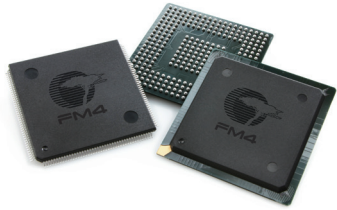
FM4 FAMILY

Cypress ARM® Cortex®-M4F microcontroller family is a high range line providing maximum CPU frequency of 200MHz, a high speed flash memory with DSP and FPU hardware instructions. Customers can select the best fitting device from a range of products, coming in packages from 48 pin to 216 pin and flash memory densities between 256KB and 2MB. The wide operation supply voltage range up to 5.5V which improves the signal to noise ratio, results in a robust design and is unique among Cortex-M4F microcontroller families. The MCUs are designed for applications that require advanced, high-speed computing performance such as general-purpose inverters, servomotors, PLCs and other industrial equipment, as well as inverter-based home appliances such as washing machines and air conditioners.

FM3 FAMILY

Cypress 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 32 pin to 176 pin and flash memory densities between 32KB and 1MB. With a maximum CPU frequency of 144MHz and high speed flash memory, FM3 supports the fastest ARM Cortex-M3 devices on the market. The wide operation supply voltage range up to 5.5V, which 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 four groups: high performance, basic, low power and ultra low leakage groups. The main differences between the groups are CPU operation frequency and supply voltage. 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 Cypress.
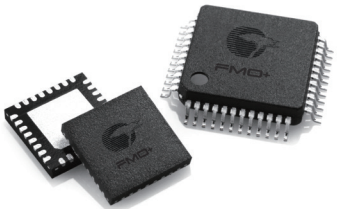
FM0+ FAMILY

The Cypress FM0+ family, which is based on the ARM Cortex-M0+ core, is designed for low power and cost-sensitive applications such as white goods, sensors, meters, HMI systems, power tools and Internet of Things (IoT) battery powered or energy harvesting wearable devices. These microcontrollers can be easily embedded into systems adopting 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. The devices in the ultra-low-power group have an operating voltage range of 1.65V to 3.6V, and a maximum CPU clock frequency of 40MHz, a RUN mode current of 70 µA/MHz, an RTC mode current of 0.7 µA and wake-up time of approximately 40 µs.

8FX FAMILY

Cypress 8FX MCU family is a high-performance 8-bit microcontroller utilizing a different embedded flash memory size. This series uses the F2MC-8FX CISC CPU, which offers industry leading class performance of an 8-bit microcontroller unit enabling more instructions to be executed per cycle. On top of delivering industry class performance MCUs, the 8FX family also delivers low power efficient MCU products for the customer's usage. This series also features a variety of on-chip timers, A/D converters, analog and digital peripheral and communication interfaces such as LIN-UART (Local Interconnect Network Universal Asynchronous Receiver-Transmitter), CAN (controller area network) and I2C (Inter-Integrated Circuit) interface for various application usages. For easy development, the 8FX family also employs 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. Cypress also provides easy to use and cost competitive development starter kits and development environments for this MCU series.

Automotive MCU Core Roadmap

Performance (y-axis)

Traveo™
Cortex-R5 [32bit ARM]

FCR4
Cortex-R4 [32bit ARM]

FR81S
[32bit Proprietary core]

FR60/FR60Lite
[32bit Proprietary core]

F²MC-16FX
[16bit Proprietary core]

F²MC-16LX
[16bit Proprietary core]

2009   2011   2013   2015
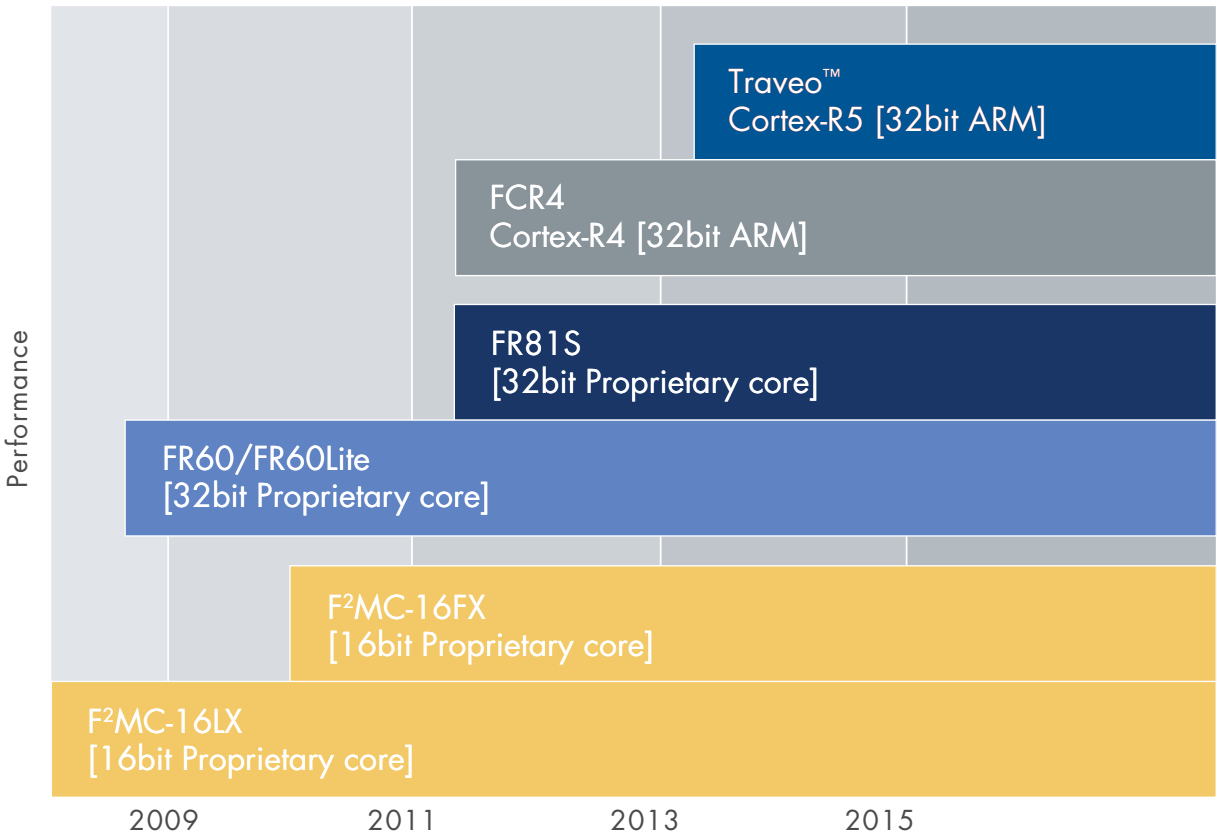
Automotive MCU Family

TRAVEO FAMILY

The Cypress Traveo™ family expands the company's automotive application coverage, scalability and high performance into one line-up and at the same time adds new features to fulfill the latest requirements of the automotive industry. Based on the powerful ARM® Cortex®-R5 and R5F core in single and dual core operations, it offers state-of-the-art real-time performance, safety and security features.

The family supports the latest in-car networks and offers high performance graphics engines optimized for a minimum memory footprint and embeds dedicated features to increase data security in the car.

High-level Traveo Features

- ARM Cortex-R5 core
- Dual core
- Embedded twin-motor control with internal R/D converter
- Embedded 2D and 3D graphics engines
- High performance embedded flash memory
- Cypress HyperBus™: High speed serial interfaces to connect external memory
- Qualified for automotive use (AEC-Q100)
- Software support for Autosar, graphics drivers and more

FR FAMILY

Cypress 32bit MCU families have been designed in close co-operation with major automotive customers worldwide and inherit the high-performance core of Cypress's proprietary FR MCU architecture. They support communication interfaces such as CAN, FlexRay and LIN as well as up to 2MB on-chip memory capacity. 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 Cypress's stand alone FlexRay controller or to the latest generation of graphics controllers in order to build full-featured dashboards, driver information systems or advanced body systems.

FCR4 FAMILY

The FCR4 family has been specifically designed to offer an innovative, scalable solution for hybrid instrument clusters, which combine traditional meters and graphical displays. The devices offer a powerful architecture based on the ARM Cortex-R4 core and Cypress's 2D graphics engine.

High-level FCR4 Features

- ARM Cortex-R4 core
- Embedded 2D graphics engine
- 2MB flash, 64KB E2Flash
- Up to 208KB RAM
- Features including real-time clock/auto calibration, sound generator and I2S

F2MC-16FX FAMILY

Cypress 16-bit flexible microcontroller series offers a scalable family concept approach to a variety of automotive and industrial applications. The scalable 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^2C bus interface, analog 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, preventing unauthorized reading of the contents of the flash memory.

FM4 Family – 32bit Microcontrollers

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 Converter [ch]	12bit AD Converter [ch(unit)]	DA Converter [bit x ch]	Timer		Up/Down Counter [ch]	Other timers [ch]	I²C [ch]	Serial	Communication	USB-Host [ch]	USB-Function [ch]	LCD Controller [seg x com]	Three-phase Inverter	Note	Evaluation Device
S6E2HG	S6E2HG6E0A	160	LQFP-80	2.7 to 5.5	✓	Main Flash +Work Flash	512K +32K	64K	–	8	16	✓	63	–	16 (3)	–	Multi-Function Timer x3units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG 9ch	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 3	1	Multi Function Serial x 8ch (UART/CSIO/I2C/LIN Selectable)		2	–	–	–	✓	Dual Timer, Real Timer Clock, Unique ID, DSTC x 256ch, SDC	On-Chip Debug (SWJ-DP/ ETM)
	S6E2HG6F0A		LQFP-100										80		24 (3)														
	S6E2HG6G0A		LQFP-120 BGA-121										100																
	S6E2HG4E0A	160	LQFP-80	2.7 to 5.5	✓	Main Flash +Work Flash	256K +32K	32K	-	8	16	✓	63	–	16 (3)	–													
	S6E2HG4F0A		LQFP-100										80		24 (3)														
	S6E2HG4G0A		LQFP-120 BGA-121										100																
S6E2HE	S6E2HE6E0A	160	LQFP-80	2.7 to 5.5	✓	Main Flash +Work Flash	512K +32K	64K	-	8	16	✓	63	–	16 (3)	–	Multi-Function Timer x3units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG 9ch	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, Real Timer Clock, Unique ID, DSTC x 256ch, SDC	On-Chip Debug (SWJ-DP/ ETM)
	S6E2HE6F0A		LQFP-100										80		24 (3)														
	S6E2HE6G0A		LQFP-120 BGA-121										100																
	S6E2HE4E0A	160	LQFP-80	2.7 to 5.5	✓	Main Flash +Work Flash	256K +32K	32K	-	8	16	✓	63	–	16 (3)	–													
	S6E2HE4F0A		LQFP-100										80		24 (3)														
	S6E2HE4G0A		LQFP-120 BGA-121										100																
S6E2H4	S6E2H46E0A	160	LQFP-80	2.7 to 5.5	✓	Main Flash +Work Flash	512K +32K	64K	-	8	16	✓	63	–	16 (3)	–	Multi-Function Timer x3units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG 9ch	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 3	1	Multi Function Serial x 8ch (UART/CSIO/I2C/LIN Selectable)		2	–	–	–	✓	Dual Timer, Real Timer Clock, Unique ID, DSTC x 256ch	On-Chip Debug (SWJ-DP/ ETM)
	S6E2H46F0A		LQFP-100										80		24 (3)														
	S6E2H46G0A		LQFP-120 BGA-121										100																
	S6E2H44E0A	160	LQFP-80	2.7 to 5.5	✓	Main Flash +Work Flash	256K +32K	32K	-	8	16	✓	63	–	16 (3)	–													
	S6E2H44F0A		LQFP-100										80		24 (3)														
	S6E2H44G0A		LQFP-120 BGA-121										100																
S6E2H1	S6E2H16E0A	160	LQFP-80	2.7 to 5.5	✓	Main Flash +Work Flash	512K +32K	64K	-	8	16	✓	63	–	16 (3)	–	Multi-Function Timer x3units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG 9ch	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, Real Timer Clock, Unique ID, DSTC x 256ch	On-Chip Debug (SWJ-DP/ ETM)
	S6E2H16F0A		LQFP-100										80		24 (3)														
	S6E2H16G0A		LQFP-120 BGA-121										100																
	S6E2H14E0A	160	LQFP-80	2.7 to 5.5	✓	Main Flash +Work Flash	256K +32K	32K	-	8	16	✓	63	–	16 (3)	–													
	S6E2H14F0A		LQFP-100										80		24 (3)														
	S6E2H14G0A		LQFP-120 BGA-121										100																
S6E2GM w/security	S6E2GM8HHA	180	LQFP-144	2.7 to 5.5	✓	Main Flash	1024K	192K	-	8	32	✓	121	–	24 (3)	–	Multi-Function Timer x2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG 6ch	Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 4		Multi Function Serial x 10ch (UART/CSIO/I2C/LIN Selectable)		1	2ch (USB-Host/ USB-Function Selectable)	–	–	✓	Dual Timer, Real Timer Clock, Unique ID, DSTC×256ch, Tiny I2S, Smart Card I/F, ETH, SDC, Chipher	On-Chip Debug (SWJ-DP/ ETM)
	S6E2GM8JHA		LQFP-176										153		32 (3)														
	S6E2GM6HHA		LQFP-144				512K	128K					121		24 (3)														
	S6E2GM6JHA		LQFP-176										153		32 (3)														
S6E2GM	S6E2GM8H0A	180	LQFP-144	2.7 to 5.5	✓	Main Flash	1024K	192K	-	8	32	✓	121	–	24 (3)	–	Multi-Function Timer x2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG 6ch	Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 4		Multi Function Serial x 10ch (UART/CSIO/I2C/LIN Selectable)		1	2ch (USB-Host/ USB-Function Selectable)	–	–	✓	Dual Timer, Real Timer Clock, Unique ID, DSTC×256ch, Tiny I2S, Smart Card I/F, ETH, SDC	On-Chip Debug (SWJ-DP/ ETM)
	S6E2GM8J0A		LQFP-176										153		32 (3)														
	S6E2GM6H0A		LQFP-144				512K	128K					121		24 (3)														
	S6E2GM6J0A		LQFP-176										153		32 (3)														
S6E2GK w/security	S6E2GK8HHA	180	LQFP-144	2.7 to 5.5	✓	Main Flash	1024K	192K	-	8	32	✓	121	–	24 (3)	–	Multi-Function Timer x2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG 6ch	Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 4		Multi Function Serial x 10ch (UART/CSIO/I2C/LIN Selectable)		–	2ch (USB-Host/ USB-Function Selectable)	–	–	✓	Dual Timer, Real Timer Clock, Unique ID, DSTC×256ch, Tiny I2S, Smart Card I/F, ETH, SDC, Chipher	On-Chip Debug (SWJ-DP/ ETM)
	S6E2GK8JHA		LQFP-176										153		32 (3)														
	S6E2GK6HHA		LQFP-144				512K	128K					121		24 (3)														
	S6E2GK6JHA		LQFP-176										153		32 (3)														
S6E2GK	S6E2GK8H0A	180	LQFP-144	2.7 to 5.5	✓	Main Flash	1024K	192K	-	8	32	✓	121	–	24 (3)	–	Multi-Function Timer x2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG 6ch	Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 4		Multi Function Serial x 10ch (UART/CSIO/I2C/LIN Selectable)		–	2ch (USB-Host/ USB-Function Selectable)	–	–	✓	Dual Timer, Real Timer Clock, Unique ID, DSTC×256ch, Tiny I2S, Smart Card I/F, ETH, SDC	On-Chip Debug (SWJ-DP/ ETM)
	S6E2GK8J0A		LQFP-176										153		32 (3)														
	S6E2GK6H0A		LQFP-144				512K	128K					121		24 (3)														
	S6E2GK6J0A		LQFP-176										153		32 (3)														

