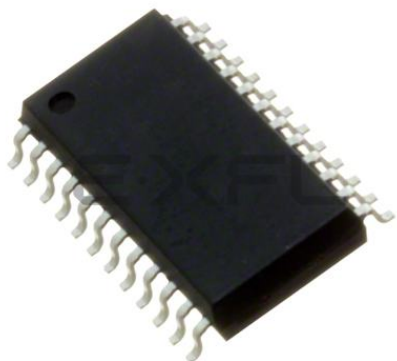




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What is "[Embedded - Microcontrollers](#)"?

"[Embedded - Microcontrollers](#)" refer to small, integrated circuits designed to perform specific tasks within larger systems. These microcontrollers are essentially compact computers on a single chip, containing a processor core, memory, and programmable input/output peripherals. They are called "embedded" because they are embedded within electronic devices to control various functions, rather than serving as standalone computers. Microcontrollers are crucial in modern electronics, providing the intelligence and control needed for a wide range of applications.

Applications of "[Embedded - Microcontrollers](#)"

Details

Product Status	Obsolete
Core Processor	F ² MC-8FX
Core Size	8-Bit
Speed	16MHz
Connectivity	I ² C, LINbus, SIO, UART/USART
Peripherals	LVD, POR, PWM, WDT
Number of I/O	21
Program Memory Size	8KB (8K x 8)
Program Memory Type	FLASH
EEPROM Size	-
RAM Size	256 x 8
Voltage - Supply (Vcc/Vdd)	1.8V ~ 5.5V
Data Converters	A/D 6x8/12b
Oscillator Type	External
Operating Temperature	-40°C ~ 85°C (TA)
Mounting Type	Surface Mount
Package / Case	24-SOIC (0.295", 7.50mm Width)
Supplier Device Package	24-SOP
Purchase URL	https://www.e-xfl.com/product-detail/infineon-technologies/mb95f652enpf-g-sne2

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), I²C 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	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]	I ² C [ch]	UART/ISI [ch]	SIO [ch]	LIN/UART/SIO [ch]	CAN [ch]	USB-Host [ch]				
S6E2C1-E	S6E2C10H2A	200	LQFP-144	2.7 to 5.5	✓	-	0M	256K	-	8	32	✓	120	-	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 Time Clock, Unique ID, DSTC x 256ch, SDC, I2S 1ch(without 144pin), HDMI-CEC 2ch, High Speed Quad SPI x1(without 144pin), Programmable CRC, Chipper	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	✓	80	-	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																																
	MB9BF566R		LQFP-120 BGA-144																																
	MB9BF567M		LQFP-80																																
	MB9BF567N		LQFP-100 QFP-100 BGA-112				768K +32K	96K							80													24(3)							
	MB9BF567R		LQFP-120 BGA-144																																
	MB9BF568M		LQFP-80																																
	MB9BF568N		LQFP-100 QFP-100 BGA-112				1024K +32K	128K							80													24(3)							
	MB9BF568R		LQFP-120 BGA-144																																
MB9B460R	MB9BF466M	160	LQFP-80	2.7 to 5.5	✓	Main Flash +Work Flash	512K +32K	64K	-	8	16	✓	63	-	16(3)	12 x 2	Multi-Function Timer x 2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable)	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 2	1	Multi Function Serial x 8ch (UART/CSIO/I2C/LIN Selectable)	2	-	-	-	✓	CAN: 32Msg-buffer, Dual Timer, Real Time Clock, DSTC x 128ch, Unique ID, SD Card I/F	On-chip Debug (SWJ-DP/ETM)							
	MB9BF466N		LQFP-100 QFP-100 BGA-112																																
	MB9BF466R		LQFP-120 BGA-144																																
	MB9BF467M		LQFP-80																																
	MB9BF467N	LQFP-100 QFP-100 BGA-112	160	160	✓	Main Flash +Work Flash	1024K +32K	128K					80		24(3)																				
	MB9BF467R	LQFP-120 BGA-144																																	
	MB9BF468M	LQFP-80																																	
	MB9BF468N	LQFP-100 QFP-100 BGA-112																																	
MB9BF468R	LQFP-120 BGA-144																																		
MB9B360R	MB9BF366M	160	LQFP-80	2.7 to 5.5	✓	Main Flash +Work Flash	512K +32K	64K	-	8	16	✓	63	-	16(3)	12 x 2	Multi-Function Timer x 2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/ PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 6ch Selectable)	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	QPRC x 2	1	Multi Function Serial x 8ch (UART/CSIO/I ² C/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																																
	MB9BF366R		LQFP-120 BGA-144																																
	MB9BF367M		LQFP-80																																
	MB9BF367N		LQFP-100 QFP-100 BGA-112				768K +32K	96K							80													24(3)							
	MB9BF367R		LQFP-120 BGA-144																																
	MB9BF368M		LQFP-80																																
	MB9BF368N		LQFP-100 QFP-100 BGA-112				1024K +32K	128K							80													24(3)							
	MB9BF368R		LQFP-120 BGA-144																																