FM4 Family – 32bit 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]	Timer: Output Compare [ch] / Free-Run Timer [ch] / Input Capture [ch]	Timer: Reload Timer [ch] / PWM Timer [ch] / PWC Timer [ch] / PPG Timer [ch]	Up/Down Counter [ch]	Other timers [ch]	Serial	CAN [ch]	USB-Host [ch] / USB-Function [ch]	LCD Controller [seg x com]	Three-phase Inverter	Note	Evaluation Device
S6E2GH	S6E2GH8H0A (LQFP-144) S6E2GH8J0A (LQFP-176) S6E2GH6H0A (LQFP-144) S6E2GH6J0A (LQFP-176)	180	LQFP-144 LQFP-176 LQFP-144 LQFP-176	2.7 to 5.5	✓	Main Flash	1024K / 512K	192K / 128K	-	8	32	✓	121 / 153 / 121 / 153	–	24 (3) / 32 (3) / 24 (3) / 32 (3)	–	Multi-Function Timer x2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG 6ch	Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 4		Multi Function Serial x 10ch (UART/CSIO/I2C/LIN Selectable)	1	2ch (USB-Host/ USB-Function Selectable)	–	✓	Dual Timer, Real Timer Clock, Unique ID, DSTC×256ch, Tiny I2S, Smart Card I/F, SDC	On-Chip Debug (SWJ-DP/ ETM)
S6E2G3	S6E2G38H0A (LQFP-144) S6E2G38J0A (LQFP-176) S6E2G36H0A (LQFP-144) S6E2G36J0A (LQFP-176)	180	LQFP-144 LQFP-176 LQFP-144 LQFP-176	2.7 to 5.5	✓	Main Flash	1024K / 512K	192K / 128K	-	8	32	✓	121 / 153 / 121 / 153	–	24 (3) / 32 (3) / 24 (3) / 32 (3)	–	Multi-Function Timer x2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG 6ch	Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 4		Multi Function Serial x 10ch (UART/CSIO/I2C/LIN Selectable)	–	2ch (USB-Host/ USB-Function Selectable)	–	✓	Dual Timer, Real Timer Clock, Unique ID, DSTC×256ch, Tiny I2S, Smart Card I/F	On-Chip Debug (SWJ-DP/ ETM)
S6E2G2 w/security	S6E2G28HHA (LQFP-144) S6E2G28JHA (LQFP-176) S6E2G26HHA (LQFP-144) S6E2G26JHA (LQFP-176)	180	LQFP-144 LQFP-176 LQFP-144 LQFP-176	2.7 to 5.5	✓	Main Flash	1024K / 512K	192K / 128K	-	8	32	✓	121 / 153 / 121 / 153	–	24 (3) / 32 (3) / 24 (3) / 32 (3)	–	Multi-Function Timer x2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG 6ch	Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 4		Multi Function Serial x 10ch (UART/CSIO/I2C/LIN Selectable)	–	2ch (USB-Host/ USB-Function Selectable)	–	✓	Dual Timer, Real Timer Clock, Unique ID, DSTC×256ch, Tiny I2S, Smart Card I/F, ETH, Chipher	On-Chip Debug (SWJ-DP/ ETM)
S6E2G2	S6E2G28H0A (LQFP-144) S6E2G28J0A (LQFP-176) S6E2G26H0A (LQFP-144) S6E2G26J0A (LQFP-176)	180	LQFP-144 LQFP-176 LQFP-144 LQFP-176	2.7 to 5.5	✓	Main Flash	1024K / 512K	192K / 128K	-	8	32	✓	121 / 153 / 121 / 153	–	24 (3) / 32 (3) / 24 (3) / 32 (3)	–	Multi-Function Timer x2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG 6ch	Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 4		Multi Function Serial x 10ch (UART/CSIO/I2C/LIN Selectable)	–	2ch (USB-Host/ USB-Function Selectable)	–	✓	Dual Timer, Real Timer Clock, Unique ID, DSTC×256ch, Tiny I2S, Smart Card I/F, ETH	On-Chip Debug (SWJ-DP/ ETM)
S6E2DH	S6E2DH5G0A (LQFP-120 / TEQFP-120 / BGA-161) S6E2DH5GJA (LQFP-120 (SiP)) S6E2DH5J0A (LQFP-176)	160		2.7-3.6	✓	Main Flash	384K	36K	-	8	16	✓	98 / 90 / 154	–	24 (3)	-	Multi-Function Timer x 3units (Free-Run 3ch/Output Compare 6ch/Input Capture 4ch /Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG6ch	Base Timer x 8ch (Reload/PPG/PWM/PWC Selectable)	QPRC x 1		Multi Function Serial x 8ch (UART/CSIO/I2C/LIN Selectable)	1	1ch (USB-Host/ USB-Function Selectable)	-	-	Dual Timer, Real Timer Clock, Unique ID, DSTC x128ch, CAN-FD 1ch, SDC, I2S 2ch, High Speed Quad SPI x1, Hyper Bus x1, GDC	On-Chip Debug (SWJ-DP/ETM)
S6E2DF	S6E2DF5G0A (LQFP-120 / TEQFP-120 / BGA-161) S6E2DF5GJA (LQFP-120 (SiP)) S6E2DF5J0A (LQFP-176)	160		2.7-3.6	✓	Main Flash	384K	36K	-	8	16	✓	98 / 90 / 154	–	24 (3)	-	Multi-Function Timer x 3units (Free-Run 3ch/Output Compare 6ch/Input Capture 4ch /Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG6ch	Base Timer x 8ch (Reload/PPG/PWM/PWC Selectable)	QPRC x 1		Multi Function Serial x 8ch (UART/CSIO/I2C/LIN Selectable)	1	1ch (USB-Host/ USB-Function Selectable)	-	-	Dual Timer, Real Timer Clock, Unique ID, DSTC x128ch, CAN-FD 1ch, I2S 2ch, High Speed Quad SPI x1, Hyper Bus x1, GDC	On-Chip Debug (SWJ-DP/ETM)
S6E2D5	S6E2D55G0A (LQFP-120 / TEQFP-120 / BGA-161) S6E2D55GJA (LQFP-120 (SiP)) S6E2D55J0A (LQFP-176)	160		2.7-3.6	✓	Main Flash	384K	36K	-	8	16	✓	98 / 90 / 154	–	24 (3)	-	Multi-Function Timer x 3units (Free-Run 3ch/Output Compare 6ch/Input Capture 4ch /Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG6ch	Base Timer x 8ch (Reload/PPG/PWM/PWC Selectable)	QPRC x 1		Multi Function Serial x 8ch (UART/CSIO/I2C/LIN Selectable)	-	1ch (USB-Host/ USB-Function Selectable)	-	-	Dual Timer, Real Timer Clock, Unique ID, DSTC x128ch, SDC, I2S 2ch, High Speed Quad SPI x1, Hyper Bus x1, GDC	On-Chip Debug (SWJ-DP/ETM)
S6E2D3	S6E2D35G0A (LQFP-120 / TEQFP-120 / BGA-161) S6E2D35GJA (LQFP-120 (SiP)) S6E2D35J0A (LQFP-176)	160		2.7-3.6	✓	Main Flash	384K	36K	-	8	16	✓	98 / 90 / 154	–	24 (3)	-	Multi-Function Timer x 3units (Free-Run 3ch/Output Compare 6ch/Input Capture 4ch /Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG6ch	Base Timer x 8ch (Reload/PPG/PWM/PWC Selectable)	QPRC x 1		Multi Function Serial x 8ch (UART/CSIO/I2C/LIN Selectable)	-	1ch (USB-Host/ USB-Function Selectable)	-	-	Dual Timer, Real Timer Clock, Unique ID, DSTC x128ch, I2S 2ch, High Speed Quad SPI x1, Hyper Bus x1, GDC	On-Chip Debug (SWJ-DP/ETM)

FM4 Family – 32bit 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]	Timer — Output Compare [ch] / Free-Run Timer [ch] / Input Capture [ch]	Timer — Reload Timer [ch] / PWM Timer [ch] / PWC Timer [ch] / PPG Timer [ch]	Up/Down Counter [ch]	Other timers [ch]	Serial — I²C [ch] / UART/SI [ch] / SIO [ch] / LIN/UART/SIO [ch]	Communication — CAN [ch] / USB-Host [ch] / USB-Function [ch]	LCD Controller [seg x com]	Three-phase Inverter	Note	Evaluation Device
S6E2CC-V	S6E2CCAJGA	200	LQFP-176 BGA-192	2.7 to 5.5	✓	Main Flash +Main Flash	2M	256K	–	8	32	✓	152	–	32 (3)	12 x 2	Multi-Function Timer x3units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG 9ch	Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 4	1	Multi Function Serial x 16ch (UART/CSIO/I2C/LIN Selectable)	3 (2 x CAN + CAN FD) / 2ch (USB-Host/ USB-Function Selectable)	–	✓	Dual Timer, Real Timer Clock, Unique ID, DSTC×256ch, SDC, I2S 1ch(without 144pin), HDMI-CEC 2ch, High Speed Quad SPI x1(without 144pin), Programmable CRC, Chipher, Voice	On-Chip Debug (SWJ-DP/ETM/ HTM)
	S6E2CC8JGA						1M	128K																		
	S6E2CCAJFA		BGA-192				2M	256K																	Dual Timer, Real Timer Clock, Unique ID, DSTC×256ch, SDC, I2S 1ch(without 144pin), HDMI-CEC 2ch, High Speed Quad SPI x1(without 144pin), Programmable CRC, Eth1ch, Voice	
	S6E2CC8JFA						1M	128K																		
S6E2CC w/ Security	S6E2CCAHHA	200	LQFP-144	2.7 to 5.5	✓	Main Flash +Main Flash	2M	256K	–	8	32	✓	120	–	24 (3)	12 x 2	Multi-Function Timer x3units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG 9ch	Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 4	1	Multi Function Serial x 16ch (UART/CSIO/I2C/LIN Selectable)	3 (2 x CAN + CAN FD) / 2ch (USB-Host/ USB-Function Selectable)	–	✓	Dual Timer, Real Timer Clock, Unique ID, DSTC x 256ch, SDC, I2S 1ch(without 144pin), HDMI-CEC 2ch, High Speed Quad SPI x1(without 144pin), Programmable CRC, Eth1ch, Chipher	On-Chip Debug (SWJ-DP/ETM/ HTM)
	S6E2CCAJHA		LQFP-176 BGA-192										152		32 (3)											
	S6E2CCALHA		LQFP-216										190													
	S6E2CC9HHA		LQFP-144				1.5M	192K					120		24 (3)											
	S6E2CC9JHA		LQFP-176 BGA-192										152		32 (3)											
	S6E2CC9LHA		LQFP-216										190													
	S6E2CC8HHA		LQFP-144				1M	128K					120		24 (3)											
	S6E2CC8JHA		LQFP-176 BGA-192										152		32 (3)											
	S6E2CC8LHA		LQFP-216										190													
S6E2CC	S6E2CCAH0A	200	LQFP-144	2.7 to 5.5	✓	Main Flash +Main Flash	2M	256K	–	8	32	✓	120	–	24 (3)	12 x 2	Multi-Function Timer x3units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG 9ch	Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 4	1	Multi Function Serial x 16ch (UART/CSIO/I2C/LIN Selectable)	3 (2 x CAN + CAN FD) / 2ch (USB-Host/ USB-Function Selectable)	–	✓	Dual Timer, Real Timer Clock, Unique ID, DSTC x 256ch, SDC, I2S 1ch(without 144pin), HDMI-CEC 2ch, High Speed Quad SPI x1(without 144pin), Programmable CRC, Eth1ch	On-Chip Debug (SWJ-DP/ETM/ HTM)
	S6E2CCAJ0A		LQFP-176 BGA-192										152		32 (3)											
	S6E2CCAL0A		LQFP-216										190													
	S6E2CC9H0A		LQFP-144				1.5M	196K					120		24 (3)											
	S6E2CC9J0A		LQFP-176 BGA-192										152		32 (3)											
	S6E2CC9L0A		LQFP-216										190													
	S6E2CC8H0A		LQFP-144				1M	128K					120		24 (3)											
	S6E2CC8J0A		LQFP-176 BGA-192										152		32 (3)											
	S6E2CC8L0A		LQFP-216										190													
S6E2C5	S6E2C5AH0A	200	LQFP-144	2.7 to 5.5	✓	Main Flash +Main Flash	2M	256K	–	8	32	✓	120	–	24 (3)	12 x 2	Multi-Function Timer x3units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG 9ch	Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 4	1	Multi Function Serial x 16ch (UART/CSIO/I2C/LIN Selectable)	3 (2 x CAN + CAN FD) / 2ch (USB-Host/ USB-Function Selectable)	–	✓	Dual Timer, Real Timer Clock, Unique ID, DSTC x 256ch, SDC, I2S 1ch(without 144pin), HDMI-CEC 2ch, High Speed Quad SPI x1(without 144pin), Programmable CRC	On-Chip Debug (SWJ-DP/ETM/ HTM)
	S6E2C5AJ0A		LQFP-176 BGA-192										152		32 (3)											
	S6E2C5AL0A		LQFP-216										190													
	S6E2C59H0A		LQFP-144				1.5M	192K					120		24 (3)											
	S6E2C59J0A		LQFP-176 BGA-192										152		32 (3)											
	S6E2C59L0A		LQFP-216										190													
	S6E2C58H0A		LQFP-144				1M	128K					120		24 (3)											
	S6E2C58J0A		LQFP-176 BGA-192										152		32 (3)											
	S6E2C58L0A		LQFP-216										190													

FM4 Family – 32bit Microcontrollers

Series Name	Product Name	Package [pin]	Maximum Internal Clock Frequency [MHz]	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]	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]	Up/Down Counter [ch]	Other timers [ch]	I²C [ch]	UART/SI [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
S6E2C4	S6E2C4AH0A	LQFP-144	200	2.7 to 5.5	✓	Main Flash +Main Flash	2M	256K	–	8	32	✓	120	–	24 (3)	12 x 2	Multi-Function Timer x3units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG 9ch			Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)				QPRC x 4	1		Multi Function Serial x 16ch (UART/CSIO/I2C/LIN Selectable)			3 (2 x CAN + CAN FD)	–	–		✓	Dual Timer, Real Timer Clock, Unique ID, DSTC x 256ch, SDC, I2S 1ch(without 144pin), HDMI-CEC 2ch, High Speed Quad SPI x1(without 144pin), Programmable CRC	On-Chip Debug (SWJ-DP/ETM/ HTM)
	S6E2C4AJ0A	LQFP-176 BGA-192											152		32 (3)																				
	S6E2C4AL0A	LQFP-216											190																						
	S6E2C49H0A	LQFP-144					1.5M	196K					120		24 (3)																				
	S6E2C49J0A	LQFP-176 BGA-192											152		32 (3)																				
	S6E2C49L0A	LQFP-216											190																						
	S6E2C48H0A	LQFP-144					1M	128K					120		24 (3)																				
	S6E2C48J0A	LQFP-176 BGA-192											152		32 (3)																				
	S6E2C48L0A	LQFP-216											190																						
S6E2C3	S6E2C3AH0A	LQFP-144	200	2.7 to 5.5	✓	Main Flash +Main Flash	2M	256K	–	8	32	✓	120	–	24 (3)	12 x 2	Multi-Function Timer x3units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG 9ch			Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)				QPRC x 4	1		Multi Function Serial x 16ch (UART/CSIO/I2C/LIN Selectable)			–	2ch (USB-Host/ USB-Function Selectable)	–		✓	Dual Timer, Real Timer Clock, Unique ID, DSTC x 256ch, SDC, I2S 1ch(without 144pin), HDMI-CEC 2ch, High Speed Quad SPI x1(without 144pin), Programmable CRC	On-Chip Debug (SWJ-DP/ETM/ HTM)
	S6E2C3AJ0A	LQFP-176 BGA-192											152		32 (3)																				
	S6E2C3AL0A	LQFP-216											190																						
	S6E2C39H0A	LQFP-144					1.5M	192K					120		24 (3)																				
	S6E2C39J0A	LQFP-176 BGA-192											152		32 (3)																				
	S6E2C39L0A	LQFP-216											190																						
	S6E2C38H0A	LQFP-144					1M	128K					120		24 (3)																				
	S6E2C38J0A	LQFP-176 BGA-192											152		32 (3)																				
	S6E2C38L0A	LQFP-216											190																						
S6E2C2 w/ Security	S6E2C2AHHA	LQFP-144	200	2.7 to 5.5	✓	Main Flash +Main Flash	2M	256K	–	8	32	✓	120	–	24 (3)	12 x 2	Multi-Function Timer x3units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG 9ch			Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)				QPRC x 4	1		Multi Function Serial x 16ch (UART/CSIO/I2C/LIN Selectable)			–	2ch (USB-Host/ USB-Function Selectable)	–		✓	Dual Timer, Real Timer Clock, Unique ID, DSTC x 256ch, SDC, I2S 1ch(without 144pin), HDMI-CEC 2ch, High Speed Quad SPI x1(without 144pin), Programmable CRC, Eth1ch, Chipher	On-Chip Debug (SWJ-DP/ETM/ HTM)
	S6E2C2AJHA	LQFP-176 BGA-192											152		32 (3)																				
	S6E2C2ALHA	LQFP-216											190																						
	S6E2C29HHA	LQFP-144					1.5M	196K					120		24 (3)																				
	S6E2C29JHA	LQFP-176 BGA-192											152		32 (3)																				
	S6E2C29LHA	LQFP-216											190																						
	S6E2C28HHA	LQFP-144					1M	128K					120		24 (3)																				
	S6E2C28JHA	LQFP-176 BGA-192											152		32 (3)																				
	S6E2C28LHA	LQFP-216											190																						
S6E2C2	S6E2C2AH0A	LQFP-144	200	2.7 to 5.5	✓	Main Flash +Main Flash	2M	256K	–	8	32	✓	120	–	24 (3)	12 x 2	Multi-Function Timer x3units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG 9ch			Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)				QPRC x 4	1		Multi Function Serial x 16ch (UART/CSIO/I2C/LIN Selectable)			–	2ch (USB-Host/ USB-Function Selectable)	–		✓	Dual Timer, Real Timer Clock, Unique ID, DSTC x 256ch, SDC, I2S 1ch(without 144pin), HDMI-CEC 2ch, High Speed Quad SPI x1(without 144pin), Programmable CRC, Eth1ch	On-Chip Debug (SWJ-DP/ETM/ HTM)
	S6E2C2AJ0A	LQFP-176 BGA-192											152		32 (3)																				
	S6E2C2AL0A	LQFP-216											190																						
	S6E2C29H0A	LQFP-144					1.5M	192K					120		24 (3)																				
	S6E2C29J0A	LQFP-176 BGA-192											152		32 (3)																				
	S6E2C29L0A	LQFP-216											190																						
	S6E2C28H0A	LQFP-144					1M	128K					120		24 (3)																				
	S6E2C28J0A	LQFP-176 BGA-192											152		32 (3)																				
	S6E2C28L0A	LQFP-216											190																						
S6E2C1	S6E2C1AH0A	LQFP-144	200	2.7 to 5.5	✓	Main Flash +Main Flash	2M	256K	–	8	32	✓	120	–	24 (3)	12 x 2	Multi-Function Timer x3units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG 9ch			Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)				QPRC x 4	1		Multi Function Serial x 16ch (UART/CSIO/I2C/LIN Selectable)			–	–	–		✓	Dual Timer, Real Timer Clock, Unique ID, DSTC x 256ch, SDC, I2S 1ch(without 144pin), HDMI-CEC 2ch, High Speed Quad SPI x1(without 144pin), Programmable CRC	On-Chip Debug (SWJ-DP/ETM/ HTM)
	S6E2C1AJ0A	LQFP-176 BGA-192											152		32 (3)																				
	S6E2C1AL0A	LQFP-216											190																						
	S6E2C19H0A	LQFP-144					1.5M	196K					120		24 (3)																				
	S6E2C19J0A	LQFP-176 BGA-192											152		32 (3)																				
	S6E2C19L0A	LQFP-216											190																						
	S6E2C18H0A	LQFP-144					1M	128K					120		24 (3)																				
	S6E2C18J0A	LQFP-176 BGA-192											152		32 (3)																				
	S6E2C18L0A	LQFP-216											190																						

FM4 Family – 32bit 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]	12bit AD Converter [ch/unit]	DA Converter [bit x ch]	Timer		Up/Down Counter [ch]	Other timers [ch]	Serial	Communication			LCD Controller [seg x com]	Three-phase Inverter	Note	Evaluation Device
																	Output Compare / Input Capture / Free-Run / PPG / Waveform Gen.	Reload/PWM/PWC/PPG Timer			I²C/UART/SI/SIO/LIN	CAN	USB-Host	USB-Function				
S6E2C1-E	S6E2C10H2A	200	LQFP-144	2.7 to 5.5	✓	-	0M	256K	-	8	32	✓	120	-	24 (3) / 152	12 x 2	Multi-Function Timer x3units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable), PPG 9ch	Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 4	1	Multi Function Serial x 16ch (UART/CSIO/I2C/LIN Selectable)	–	–	–	–	✓	Dual Timer, Real Timer Clock, Unique ID, DSTC x 256ch, SDC, I2S 1ch(without 144pin), HDMI-CEC 2ch, High Speed Quad SPI x1(without 144pin), Programmable CRC, Chipher	On-Chip Debug (SWJ-DP/ETM/ HTM)
	S6E2C10J2A		LQFP-176 BGA-192																									
	S6E2C10L2A		LQFP-216																									
MB9B560R	MB9BF566M	160	LQFP-80	2.7 to 5.5	✓	Main Flash +Work Flash	512K +32K	64K	–	8	16	✓	63	–	16(3) / 24(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															
	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) / 24(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															
	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	160	LQFP-80	160	✓	Main Flash +Work Flash	1024K +32K	128K	–	8	16	✓	63	–	16(3) / 24(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)
	MB9BF468N		LQFP-100 QFP-100 BGA-112										80															
	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) / 24(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															
	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															

FM4 Family – 32bit 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]	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/SI [ch]	SIO [ch]	LIN/UART/SIO [ch]	CAN [ch]	USB-Host [ch]	USB-Function [ch]				
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																								
MB9B560L	MB9BF564K	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)				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	160	LQFP-48 QFN-48	2.7 to 5.5	✓	Main Flash +Work Flash	512K +32K	64K	–	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)
	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)																			

FM4 Family – 32bit Microcontrollers

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 Converter [bit x ch]	Timer	Reload/PWM/PWC/PPG Timer	Up/Down Counter [ch]	Other timers [ch]	Serial	CAN [ch]	USB-Host [ch]	USB-Function [ch]	LCD Controller [seg x com]	Three-phase Inverter	Note	Evaluation Device
MB9B460L	MB9BF464K	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)	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)											