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]	I ² C [ch]	UART/SI [ch]	SIO [ch]	LIN/UART/SIO [ch]	CAN [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/I ² C/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																															
	MB9BF166R		LQFP-120 BGA-144																															
	MB9BF167M		LQFP-80				768K +32K	96K					63	16(3)																				
	MB9BF167N		LQFP-100 QFP-100 BGA-112																															
	MB9BF167R		LQFP-120 BGA-144																															
	MB9BF168M		LQFP-80				1024K +32K	128K					63	16(3)																				
	MB9BF168N		LQFP-100 QFP-100 BGA-112																															
	MB9BF168R		LQFP-120 BGA-144																															
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/I ² C/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																															
	MB9BF565K		LQFP-48 QFN-48				384K +32K	48K			15	-	33														8(2)							
	MB9BF565L		LQFP-64 QFN-64																															
	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/I ² C/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																															

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]	I ² C [ch]	UART/SI [ch]	SIO [ch]	LIN/UART/SIO [ch]	CAN [ch]	USB-Host [ch]	USB-Function [ch]																	
MB9B460L	MB9BF464K	160	LQFP-48 QFN-48	2.7 to 5.5	✓	Main Flash +Work Flash	256K +32K	32K	-	8	-	-	-	-	12 x 2	12	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																																														
	MB9BF465K		LQFP-48 QFN-48				384K +32K	48K																					-	8	-	-	-	-	-	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)	
	MB9BF465L		LQFP-64 QFN-64																																														
	MB9BF466K		LQFP-48 QFN-48																																														512K +32K
	MB9BF466L		LQFP-64 QFN-64																																														