FM4 Family – 32bit 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]	Timer — Output Compare/Free-Run/Input Capture [ch]	Reload/PWM/PWC/PPG Timer [ch]	Up/Down Counter [ch]	Other timers [ch]	Serial — I²C/UART/SI/SIO/LIN [ch]	CAN [ch]	USB-Host/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 / 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)										

FM4 Family – 32bit 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/SI [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
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)																			
	MB9BF166K		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)																			
	MB9BF166L		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)																			

FM3 Family – 32bit Microcontrollers

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/SI [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
																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)												
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)												
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)												

FM3 Family – 32bit 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/SI [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
HIGH-PERFORMANCE GROUP

HIGH-PERFORMANCE GROUP

Series Name	Product Name	Max Clock [MHz]	Package [pin]	Operating Voltage: VCC [V]	Sub Clock	Memory Type	ROM [byte]	RAM [byte]	Cache	DMAC	Ext. Int	Ext. Bus	Max I/O	10bit AD	12bit AD	DA Conv	Timer	Base Timer	Up/Down Counter	Other timers	Serial	Communication	3-phase Inv	Note	Evaluation Device
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)	CAN 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)	CAN 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												
MB9B110R	MB9BF112N	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)	–	✓	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												

FM3 Family – 32bit 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/SI [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
																										HIGH-PERFORMANCE GROUP	
MB9B500B	MB9BF504NB	80	LQFP-100 BGA-112	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	80	LQFP-100 BGA-112	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	80	LQFP-100 BGA-112	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	80	LQFP-100 BGA-112	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	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)	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)						Multi Function Serial x 8ch (UART/CSIO/I2C/LIN Selectable)						
	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)						Multi Function Serial x 8ch (UART/CSIO/I2C/LIN Selectable)						
	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)												

FM3 Family – 32bit 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/SI [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
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)									QPRC x 2		Multi Function Serial x 8ch (UART/CSIO/I2C/LIN Selectable)									
	MB9BF321M		LQFP-80 BGA-96								23		65		26(2)											Multi Function Serial x 4ch (UART/CSIO/I2C/LIN Selectable)									
	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)											Multi Function Serial x 4ch (UART/CSIO/I2C/LIN Selectable)									
	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)											Multi Function Serial x 4ch (UART/CSIO/I2C/LIN Selectable)									
	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)											Multi Function Serial x 4ch (UART/CSIO/I2C/LIN Selectable)									
	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 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, 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												

FM3 Family – 32bit 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]	Timer: 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]	Serial: I²C [ch]	UART/SI [ch]	SIO [ch]	LIN/UART/SIO [ch]	Communication: CAN [ch]	USB-Host [ch]	USB-Function [ch]	LCD Controller [seg x com]	Three-phase Inverter	Note	Evaluation Device
BASIC GROUP
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																							
MB9A120L	MB9AF121K	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)				–	–	–	–	✓	Dual Timer, Real Time Clock, Unique ID	On-chip Debug (SWJ-DP)
	MB9AF121L		LQFP-64 QFN-64								19		51																							

FM3 Family – 32bit 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]	Timer	Reload Timer [ch] / PWM / PWC / PPG	Up/Down Counter [ch]	Other timers [ch]	Serial (I²C/UART/SIO/LIN)	CAN [ch]	USB-Host/Function [ch]	LCD Controller [seg x com]	Three-phase Inverter	Note	Evaluation Device
																	BASIC GROUP										
MB9A310A	MB9AF311LA	40	LQFP-64 / QFN-64	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)												
	MB9AF311NA		LQFP-100 / QFP-100 / BGA-112								16	✓	83		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)										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)										On-chip Debug (SWJ-DP/ETM)
	MB9AF312NA		LQFP-100 / QFP-100 / BGA-112								16	✓	83		16(3)												
	MB9AF314LA		LQFP-64 / QFN-64				256K	32K			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								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)										
	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)

FM3 Family – 32bit 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	10bit AD Converter [ch]	12bit AD Converter [ch(unit)]	DA Converter [bit x ch]	Timer: Output Compare/Free-Run/Input Capture	Timer: Reload/PWM/PWC/PPG	Timer: Up/Down Counter	Timer: Other timers [ch]	Serial: I²C/UART/SI/SIO/LIN-UART-SIO	Communication: CAN	USB-Host	USB-Function	LCD Controller [seg x com]	Three-phase Inverter	Note	Evaluation Device
BASIC GROUP																												
MB9A110A	MB9AF111LA	40	LQFP-64 / QFN-64	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)											On-chip Debug (SWJ-DP)
	MB9AF111NA		LQFP-100 / QFP-100 / BGA-112					16K	–	8	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				128K	16K			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)
	MB9AF112NA		LQFP-100 / QFP-100 / BGA-112				128K	16K			16	✓	83		16(3)													On-chip Debug (SWJ-DP/ETM)
	MB9AF114LA	40	LQFP-64 / QFN-64				256K		–	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)											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)											On-chip Debug (SWJ-DP/ETM)
	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)
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)

FM3 Family – 32bit Microcontrollers

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	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/SI [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
LOW-POWER GROUP																																				
MB9A150R	MB9AF154MA	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)
	MB9AF154NA		LQFP-100 / BGA-112				256K+32K	32K			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)
	MB9AF154RA		LQFP-120								24		103							Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)						Multi Function Serial x 16ch (UART/CSIO/I2C Selectable)										
	MB9AF155MA		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)
	MB9AF155NA		LQFP-100 / BGA-112				384K+32K	48K			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)
	MB9AF155RA		LQFP-120								24		103							Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)						Multi Function Serial x 16ch (UART/CSIO/I2C Selectable)										
	MB9AF156MA		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)
	MB9AF156NA		LQFP-100 / BGA-112				512K+32K	64K			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)
	MB9AF156RA		LQFP-120								24		103							Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)						Multi Function Serial x 16ch (UART/CSIO/I2C Selectable)										
MB9AB40NA	MB9AFB41LB	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)
	MB9AFB41MB		LQFP-80 / BGA-96								11		66		17(2)																		33 x 8			
	MB9AFB41NB		LQFP-100 / QFP-100 / BGA-112								16	✓	83		24(2)																		40 x 8			
	MB9AFB42LB		LQFP-64 / QFN-64				128K+32K	16K			8	–	51		12(2)																		20 x 8			
	MB9AFB42MB		LQFP-80 / BGA-96								11		66		17(2)																		33 x 8			
	MB9AFB42NB		LQFP-100 / QFP-100 / BGA-112								16	✓	83		24(2)																		40 x 8			
	MB9AFB44LB		LQFP-64 / QFN-64				256K+32K	32K			8	–	51		12(2)																		20 x 8			On-chip Debug (SWJ-DP/ETM)
	MB9AFB44MB		LQFP-80 / BGA-96								11		66		17(2)																		33 x 8			
	MB9AFB44NB		LQFP-100 / QFP-100 / BGA-112								16	✓	83		24(2)																		40 x 8			
MB9AA40NA	MB9AFA41LB	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)				–	–	–	–	–	Dual Timer, HDMI-CEC/Remote Control Reception x 2, Real Time Clock, Unique ID	On-chip Debug (SWJ-DP)
	MB9AFA41MB		LQFP-80 / BGA-96								11	✓	66		17(2)																					
	MB9AFA41NB		LQFP-100 / QFP-100 / BGA-112								16		83		24(2)																					
	MB9AFA42LB		LQFP-64 / QFN-64				128K+32K	16K			8	–	51		12(2)																					
	MB9AFA42MB		LQFP-80 / BGA-96								11		66		17(2)																					
	MB9AFA42NB		LQFP-100 / QFP-100 / BGA-112								16	✓	83		24(2)																					
	MB9AFA44LB		LQFP-64 / QFN-64				256K+32K	32K			8	–	51		12(2)																					On-chip Debug (SWJ-DP/ETM)
	MB9AFA44MB		LQFP-80 / BGA-96								11		66		17(2)																					
	MB9AFA44NB		LQFP-100 / QFP-100 / BGA-112								16	✓	83		24(2)																					

FM3 Family – 32bit 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/SI [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
LOW-POWER GROUP																																				
MB9A340NA	MB9AF341LB	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)		–	–	Dual Timer, HDMI-CEC/Remote Control Reception x 2, Real Time Clock, Unique ID	On-chip Debug (SWJ-DP)
	MB9AF341MB		LQFP-80 BGA-96								11	✓	66		17(2)																						
	MB9AF341NB		LQFP-100 QFP-100 BGA-112								16		83		24(2)																						
	MB9AF342LB		LQFP-64 QFN-64				128K +32K				8	-	51		12(2)																						
	MB9AF342MB		LQFP-80 BGA-96								11	✓	66		17(2)																						
	MB9AF342NB		LQFP-100 QFP-100 BGA-112								16		83		24(2)																						
	MB9AF344LB		LQFP-64 QFN-64				256K +32K	32K			8	-	51		12(2)																						On-chip Debug (SWJ-DP/ETM)
	MB9AF344MB		LQFP-80 BGA-96								11	✓	66		17(2)																						
	MB9AF344NB		LQFP-100 QFP-100 BGA-112								16		83		24(2)																						
MB9A140NA	MB9AF141LB	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)				–	–	–	–	–	Dual Timer, HDMI-CEC/Remote Control Reception x 2, Real Time Clock, Unique ID	On-chip Debug (SWJ-DP)
	MB9AF141MB		LQFP-80 BGA-96								11	✓	66		17(2)																						
	MB9AF141NB		LQFP-100 QFP-100 BGA-112								16		83		24(2)																						
	MB9AF142LB		LQFP-64 QFN-64				128K +32K	16K			8	-	51		12(2)																						
	MB9AF142MB		LQFP-80 BGA-96								11	✓	66		17(2)																						
	MB9AF142NB		LQFP-100 QFP-100 BGA-112								16		83		24(2)																						
	MB9AF144LB		LQFP-64 QFN-64				256K +32K	32K			8	-	51		12(2)																						On-chip Debug (SWJ-DP/ETM)
	MB9AF144MB		LQFP-80 BGA-96								11	✓	66		17(2)																						
	MB9AF144NB		LQFP-100 QFP-100 BGA-112								16		83		24(2)																						

FM3 Family – 32bit 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]	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/SI [ch]	SIO [ch]	LIN/UART/SIO [ch]	CAN [ch]	USB-Host [ch]	USB-Function [ch]				
all: **ULTRA LOW LEAK GROUP**																																				
MB9AAA0N	MB9AFAA1L	20	LQFP-64 QFN-64	1.8 to 5.5	✓	FLASH	64K	12K	–	–	8	–	52	–	9(1)	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)				–	–	–	24 x 4 or 20 x 8	✓	HDMI-CEC/Remote Control Reception x 2, Real Time Clock	On-chip Debug (SWJ-DP)
	MB9AFAA1M		LQFP-80								11		67		12(1)																		37 x 4 or 33 x 8			
	MB9AFAA1N		LQFP-100 QFP-100								16		84		16(1)																		44 x 4 or 40 x 8			
	MB9AFAA2L		LQFP-64 QFN-64				128K	16K			8		52		9(1)																		24 x 4 or 20 x 8			
	MB9AFAA2M		LQFP-80								11		67		12(1)																		37 x 4 or 33 x 8			
	MB9AFAA2N		LQFP-100 QFP-100								16		84		16(1)																		44 x 4 or 40 x 8			
MB9A1A0N	MB9AF1A1L	20	LQFP-64 QFN-64	1.8 to 5.5	✓	FLASH	64K	12K	–	–	8	–	52	–	9(1)	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	On-chip Debug (SWJ-DP)
	MB9AF1A1M		LQFP-80								11		67		12(1)																					
	MB9AF1A1N		LQFP-100 QFP-100								16		84		16(1)																					
	MB9AF1A2L		LQFP-64 QFN-64				128K	16K			8		52		9(1)																					
	MB9AF1A2M		LQFP-80								11		67		12(1)																					
	MB9AF1A2N		LQFP-100 QFP-100								16		84		16(1)																					
MB9A130LA	MB9AF131LB	20	LQFP-64 QFN-64	1.8 to 5.5	✓	FLASH	64K	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)				–	–	–	–	✓	Real Time Clock	On-chip Debug (SWJ-DP)
	MB9AF131KB		LQFP-48 QFN-48								6		37		6(1)												Multi Function Serial x 4ch (UART/CSIO/I2C Selectable, CSIO/I2C up to 3ch)										
	MB9AF132LB		LQFP-64 QFN-64				128K				8		52		8(1)												Multi Function Serial x 8ch (UART/CSIO/I2C Selectable)										
	MB9AF132KB		LQFP-48 QFN-48								6		37		6(1)												Multi Function Serial x 4ch (UART/CSIO/I2C Selectable, CSIO/I2C up to 3ch)										

FM0 + Family – 32bit 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]	Timer / Output Compare, Free-Run, Input Capture [ch]	Reload/PWM/PWC/PPG Timer [ch]	Up/Down Counter [ch]	Other timers [ch]	Serial (I²C/UART/SIO/LIN) [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	40	LQFP-48 LQFP-52 QFN-48				56K						37		8(1)													
	S6E1A12B0A	40	LQFP-32 QFN-32				88K						23		5(1)													
	S6E1A12C0A	40	LQFP-48 LQFP-52 QFN-48				88K						37		8(1)													
S6E1B8 w/security	S6E1B86GHA	40	LQFP-120	1.65 to 3.6	✓	Main Flash +Work Flash	512K + 40K	64K	–	–	24	–	102	–	24	-	Multi-Function Timer x 1units (Free-Run 3ch/Output Compare 6ch/Input Capture 4ch /PPG3ch/Waveform Generator 3ch /AD Activation Compare 6ch Selectable), PPG3ch	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)		40 SEG x 8 COM / 44 SEG x 4 COM	–	Dual Timer, Real Timer Clock, Unique ID, DSTC x 64ch, Tiny I2S, HDMI-CEC 2ch, CRC, Smart Card I/F, Chipher	On-Chip Debug (SWJ-DP/ Boundary SCAN)
	S6E1B84GHA						256K + 40K	32K					102		24													
	S6E1B86FHA		LQFP-100				512K + 40K	64K					82		23										32 SEG x 8 COM / 36 SEG x 4 COM			
	S6E1B84FHA						256K + 40K	32K					82		23													
	S6E1B86EHA		BGA-96/ LQFP-80/ WLCSP-80				512K + 40K	64K					65		16										20 SEG x 8 COM / 24 SEG x 4 COM			
	S6E1B84EHA						256K + 40K	32K					65		16													
S6E1B8	S6E1B86G0A	40	LQFP-120	1.65 to 3.6	✓	Main Flash +Work Flash	512K + 40K	64K	–	–	24	–	102	–	24	-	Multi-Function Timer x 1units (Free-Run 3ch/Output Compare 6ch/Input Capture 4ch /PPG3ch/Waveform Generator 3ch /AD Activation Compare 6ch Selectable), PPG3ch	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)		40 SEG x 8 COM / 44 SEG x 4 COM	–	Dual Timer, Real Timer Clock, Unique ID, DSTC x 64ch, Tiny I2S, HDMI-CEC 2ch, CRC, Smart Card I/F	On-Chip Debug (SWJ-DP/ Boundary SCAN)
	S6E1B84G0A						256K + 40K	32K					102		24													
	S6E1B86F0A		LQFP-100				512K + 40K	64K					82		23										32 SEG x 8 COM / 36 SEG x 4 COM			
	S6E1B84F0A						256K + 40K	32K					82		23													
	S6E1B86E0A		BGA-96/ LQFP-80/ WLCSP-80				512K + 40K	64K					65		16										20 SEG x 8 COM / 24 SEG x 4 COM			
	S6E1B84E0A						256K + 40K	32K					65		16													
S6E1B3	S6E1B36G0A	40	LQFP-120	1.65 to 3.6	✓	Main Flash +Work Flash	512K + 40K	64K	–	–	24	–	102	–	24	-	Multi-Function Timer x 1units (Free-Run 3ch/Output Compare 6ch/Input Capture 4ch /PPG3ch/Waveform Generator 3ch /AD Activation Compare 6ch Selectable), PPG3ch	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, Real Timer Clock, Unique ID, DSTC x 64ch, Tiny I2S, HDMI-CEC 2ch, CRC, Smart Card I/F	On-Chip Debug (SWJ-DP/ Boundary SCAN)
	S6E1B34G0A						256K + 40K	32K					102		24													
	S6E1B36F0A		LQFP-100				512K + 40K	64K					82		23													
	S6E1B34F0A						256K + 40K	32K					82		23													
	S6E1B36E0A		BGA-96/ LQFP-80/ WLCSP-80				512K + 40K	64K					65		16										–			
	S6E1B34E0A						256K + 40K	32K					65		16													
S6E1B1	S6E1B16G0A	40	LQFP-120	1.65 to 3.6	✓	Main Flash +Work Flash	512K + 40K	64K	–	–	24	–	102	–	24	-	Multi-Function Timer x 1units (Free-Run 3ch/Output Compare 6ch/Input Capture 4ch /PPG3ch/Waveform Generator 3ch /AD Activation Compare 6ch Selectable), PPG3ch	Base Timer x 8ch (Reload/PPG/PWM/PWC Selectable)	–	1	Multi Function Serial x 8ch (UART/CSIO/I2C Selectable)	–	–		–	–	Dual Timer, Real Timer Clock, Unique ID, DSTC x 64ch, Tiny I2S, HDMI-CEC 2ch, CRC, Smart Card I/F	On-Chip Debug (SWJ-DP/ Boundary SCAN)
	S6E1B14G0A						256K + 40K	32K					102		24													
	S6E1B16F0A		LQFP-100				512K + 40K	64K					82		23													
	S6E1B14F0A						256K + 40K	32K					82		23													
	S6E1B16E0A		LQFP-80				512K + 40K	64K					65		16										–			
	S6E1B14E0A						256K + 40K	32K					65		16													

FM0 + Family – 32bit 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/SI [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
S6E1C3	S6E1C32D0A	40	LQFP-64	1.65 to 3.6	✓	Main Flash	128K	16K	–	–	12	–	54	–	8	–		–		Base Timer x 8ch (Reload/PPG/PWM/PWC Selectable)				–	1		Multi Function Serial x 6ch (UART/CSIO/I2C Selectable)			–	1ch (USB-Host/ USB-Function Selectable)		–	–	Dual Timer, Real Timer Clock, Unique ID, DSTC×64ch, Tiny I2S, Wakeup I2C, HDMI-CEC 2ch, CRC, Smart Card I/F	On-Chip Debug (SWJ-DP)
	S6E1C31D0A						64K	12K																												
	S6E1C32C0A		LQFP-48				128K	16K			9		38							Base Timer x 5ch (Reload/PPG/PWM/PWC Selectable)																
	S6E1C31C0A						64K	12K																												
	S6E1C32B0A		WLCSP-26				128K	16K			5		20		4					Base Timer x 3ch (Reload/PPG/PWM/PWC Selectable)							Multi Function Serial×4ch (UART/CSIO/I2C Selectable)									
	S6E1C31B0A		LQFP-32				64K	12K			7		24		6												Multi Function Serial×2ch (UART/CSIO/I2C Selectable)									
	S6E1C32D0A		QFN-64				128K	16K			12		54							Base Timer x 8ch (Reload/PPG/PWM/PWC Selectable)																
	S6E1C31D0A						64K	12K							8																					
	S6E1C32C0A		QFN-48				128K	16K			9		38							Base Timer x 5ch (Reload/PPG/PWM/PWC Selectable)							Multi Function Serial×6ch (UART/CSIO/I2C Selectable)									
	S6E1C31C0A						64K	12K																												
	S6E1C32B0A		QFN-32				128K	16K			7		24							Base Timer x 3ch (Reload/PPG/PWM/PWC Selectable)							Multi Function Serial×4ch (UART/CSIO/I2C Selectable)									
	S6E1C31B0A						64K	12K																												
S6E1C1	S6E1C12D0A	40	LQFP-64	1.65 to 3.6	✓	Main Flash	128K	16K	-	-	12	-	54	-	8	-		-		Base Timer x 8ch (Reload/PPG/PWM/PWC Selectable)				-	1		Multi Function Serial x 6ch (UART/CSIO/I2C Selectable)			-	-		-	-	Dual Timer, Real Timer Clock, Unique ID, DSTC x 64ch, Tiny I2S, HDMI-CEC 2ch, CRC, Smart Card I/F	On-Chip Debug (SWJ-DP)
	S6E1C11D0A						64K	12K																												
	S6E1C12C0A		LQFP-48				128K	16K			9		38							Base Timer x 5ch (Reload/PPG/PWM/PWC Selectable)																
	S6E1C11C0A						64K	12K																												
	S6E1C12B0A		LQFP-32				128K	16K			7		24		6					Base Timer x 3ch (Reload/PPG/PWM/PWC Selectable)							Multi Function Serial×4ch (UART/CSIO/I2C Selectable)									
	S6E1C11B0A						64K	12K																												
	S6E1C12D0A		QFN-64				128K	16K			12		54							Base Timer x 8ch (Reload/PPG/PWM/PWC Selectable)							Multi Function Serial×6ch (UART/CSIO/I2C Selectable)									
	S6E1C11D0A						64K	12K							8																					
	S6E1C12C0A		QFN-48				128K	16K			9		38							Base Timer x 5ch (Reload/PPG/PWM/PWC Selectable)																
	S6E1C11C0A						64K	12K																												
	S6E1C12B0A		QFN-32				128K	16K			7		24		6					Base Timer x 3ch (Reload/PPG/PWM/PWC Selectable)							Multi Function Serial×4ch (UART/CSIO/I2C Selectable)									
	S6E1C11B0A						64K	12K																												

8FX – 8bit 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/SI [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
LCD CONTROLLERS																																			
MB95610H	MB95F613H	16	LQFP-80	2.4 to 5.5	✓	Dual Op. Flash	12K	512	-	-	8	-	40	4(1)	-	-	2	-	-	Reload Timer x 1ch + 8/16bit Compound Timer x 2ch (Interval Timer/PWM/PWC/Input Capture Selectable)							1	2	-	-	-	-	-	52 x 4 or 48 x 8	-	Clock Supervisor	On-chip Debug
	MB95F613K												41																							Low-voltage Detection Reset, Clock Supervisor	
	MB95F614H						20K	1024					40																							Clock Supervisor	
	MB95F614K												41																							Low-voltage Detection Reset, Clock Supervisor	
	MB95F616H						36K	1024					40																							Clock Supervisor	
	MB95F616K												41																							Low-voltage Detection Reset, Clock Supervisor	
MB95710M	MB95F714J	16	LQFP-80	1.8 to 5.5	✓	Dual Op. Flash	20K	512	-	-	8	-	75	-	8(1)	-	2	-	-	Reload Timer x 1ch + 8/16bit Compound Timer x 2ch (Interval Timer/PWM/PWC/Input Capture Selectable)							1	3	-	-	-	-	-	40 x 4 or 36 x 8	-	Low-voltage Detection Reset, Clock Supervisor	On-chip Debug
	MB95F714M												74																							Clock Supervisor	
	MB95F716J						36K	1K					75																							Low-voltage Detection Reset, Clock Supervisor	
	MB95F716M												74																							Clock Supervisor	
	MB95F718J						60K	2K					75																							Low-voltage Detection Reset, Clock Supervisor	
	MB95F718M												74																							Clock Supervisor	
MB95770M	MB95F774J	16	LQFP-64	1.8 to 5.5	✓	Dual Op. Flash	20K	512	-	-	8	-	59	-	8(1)	-	2	-	-	Reload Timer x 1ch + 8/16bit Compound Timer x 2ch (Interval Timer/PWM/PWC/Input Capture Selectable)							1	3	-	-	-	-	-	32 x 4 or 28 x 8	-	Low-voltage Detection Reset, Clock Supervisor	On-chip Debug
	MB95F774M												58																							Clock Supervisor	
	MB95F776J						36K	1K					59																							Low-voltage Detection Reset, Clock Supervisor	
	MB95F776M												58																							Clock Supervisor	
	MB95F778J						60K	2K					59																							Low-voltage Detection Reset, Clock Supervisor	
	MB95F778M												58																							Clock Supervisor	
INVERTER																																			
MB95630H	MB95F632H	16	LQFP-32 SH-DIP-32 QFN-32	2.4 to 5.5	✓	Dual Op. Flash	8K	256	-	-	10	-	28	8(1)	-	-	3	-	1	Reload Timer x 1ch + 8/16bit Compound Timer x 2ch (Interval Timer/PWM/PWC/Input Capture Selectable)							1	1	-	1	-	-	-	-	✓	Low-voltage Detection Reset, Multi-pulse Generator (Reload/PPG/Waveform Sequencer), Clock Supervisor	On-chip Debug
	MB95F632K												29																								
	MB95F633H						12K	512					28																								
	MB95F633K												29																								
	MB95F634H						20K						28																								
	MB95F634K							1024					29																								
	MB95F636H						36K						28																								
	MB95F636K												29																								
MB95690K	MB95F694K	16	LQFP-44 LQFP-48 LQFP-52 QFN-48	2.88 to 5.5	✓	Dual Op. Flash	20K	512	-	-	8	-	45 LQFP44 only: 41	12(1) LQFP44 only: 8(1)	-	-	3	-	1	Reload Timer x 1ch + 8/16bit Compound Timer x 2ch (Interval Timer/PWM/PWC/Input Capture Selectable)							1	1	-	1	-	-	-	-	✓	Low-voltage Detection Reset, Multi-pulse Generator (Reload/PPG/Waveform Sequencer), Clock Supervisor	On-chip Debug
	MB95F696K						36K	1K																													
	MB95F698K						60K	2K																													
STANDARD																																			
MB95560H	MB95F562H	16	SOP-20 TSSOP-20 QFN-32	2.4 to 5.5	✓	Dual Op. Flash	8K	240	-	-	6	-	16	6(1)	-	-	-	-	-	8/16bit Compound Timer x 2ch (Interval Timer/PWM/PWC/Input Capture Selectable)							-	-	-	1	-	-	-	-	-	Clock Supervisor	On-chip Debug
	MB95F562K												17																							Low-voltage Detection Reset, Clock Supervisor	
	MB95F563H						12K						16																							Clock Supervisor	
	MB95F563K							496					17																							Low-voltage Detection Reset, Clock Supervisor	
	MB95F564H						20K						16																							Clock Supervisor	
	MB95F564K												17																							Low-voltage Detection Reset, Clock Supervisor	
MB95570H	MB95F572H	16	SOP-8	2.4 to 5.5	✓	Dual Op. Flash	8K	240	-	-	2	-	4	2(1)	-	-	-	-	-	8/16bit Compound Timer x 2ch (Interval Timer/PWM/PWC/Input Capture Selectable)							-	-	-	-	-	-	-	-	-	Clock Supervisor	On-chip Debug
	MB95F572K												5																							Low-voltage Detection Reset, Clock Supervisor	
	MB95F573H						12K						4																							Clock Supervisor	
	MB95F573K							496					5																							Low-voltage Detection Reset, Clock Supervisor	
	MB95F574H						20K						4																							Clock Supervisor	
	MB95F574K												5																							Low-voltage Detection Reset, Clock Supervisor	
MB95580H	MB95F582H	16	SOP-16 TSSOP-16 QFN-32	2.4 to 5.5	✓	Dual Op. Flash	8K	240	-	-	6	-	12	5(1)	-	-	-	-	-	8/16bit Compound Timer x 2ch (Interval Timer/PWM/PWC/Input Capture Selectable)							-	-	-	1	-	-	-	-	-	Clock Supervisor	On-chip Debug
	MB95F582K												13																							Low-voltage Detection Reset, Clock Supervisor	
	MB95F583H						12K						12																							Clock Supervisor	
	MB95F583K							496					13																							Low-voltage Detection Reset, Clock Supervisor	
	MB95F584H						20K						12																							Clock Supervisor	
	MB95F584K												13																							Low-voltage Detection Reset, Clock Supervisor	

8FX – 8bit 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]	Timer 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]	Serial I²C [ch]	UART/SI [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
															STANDARD																						
MB95650L	MB95F652E	16	TSSOP-24 SOP-24 QFN-32	1.8 to 5.5	✓	Dual Op. Flash	8K	256	-	-	6	-	21	-	6(1)	-	-	8/16bit Compound Timer x 2ch (Interval Timer/PWM/PWC/ Input Capture Selectable)									2	1	-	1	-	-	-	-	-	Low-voltage Detection Reset, Clock Supervisor	On-chip Debug
	MB95F652L												20																						Clock Supervisor	
	MB95F653E						12K	512					21																						Low-voltage Detection Reset, Clock Supervisor	
	MB95F653L												20																						Clock Supervisor	
	MB95F654E						20K	1024					21																						Low-voltage Detection Reset, Clock Supervisor	
	MB95F654L												20																						Clock Supervisor	
	MB95F656E						36K						21																						Low-voltage Detection Reset, Clock Supervisor	
	MB95F656L												20																						Clock Supervisor	
MB95810K	MB95F814K	16	LQFP-64	2.88 to 5.5	✓	Dual Op. Flash	20K	512	-	-	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
	MB95F816K						36K	1K																												
	MB95F818K						60K	2K																												

Traveo Family – 32bit 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]	12bit AD Converter [ch(unit)]	12bit AD Converter with 4ch sample & hold	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/SI [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
																	Timer									**Serial**				**Communication**							
CAN/AUTOMOTIVE																																			
MB9D560	MB9DF564MA	200	TEQFP-208	1.1 to 1.3 / 4.5 to 5.5	–	Main Flash +Work Flash	(640K +64K) x2	64K x2	–	16	8	–	125	32(1)	8(2)	10bit x 2	32bitFree-Run Timer x 5ch / 32bitInput Capture x 3unit 6ch / 16bitFree-Run Timer x 20ch / 16bit Input Capture x 8unit 15ch / 16bitOutput Compare x 12unit 24ch / Waveform Generator x 4unit 24ch			16bit Base Timer x 12ch (PWM/PPG/Reload/PWC Selectable)						4	–			Multi Function Serial x 5ch (LIN/UART/SIO Selectable)	3	–	–	–	✓	ARM Cortex-R5 CAN: 64msb, RDC x 2unit, Motor vector accelaretor x 2unit. Models with A suffix on part number have no built-in FlexRay. Models with G suffix on part number have built-in FlexRay.	On-Chip Debug
	MB9DF564MG																																				
	MB9DF565MA						(896K +64K) x2	96K x2																													
	MB9DF565MG																																				
	MB9DF566MA						(1152K +64K) x2	128K x2																													
	MB9DF566MG																																				
	MB9DF564ML						(640K + 64K) x 2	64K x 2					149																						ARM Cortex-R5 Motor vector accelaretor x 2unit Models with L suffix on part number have no built-in FlexRay. Models with Q suffix on part number have built-in FlexRay.	
	MB9DF564MQ																																				
	MB9DF565ML						(896K + 64K) x 2	96K x 2																													
	MB9DF565MQ																																				
	MB9DF566ML						(1152K + 64K) x 2	128K x 2																													
	MB9DF566MQ																																				
	MB9DF564LA		TEQFP-176				(640K + 64K) x 2	64K x 2					98					32bitFree-Run Timer x 5ch / 32bitInput Capture x 3unit 6ch / 16bitFree-Run Timer x 20ch / 16bit Input Capture x 7unit 13ch / 16bitOutput Compare x 9unit 18ch / Waveform Generator x 3unit 18ch			16bit Base Timer x 6ch (PWM/PPG/Reload/PWC Selectable)										Multi Function Serial x 3ch (LIN/UART/SIO Selectable)						ARM Cortex-R5 RDC x 2unit Motor vector accelaretor x 2unit Models with A suffix on part number have no built-in FlexRay. Models with G suffix on part number have built-in FlexRay.	
	MB9DF564LG																																				
	MB9DF565LA						(896K + 64K) x 2	96K x 2																													
	MB9DF565LG																																				
	MB9DF566LA						(1152K + 64K) x 2	128K x 2																													
	MB9DF566LG																																				
	MB9DF564LL						(640K + 64K) x 2	64K x 2					122																						ARM Cortex-R5 Motor vector accelaretor x 2unit Models with L suffix on part number have no built-in FlexRay. Models with Q suffix on part number have built-in FlexRay.	
	MB9DF564LQ																																				
	MB9DF565LL						(896K + 64K) x 2	96K x 2																													
	MB9DF565LQ																																				
	MB9DF566LL						(1152K + 64K) x 2	128K x 2																													
	MB9DF566LQ																																				

Traveo Family – 32bit 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]	12bit AD Converter [ch/unit]	12bit AD Converter with 4ch sample & hold	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/SI [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																																				
S6J3110	S6J3118HA	96	TEQFP-144	4.5 to 5.25	-	Main Flash +Work Flash	576K + 48K	TC-RAM: 32KB System-RAM: 16KB Backup-RAM: 8KB	Instruction: 16 Data: 16	16	16	-	56(2)	-	-	-	12	6	12	16bit Base Timer x 30ch (PWM/PPG/Reload/PWC Selectable)					RTC x 1ch		Multi Function Serial x 4ch (LIN/UART/SIO Selectable)			CAN-FD x 1ch	-	-	-	-	ARM Cortex-R5, SHE(Secure Hardware Extension),	On-Chip Debug
	S6J3119HA						832K + 48K	TC-RAM: 48KB System-RAM: 16KB Backup-RAM: 8KB																												
	S6J311AHA						1088K + 48K	TC-RAM: 64KB System-RAM: 16KB Backup-RAM: 8KB					116																							
	S6J311BHA						1600K + 112K	192K																												
	S6J311CHA						2112K + 112K	256K																												
	S6J311DHA						3136K + 112K	320K																												
	S6J311EHA						4160K + 112K	TC-RAM: 64KB System-RAM: 256KB Backup-RAM: 64KB																												
	S6J311BJA	144	TEQFP-176				1600K + 112K	192K					64(2)															Multi Function Serial x 22ch (LIN/UART/SIO Selectable)			CAN-FD x 2ch	-	-	-	-	ARM Cortex-R5, SHE(Secure Hardware Extension),	
	S6J311CJA						2112K + 112K	256K																												
	S6J311DJA						3136K + 112K	320K																												
	S6J311EJA						4160K + 112K	TC-RAM: 64KB System-RAM: 256KB Backup-RAM: 64KB					150																							

Traveo Family – 32bit 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]	12bit AD Converter [ch(unit)]	12bit AD Converter with 4ch sample & hold	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/SI [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																																				
S6J3120	S6J3128HA	112	TEQFP-144	4.5 to 5.25	–	Main Flash +Work Flash	576K + 48K	TC-RAM: 32KB System - RAM: 16KB Backup - RAM: 8KB	Instruction: 16 Data: 16	16	16	A24/D16	112	50(2)	–	–	12	6	12	16bit Base Timer x 30ch (PWM/PPG/Reload/PWC Selectable)					2	RTC x 1ch	Multi Function Serial x 10ch (LIN/UART/SIO Selectable)				CAN-FD x 3ch	–	–	32 x 4	–	ARM Cortex-R5, SHE(Secure Hardware Extension), SMC x 4ch, Sound generator x 3ch	On-Chip Debug
	S6J3129HA	112	TEQFP-144	4.5 to 5.25	–	Main Flash +Work Flash	832K + 48K	TC-RAM: 48KB System - RAM: 16KB Backup - RAM: 8KB	Instruction: 16 Data: 16	16	16	A24/D16	112	50(2)	–	–	12	6	12	16bit Base Timer x 30ch (PWM/PPG/Reload/PWC Selectable)					2	RTC x 1ch	Multi Function Serial x 10ch (LIN/UART/SIO Selectable)				CAN-FD x 3ch	–	–	32 x 4	–		
	S6J312AHA						1088K +112K	TC-RAM: 64KB System-RAM: 16KB Backup-RAM: 8KB																													
S6J3200	S6J32AAKS, S6J32AAKU, S6J32AALS	160	TEQFP-208	1.1 to 1.3 3.0 to 3.6 4.5 to 5.5	✓	Main Flash +Work Flash	1088K + 112K	TC-RAM: 64KB System - RAM: 128KB Backup - RAM: 16KB VRAM: 1024KB	Instruction: 16 Data: 16	16	16	-	120	46(1)	-	-	24	12	24	Reload Timer x 14ch 16bit Base Timer x 24ch (PWM/PPG/Reload/PWC Selectable)					2	RTC x 1ch	Multi Function Serial x 12ch (LIN/UART/SIO/I2C Selectable)				CAN-FD x 4ch	-	-	30 x 4	-	ARM Cortex-R5, SHE(Secure Hardware Extension), SMC x 6ch, Sound generator x 4ch, 2D Graphic Engine, Display Output x 1ch	On-Chip Debug
	S6J32AALU		TEQFP-216 (0.4mm pitch)										128	50(1)																				32 x 4			
	S6J32BAKS, S6J32BAKU, S6J32BALS		TEQFP-208										120	46(1)																				30 x 4		ARM Cortex-R5, SHE(Secure Hardware Extension), SMC x 6ch, Sound generator x 4ch, 2D Graphic Engine, Display Output x 1ch, Sound system,	
	S6J32BALU		TEQFP-216 (0.4mm pitch)										128	50(1)																				32 x 4			
	S6J32CAKS, S6J32CAKU, S6J32CALS		TEQFP-208										120	46(1)																				30 x 4		ARM Cortex-R5, SHE(Secure Hardware Extension), SMC x 6ch, Sound generator x 4ch, 2D+3D Graphic Engine, Display Output x 1ch,	
	S6J32CALU		TEQFP-216 (0.4mm pitch)										128	50(1)																				32 x 4			
	S6J32DAKS, S6J32DAKU, S6J32DALS		TEQFP-208										120	46(1)																				30 x 4		ARM Cortex-R5, SHE(Secure Hardware Extension), SMC x 6ch, Sound generator x 4ch, 2D+3D Graphic Engine, Display Output x 1ch, Sound system,	
	S6J32DALU		TEQFP-216 (0.4mm pitch)										128	50(1)																				32 x 4			

Traveo Family – 32bit 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]	12bit AD Converter [ch/unit]	12bit AD Converter with 4ch sample & hold	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/SI [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																																				
S6J3200	S6J323CKS / S6J323CKU / S6J323CLS	240	TEQFP-208	1.1 to 1.3 / 3.0 to 3.6 / 4.5 to 5.5	✓	Main Flash +Work Flash	2112K + 112K	TC-RAM: 128KB System-RAM: 128KB Backup-RAM: 16KB VRAM: 2048KB	Instruction: 16 Data: 16	16	16	-	120	46(1)	-	-	24	12	24	Reload Timer x 14ch 16bit Base Timer x 24ch (PWM/PPG/Reload/PWC Selectable)				2	RTC x 1ch		Multi Function Serial x 12ch (LIN/UART/SIO/I2C Selectable)			CAN-FD x 4ch	-	-	30 x 4	-	ARM Cortex-R5, Ethernet AVB, Media-LB, SHE(Secure Hardware Extension), SMC x 6ch, Sound generator x 4ch, 2D Graphic Engine, Display Output x 2ch,	On-Chip Debug
	S6J323CLU		TEQFP-216 (0.4mm pitch)										128	50(1)																			32 x 4			
	S6J324CKS / S6J324CKU / S6J324CLS		TEQFP-208										120	46(1)																			30 x 4		ARM Cortex-R5, Ethernet AVB, Media-LB, SHE(Secure Hardware Extension), SMC x 6ch, Sound generator x 4ch, 2D Graphic Engine, Display Output x 2ch, Sound system,	
	S6J324CLU		TEQFP-216 (0.4mm pitch)										128	50(1)																			32 x 4			
	S6J325CKS / S6J325CKU / S6J325CLS		TEQFP-208										120	46(1)																			30 x 4		ARM Cortex-R5, Ethernet AVB, Media-LB, SHE(Secure Hardware Extension), SMC x 6ch, Sound generator x 4ch, 2D+3D Graphic Engine, Display Output x 2ch,	
	S6J325CLU		TEQFP-216 (0.4mm pitch)										128	50(1)																			32 x 4			
	S6J326CKS / S6J326CKU / S6J326CLS		TEQFP-208										120	46(1)																			30 x 4		ARM Cortex-R5, Ethernet AVB, Media-LB, SHE(Secure Hardware Extension), SMC x 6ch, Sound generator x 4ch, 2D+3D Graphic Engine, Display Output x 2ch, FPD-Link, Sound system,	
	S6J326CLU		TEQFP-216 (0.4mm pitch)										128	50(1)																			32 x 4			
	S6J327CKS / S6J327CKU / S6J327CLS		TEQFP-208										120	46(1)																			30 x 4		ARM Cortex-R5, Ethernet AVB, Media-LB, SHE(Secure Hardware Extension) SMC x 6ch, Sound generator x 4ch, 2D Graphic Engine, Display Output x 2ch, Sound system	
	S6J327CLU		TEQFP-216 (0.4mm pitch)										128	50(1)																			32 x 4			
	S6J328CKS / S6J328CKU / S6J328CLS		TEQFP-208										120	46(1)																			30 x 4		ARM Cortex-R5, Ethernet AVB, Media-LB, SHE(Secure Hardware Extension), SMC x 6ch, Sound generator x 4ch, 2D+3D Graphic Engine, Display Output x 2ch, FPD-Link, Sound system	
	S6J328CLU		TEQFP-216 (0.4mm pitch)										128	50(1)																			32 x 4			

FCR4 Family – 32bit 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/SI [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
HYBRID AUTOMOTIVE INSTRUMENTS CLUSTER																																				
MB9DF125	MB9DF125PMC	128	LQFP-176	1.1 to 1.3 / 3.0 to 5.5	✓	FLASH	1088	128	8	8	32	-	123	50(1)	–	–	8	8	8	10	–	–	24	2	-	1	2	3	2	2	–	–	–	–	ARM Cortex R4, SHE (Secure Hardware Extension), Real Time Clock, Stepper Motor Controller (SMC): 4 ch, Data Flash: 48KB, Windows Wartchdog, Clock supervisor, Sound Generator, I2S: 2 ch, Quad SPI Flash Interface:1 ch, NMI (intern/extern): 32/1 ch, CRC Hardware Module: 1 ch, Protection Unit: MPU, PPU, TPU, various Power Down modes	On-chip Debug
	MB9DF125EPMC																																		ARM Cortex R4, SHE (Secure Hardware Extension), Real Time Clock, Stepper Motor Controller (SMC): 6 ch, Data Flash: 48KB, Windows Wartchdog, Clock superviser, Sound Generator, I2S: 2 ch, Quad SPI Flash Interface:1 ch, NMI (intern/extern): 32/1 ch, CRC Hardware Module: 1 ch, Protection Unit: MPU, PPU, TPU, various Power Down modes	On-chip Debug
MB9DF126	MB9DF126BPMC	128	LQFP-176	1.1 to 1.3 / 3.0 to 5.5	✓	FLASH	2176	208	16	8	32	-	110	50(1)	–	–	8	8	8	10	–	–	24	2	-	1	2	3	2	3	–	–	–	–	ARM Cortex R4, APIX Remote handler with 2 ch AIC (APIX Inter Connect), APIX1 Phy: 1 ch, Real Time Clock, Stepper Motor Controller (SMC): 6 ch, Data Flash: 64KB, Windows Wartchdog, Clock superviser, Sound Generator, I2S: 2 ch, Quad SPI Flash Interface: 1 ch, NMI (intern/extern): 32/1 ch, CRC Hardware Module: 1 ch, Protection Unit: MPU, PPU, TPU, various Power Down modes	On-chip Debug
MB9EF226	MB9EF226PMC	128	LQFP-176	1.1 to 1.3 / 3.0 to 5.5	✓	FLASH	2176	128	16	8	32	-	117	50(1)	–	–	8	8	8	10	–	–	24	2	-	1	2	3	2	2	–	–	–	–	ARM Cortex R4, 2D Graphics Engine: scaler, color palette, gamma correction, blending, raster operation, various alpha blending modes, run-length decoding, hor/ver flip and rotation, affine transformations, Embedded Video-RAM: 1MB, TFT Output Interface: RGB888/RSDS Output, SHE (Secure Hardware Extension), Real Time Clock, Stepper Motor Controller (SMC): 4 ch, Data Flash: 48KB, Windows Wartchdog, Clock superviser, Sound Generator, I2S: 2 ch, Quad SPI Flash Interface: 2ch(1 ch for MCU and 1 ch for Graphic), NMI (intern/extern): 32/1 ch, CRC Hardware Module: 1 ch, Protection Unit: MPU, PPU, TPU, various Power Down modes	On-chip Debug
	MB9EF226EPMC	128	LQFP-176	1.1 to 1.3 / 3.0 to 5.5	✓	FLASH	2176	128	16	8	32	-	117	50(1)	–	–	8	8	8	10	–	–	24	2	-	1	2	3	2	2	–	–	–	–	ARM Cortex R4, 2D Graphics Engine: scaler, color palette, gamma correction, blending, raster operation, various alpha blending modes, run-length decoding, hor/ver flip and rotation, affine transformations, Embedded Video-RAM: 1MB, TFT Output Interface: RGB888/RSDS Output, SHE (Secure Hardware Extension), Real Time Clock, Stepper Motor Controller (SMC): 6 ch, Data Flash: 48KB, Windows Wartchdog, Clock superviser, Sound Generator, I2S: 2 ch, Quad SPI Flash Interface2 ch(1 ch for MCU and 1 ch for Graphic), NMI (intern/extern): 32/1 ch, MediaLB (3 wire): 1 ch, CRC Hardware Module: 1 ch, Protection Unit: MPU, PPU, TPU, various Power Down modes	On-chip Debug

FR Family – 32bit 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/SI [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																																				
MB91520	MB91F522B	80	LQFP-64	2.7 to 5.5	* See "part number suffix" in Note	Main Flash +Work Flash	320K+64K	56K	–	16	16	–	44	13(1)		8bit x 1	16bit x 6 32bit x 4		16bit x 4 32bit x 5	Reload Timer x 7ch + PPG Timer x 21ch (Reload/PPG/PWM/PWC Selectable)						2	–			Multi Function Serial x 8ch (LIN/UART/SIO/I2C Selectable)	3	–	–	–	✓	LIN, FPU, MPU, Tuning RAM 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 Details of part number suffix	On-chip Debug
	MB91F523B						448K+64K	56K						13(1)																							
	MB91F524B						576K+64K	72K																													
	MB91F525B						832K+64K	104K																													
	MB91F526B						1088K+64K	136K																													
	MB91F522D		LQFP-80				320K+64K	56K					56	16(1)						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	56K						16(1)				16bit x 3 32bit x 2																			
	MB91F524D						576K+64K	72K																													
	MB91F525D						832K+64K	104K																													
	MB91F526D						1088K+64K	136K																													
	MB91F522F		LQFP-100				320K+64K	56K					76	16(1)		8bit x 2		16bit x 6 32bit x 6	16bit x 3 32bit x 3	16bit x 4 32bit x 6	Reload Timer x 8ch + PPG Timer x 34ch + Base Timer x 1ch (Reload/PPG/PWM/PWC Selectable)									Multi Function Serial x 12ch (LIN/UART/SIO/I2C Selectable)							
	MB91F523F						448K+64K	56K						21(1)																							
	MB91F524F						576K+64K	72K																													
	MB91F525F						832K+64K	104K																													
	MB91F526F						1088K+64K	136K																													
	MB91F522J		LQFP-120				320K+64K	56K					96	16(1)						Reload Timer x 8ch + PPG Timer x 38ch + Base Timer x 2ch (Reloa d/PPG/PWM/ PWC Selectable)																	
	MB91F523J						448K+64K	56K						26(1)																							
	MB91F524J						576K+64K	72K																													
	MB91F525J						832K+64K	104K																													
	MB91F526J						1088K+64K	136K																													
	MB91F522K	80	LQFP-144				320K+64K	56K					120	16(1)						Reload Timer x 8ch + PPG Timer x 44ch + Base Timer x 2ch (Reload/PPG/PWC Selectable)								3	Multi Function Serial x 12ch (LIN/UART/SIO/I2C Selectable)							
	MB91F523K						448K+64K	56K						32(1)																							
	MB91F524K						576K+64K	72K																													
	MB91F525K						832K+64K	104K																													
	MB91F526K						1088K+64K	136K																													
	MB91F527R	80	LQFP-144 TEQFP-144				1600K+64K	192+16K		16			115					16bit x 6 32bit x 6	16bit x 3 32bit x 3	16bit x 4 32bit x 6								2	6							
	MB91F528R						2112K+64K	320K;16K																													
	MB91F522L		LQFP-176	2.7 to 5.5	* See "part number suffix" in Note	Main Flash +Work Flash	320K+64K	56K					152	16(1)		8bit x 2				Reload Timer x 8ch + PPG Timer x 48ch + Base Timer x 2ch (Reload/PPG/PWM/PWC Selectable)								3	Multi Function Serial x 12ch (LIN/UART/SIO/I2C Selectable)							
	MB91F523L						448K+64K	56K						32(1)																							
	MB91F524L						576K+64K	72K		16		✓																									✓
	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	128	LQFP-208 TEQFP-208				1600K+64K	192+16K					177	32(1)						Reload Timer x 8ch + PPG Timer x 64ch + Base Timer x 2ch (Reload/PPG/PWM/PWC Selectable)								6	Multi Function Serial x 20ch (LIN/UART/SIO/I2C Selectable)							
	MB91F528M						2112K+64K	320K;16K						32(1)				16bit x 6 32bit x 8	16bit x 3 32bit x 8	16bit x 4 32bit x 8								4								
	MB91F527Y		BGA-416				1600K+64K	192+16K					219	24						Reload Timer x 8ch + PPG Timer x 88ch + Base Timer x 2ch (Reload/PPG/PWM/PWC Selectable)								6								
	MB91F528Y						2112K+64K	320K;16K																													
MB91550	MB91F552	80	LQFP-64	4.5 to 5.5	–	Main Flash +Work Flash	192K+64K	24K	–	8	4	–	30	8(1) 4ch S/ H(1)		–	–		1	1	Reload Timer ×5ch + PWM Timer ×6ch(2ch×3 pairs) + PWC Timer ×2ch + Base Timer ×4ch (Reload/PPG/PWM/PWC Selectable)				–	–	Multi Function Serial×3ch (UART/SIO/LIN Selectable)	1	–	–	–	–	Comparator: 3ch, Slope Compensation: 1ch	On-Chip Debug

Details of part number suffix:

	Dual clock system	
	xWC	xJC
CSV initial value	ON	OFF

	Single clock system	
	xSC	xHC
CSV initial value	ON	OFF

FR Family – 32bit 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]	Timer Output Compare [ch]	Timer Free-Run Timer [ch]	Timer Input Capture [ch]	Timer Reload/PWM/PWC/PPG	Up/Down Counter [ch]	Other timers [ch]	Serial I²C [ch]	Serial UART/SI [ch]	Serial SIO [ch]	Serial LIN/UART/SIO [ch]	CAN [ch]	USB-Host [ch]	USB-Function [ch]	LCD Controller [seg x con]	Three-phase Inverter	Note	Evaluation Device
all: CAN/AUTOMOTIVE																																	

CAN/AUTOMOTIVE

Series Name	Product Name	Max Clock	Package	V	Sub Clock	Memory	ROM	RAM	Cache	DMAC	Ext.Int	Ext Bus	Max I/O	10bit AD	12bit AD	DA Conv	Timer details	Output Compare	Free-Run	Input Capture	Serial	I²C	CAN	LCD	3-phase	Note	Eval
MB91570	MB91F575B	80	LQFP-144	4.5 to 5.5	✓	Main Flash +Work Flash	576K +64K	48K	–	16	16	✓	109	40(1)	–	8bit x 2	Reload Timer x 7ch (3ch for Periodic Timer Interrupt Occurrence) + PPG Timer x 24ch + Base Timer x 2ch (Reload/PPG/PWM/PWC Selectable)	12	6	12	Multi Function Serial x 4ch (LIN/UART/SIO/I2C Selectable. However, I2C only supports ch0/ch1)	2	6	32 x 4	–	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	On-chip Debug
	MB91F575BS				–								111														
	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														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
	MB91F578CM		LQFP-208		✓		1600K +64K	112K					157														
	MB91F578CSM				–								159														
	MB91F578CHM				✓								157														
	MB91F578CHSM				–								159														
	MB91F579CM				✓		2112K +64K	144K					157														
	MB91F579CSM				–								159														
	MB91F579CHM				✓								157														
	MB91F579CHSM				–								159														
MB91580	MB91F583ASG	128	LQFP-64	4.5 to 5.5	–	Main Flash +Work Flash	320K +64K	32K	–	8	8	–	44	–	8(1) 7(1) 2(1)	10bit x 1	Reload Timer x 4ch + PPG Timer x 6ch + Base Timer x 2ch (Reload/PPG/PWM/PWC Selectable)	7	6	4	Multi Function Serial x 2ch (LIN/UART/SIO/I2C Selectable)	2	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
	MB91F583ASH																									
	MB91F583ASJ																									
	MB91F583ASK																									
	MB91F584ASG						448K +64K	48K																		
	MB91F584ASH																									
	MB91F584ASJ																									
	MB91F584ASK																									
	MB91F585ASG						576K +64K	48K																		
	MB91F585ASH																									
	MB91F585ASJ																									
	MB91F585ASK																									
	MB91F583AMG	128	LQFP-100	4.5 to 5.5	–	Main Flash +Work Flash	320K +64K	32K	–	8	8	–	76	–	8(1) 7(1) 8(1)	10bit x 1	Reload Timer x 4ch + PPG Timer x 6ch + Base Timer x 2ch (Reload/PPG/PWM/PWC Selectable)	7	6	4	Multi Function Serial x 4ch (LIN/UART/SIO/I2C Selectable)	2	2	–	✓	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
	MB91F583AMH																									
	MB91F583AMJ																									
	MB91F583AMK																									
	MB91F584AMG						448K +64K	48K																		
	MB91F584AMH																									
	MB91F584AMJ																									
	MB91F584AMK																									
	MB91F585AMG						576K +64K	48K																		
	MB91F585AMH																									
	MB91F585AMJ																									
	MB91F585AMK																									
	MB91F585LA	128	LQFP-144	4.5 to 5.5	–	Main Flash +Work Flash	576K +64K	64K	–	8	8	–	98	–	8(1) 8(1) 8(1)	–	Reload Timer x 4ch + PPG Timer x 24ch + Base Timer x 2ch (Reload/PPG/PWM/PWC Selectable)	12		8	Multi Function Serial x 5ch (LIN/UART/SIO/I2C Selectable)	2	3	–	✓	CAN: 64Msg-buffer, LIN, FPU, MPU, FlexRay. Models with B or D suffix on part number have no built-in RDC. Models with A or B 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
	MB91F585LB												✓ 111			10bit x 1										
	MB91F585LC												– 98			–										
	MB91F585LD												✓ 111			10bit x 1										
	MB91F586LA						832K +64K	64K					– 98			–										
	MB91F586LB												✓ 111			10bit x 1										
	MB91F586LC												– 98			–										
	MB91F586LD												✓ 111			10bit x 1										
	MB91F587LA						1088K +64K	128K					– 98			–										
	MB91F587LB												✓ 111			10bit x 1										
	MB91F587LC												– 98			–										
	MB91F587LD												✓ 111			10bit x 1										

FR Family – 32bit Microcontrollers

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 Converter [ch/unit]	12bit AD Converter [ch/unit]	DA Converter [bit x ch]	Output Compare [ch]	Free-Run Timer [ch]	Input Capture [ch]	Reload/PWM/PWC/PPG Timer	Up/Down Counter [ch]	Other timers [ch]	I²C [ch]	UART/SI · SIO · LIN/UART/SIO	CAN [ch]	USB-Host [ch]	USB-Function [ch]	LCD Controller	Three-phase Inverter	Note	Evaluation Device
																	CAN/AUTOMOTIVE														
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				–								63																			
	MB91F591BH				✓								61																			
	MB91F591BHS				–								63																			
	MB91F592B				✓								61																			
	MB91F592BS				–								63																			
	MB91F592BH				✓								61																			
	MB91F592BHS				–								63																			
	MB91F594B				✓		1088K +64K	72K					61																			
	MB91F594BS				–								63																			
	MB91F594BH				✓								61																			
	MB91F594BHS				–								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				–								63																			
	MB91F59ACH				✓								61																			
	MB91F59ACHS				–								63																			
	MB91F59BC				✓		2112K +64K	264K					61																			
	MB91F59BCS				–								63																			
	MB91F59BCH				✓								61																			
	MB91F59BCHS				–								63																			

F²MC-16FX – 16bit Microcontrollers

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	DA Conv	Output Compare	Free-Run Timer [ch]	Input Capture [ch]	Reload Timer [ch]	PWM/PWC/PPG Timer	Up/Down Counter	Other timers	I²C [ch]	UART/SI [ch]	SIO [ch]	LIN/UART/SIO [ch]	CAN [ch]	USB-Host [ch]	USB-Function [ch]	LCD	Three-phase Inverter	Note	Evaluation Device
																				AUTOMOTIVE															
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															3						
	MB96F315AW				✓								34																					
	MB96F315RS				–								36															1						
	MB96F315RW				✓								34																					
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																					
	MB96F326RS				–								66															2						
	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				–								124	40(1)																				
	MB96F338RW				✓			544K	32K					122																					
	MB96F338US				–								120	36(1)															3		1ch (USB-Host/USB-Function Selectable)				
	MB96F338UW				✓								118																					

F²MC-16FX – 16bit 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/SI [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																																				
MB96340	MB96345RS	56	LQFP-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
	MB96345RW				✓	MASK	160K	8K					80																	2						
	MB96346RS				–	MASK	288K	16K					82																							
	MB96346RW				✓	MASK	288K	16K					80																							
	MB96F345DS	40			–	FLASH	160K+64K	8K					82																	1						
	MB96F345DW				✓	FLASH	160K+64K	8K					80																							
	MB96F346AS				–	FLASH	288K	16K					82																	-						
	MB96F346AW				✓	FLASH	288K	16K					80																							
	MB96F346RS				–	FLASH	288K	16K					82																	2						
	MB96F346RW	56			✓	FLASH	288K	16K					80																							
	MB96F347AS				–	FLASH	416K	16K					82																	-						
	MB96F347AW				✓	FLASH	416K	16K					80																							
	MB96F347RS				–	FLASH	416K	16K					82																	2						
	MB96F347RW				✓	FLASH	416K	16K					80																							
	MB96F348AS				–	FLASH	544K	24K					82																	-						
	MB96F348AW				✓	FLASH	544K	24K					80																							
	MB96F348RS				–	FLASH	544K	24K					82																	2						
	MB96F348RW				✓	FLASH	544K	24K					80																							
	MB96F348HS				–	FLASH	544K+32K	24K					82																	4						
	MB96F348HW				✓	FLASH	544K+32K	24K					80																							
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				✓	FLASH	96K	8K					49																							
	MB96F353RS				–	FLASH	96K	8K					51																							
	MB96F353RW				✓	FLASH	96K	8K					49																							
	MB96F355AS				–	FLASH	160K	8K					51																							
	MB96F355AW				✓	FLASH	160K	8K					49																							
	MB96F355RS				–	FLASH	160K	8K					51																							
	MB96F355RW				✓	FLASH	160K	8K					49																							
	MB96F356AS				–	FLASH	288K	12K					51																							
	MB96F356AW				✓	FLASH	288K	12K					49																							
	MB96F356RS				–	FLASH	288K	12K					51																							
	MB96F356RW				✓	FLASH	288K	12K					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				✓	FLASH	544K+32K	28K					118																							
	MB96F379RS				–	FLASH	832K	32K					120																							
	MB96F379RW				✓	FLASH	832K	32K					118																							
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				✓	MASK	128K	6K					94																							
	MB96385RS				–	MASK	160K	8K					96																							
	MB96385RW				✓	MASK	160K	8K					94																							
	MB96F385RS	40			–	FLASH	160K	6K					96																							
	MB96F385RW				✓	FLASH	160K	6K					94																							
	MB96F386RS	56			–	FLASH	288K	16K					96																							
	MB96F386RW				✓	FLASH	288K	16K					94																							
	MB96F387RS				–	FLASH	416K	16K					96																	2						
	MB96F387RW				✓	FLASH	416K	16K					94																							
	MB96F388HS	40			–	FLASH	544K+32K	28K					96																							
	MB96F388HW				✓	FLASH	544K+32K	28K					94																							
	MB96F389RS				–	FLASH	544K+288K	32K					96																							
	MB96F389RW				✓	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				✓	MASK	96K	5K					74																							
	MB96395RS				–	MASK	160K	8K					76																							
	MB96395RW				✓	MASK	160K	8K					74																							
	MB96F395RS				–	FLASH	160K	8K					76																							
	MB96F395RW				✓	FLASH	160K	8K					74																							

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/SI [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																																			
MB96610	MB96F612A / MB96F612R / MB96F613A / MB96F613R / MB96F615A / MB96F615R	32	LQFP-48	2.7 to 5.5	✓	Dual Op. Flash	32.5K+32K / 64.5K+32K / 128.5K+32K	4K / 10K	–	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	–/1	–	–	–	–	Option without CAN	On-chip Debug
MB96620	MB96F622A / MB96F622R / MB96F623A / MB96F623R / MB96F625A / MB96F625R	32	LQFP-64	2.7 to 5.5	✓	Dual Op. Flash	32.5K+32K / 64.5K+32K / 128.5K+32K	4K / 10K	–	2	13	–	52 (Single clock) 50 (Dual clock)	21(1)	–	–	6	4	4 +2 (Dedicated for LIN)	2 +1 (Dedicated for PPG)	–	–	8bit x 16 16bit x 8	–	QPRC x 2	1	–	–	3	–/1	–	–	–	–	Option without CAN	On-chip Debug
MB96630	MB96F633A / MB96F633R / MB96F635A / MB96F635R / MB96F636R / MB96F637R	32	LQFP-80	2.7 to 5.5	✓	Dual Op. Flash	64.5K+32K / 128.5K+32K / 256.5K+32K / 384.5K+32K	10K / 16K / 24K / 28K	–	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	–/1	–	–	–	–	Option without CAN	On-chip Debug
MB96640	MB96F643A / MB96F643R / MB96F645A / MB96F645R / MB96F646R / MB96F647R	32	LQFP-100	2.7 to 5.5	✓	Dual Op. Flash	64.5K+32K / 128.5K+32K / 256.5K+32K / 384.5K+32K	10K / 16K / 24K / 28K	–	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	–/1	–	–	–	–	Option without CAN	On-chip Debug
MB96650	MB96F653A / MB96F653R / MB96F655A / MB96F655R / MB96F656R / MB96F657R	32	LQFP-120	2.7 to 5.5	✓	Dual Op. Flash	64.5K+32K / 128.5K+32K / 256.5K+32K / 384.5K+32K	10K / 16K / 24K / 28K	–	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	–/1	–	–	–	–	Option without CAN	On-chip Debug
MB96670	MB96F673A / MB96F673R / MB96F675A / MB96F675R	32	LQFP-64	2.7 to 5.5	✓	Dual Op. Flash	64.5K+32K / 128.5K+32K	4K	-	2	7	-	50 (Single clock) 48 (Dual clock)	12(1)	-	-	-	2	4	3	-	-	8bit x 8 16bit x 4	-	-	1	-	-	2	–/1	-	-	24 x 4	-	SMC x 2ch Sound generator Option without CAN	On-chip 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	-	-	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	-	-	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