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]	I ² C [ch]	UART/SI [ch]	SIO [ch]	LIN/UART/SIO [ch]	CAN [ch]	USB-Host [ch]				
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	-	-	-	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												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												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				384K +32K	48K							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												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												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	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			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]	I ² C [ch]	UART/SI [ch]	SIO [ch]	LIN/UART/SIO [ch]	CAN [ch]	USB-Host [ch]			USB-Function [ch]	LCD Controller [seg x com]
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 1 unit (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)	1	QPRC x 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																QPRC x 2								Multi Function Serial x 8ch (UART/CSIO/I2C/LIN Selectable)								
	MB9BF321M		LQFP-80 BGA-96																QPRC x 1								Multi Function Serial x 4ch (UART/CSIO/I2C/LIN Selectable)								
	MB9BF322K		LQFP-48 QFN-48				128K +32K	32K											14	35							14(2)	QPRC x 1	Multi Function Serial x 4ch (UART/CSIO/I2C/LIN Selectable)						
	MB9BF322L		LQFP-64 QFN-64																											QPRC x 2	Multi Function Serial x 8ch (UART/CSIO/I2C/LIN Selectable)				
	MB9BF322M		LQFP-80 BGA-96																											QPRC x 1	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																											QPRC x 2	Multi Function Serial x 8ch (UART/CSIO/I2C/LIN Selectable)				
	MB9BF324M		LQFP-80 BGA-96																											QPRC x 2	Multi Function Serial x 8ch (UART/CSIO/I2C/LIN Selectable)				
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 1 unit (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)	1	QPRC x 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																QPRC x 2									Multi Function Serial x 8ch (UART/CSIO/I2C/LIN Selectable)							
	MB9BF121M		LQFP-80 BGA-96																QPRC x 1									Multi Function Serial x 4ch (UART/CSIO/I2C/LIN Selectable)							
	MB9BF122K		LQFP-48 QFN-48				128K +32K	32K											14	35								14(2)	QPRC x 1	Multi Function Serial x 4ch (UART/CSIO/I2C/LIN Selectable)					
	MB9BF122L		LQFP-64 QFN-64																												QPRC x 2	Multi Function Serial x 8ch (UART/CSIO/I2C/LIN Selectable)			
	MB9BF122M		LQFP-80 BGA-96																												QPRC x 1	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																												QPRC x 2	Multi Function Serial x 8ch (UART/CSIO/I2C/LIN Selectable)			
	MB9BF124M		LQFP-80 BGA-96																												QPRC x 2	Multi Function Serial x 8ch (UART/CSIO/I2C/LIN Selectable)			
MB9B120J	MB9BF121J	72	LQFP-32 QFN-32	2.7 to 5.5	✓	FLASH	64K	8K	-	4	7	-	23	-	8(1)	-	Multi-Function Timer x 1 unit (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 1 unit (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	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																QPRC x 2																
	MB9BF529S*		LQFP-144				1.5M +64K	192K											154								QPRC x 1								
	MB9BF529T*		LQFP-176 BGA-192																								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 1 unit (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	Multi Function Serial x 16ch (UART/CSIO/I2C/LIN Selectable)	1	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																QPRC x 2																
	MB9BF429S*		LQFP-144				1.5M +64K	192K											154										QPRC x 1						
	MB9BF429T*		LQFP-176 BGA-192																										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								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]	I ² C [ch]	UART/SI [ch]	SIO [ch]	LIN/UART/SIO [ch]	CAN [ch]	USB-Host [ch]				
BASIC GROUP																																			
MB9B320T	MB9BF328S*	60	LQFP-144	2.7 to 5.5	✓	Dual Op. Flash (Main area + Work area)	1M +64K	160K	-	8	32	✓	-	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 QPRC x 2 QPRC x 1 QPRC x 2	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				1.5M +64K	192K																											
	MB9BF329S*		LQFP-144																																
	MB9BF329T*		LQFP-176 BGA-192																																
MB9B120T	MB9BF128S*	60	LQFP-144	2.7 to 5.5	✓	Dual Op. Flash (Main area + Work area)	1M +64K	160K	-	8	32	✓	-	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 QPRC x 2 QPRC x 1 QPRC x 2	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				1.5M +64K	192K																											
	MB9BF129S*		LQFP-144																																
	MB9BF129T*		LQFP-176 BGA-192																																
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								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]	I ² C [ch]	UART/SI [ch]	SIO [ch]	LIN/UART/SIO [ch]	CAN [ch]					USB-Host [ch]	USB-Function [ch]					
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/ETM)																								
	MB9AF111NA		LQFP-100 QFP-100 BGA-112								16	✓	83		16(3)		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)													
	MB9AF112LA	40	LQFP-64 QFN-64				128K	16K	-	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)	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)											
	MB9AF112MA		LQFP-80				11				66	16(3)		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/ETM)																									
	MB9AF112NA	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)																														
	MB9AF114LA	40	LQFP-64 QFN-64				256K	32K	-	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)	Multi-Function Timer x 2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch 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)	
	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								16	83	16(3)																											On-chip Debug (SWJ-DP)	
	MB9AF115MA		LQFP-80								11	66	12(3)																											On-chip Debug (SWJ-DP/ETM)	
	MB9AF115NA		LQFP-100 QFP-100 BGA-112**								16	✓	83																											16(3)	On-chip Debug (SWJ-DP/ETM)
	MB9AF116MA		LQFP-80								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				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)																								
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	Maximum Internal Clock Frequency [MHz]	Package [pin]	Operating Voltage: VCC [V]	Sub Clock	Memory Type	ROM [byte]	RAM [byte]	Cache [Kbyte]	DMAAC [ch]	Ext. Interrupt [ch]	External Bus	Maximum I/O port [ch]	10bitAD Converter [ch/unit]	12bitAD 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]	I ² C [ch]	UART/SI [ch]	SIO [ch]	LIN/UART/SIO [ch]	CAN [ch]	USB-Host [ch]					USB-Function [ch]																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
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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)	QPRC x 2	1	Base Timer x 15ch (Reload/PPG/PWM/ PWC 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								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								103																										Base Timer x 15ch (Reload/PPG/PWM/ PWC Selectable)	Multi Function Serial x 16ch (UART/CSIO/I2C Selectable)	On-chip Debug (SWJ-DP)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
	MB9AF155MA		LQFP-80 BGA-96				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				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				103	Base Timer x 16ch (Reload/PPG/PWM/ PWC Selectable)		Multi Function Serial x 16ch (UART/CSIO/I2C Selectable)	On-chip Debug (SWJ-DP/ETM)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
	MB9AF156MA		LQFP-80 BGA-96				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				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				103																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											

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]	I ² C [ch]	UART/SI [ch]	SIO [ch]	LIN/UART/SIO [ch]	CAN [ch]					USB-Host [ch]	USB-Function [ch]																	
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/I ² C 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								8	-	51		12(2)																																						
	MB9AF342MB		LQFP-80 BGA-96				128K +32K	32K			11	-	66	17(2)	-																		-	-	-	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	-	1	Multi Function Serial x 8ch (UART/CSIO/I ² C 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)
	MB9AF342NB		LQFP-100 QFP-100 BGA-112				16				✓	83	24(2)																																								
	MB9AF344LB		LQFP-64 QFN-64				8				-	51	12(2)																																								
	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/I ² C 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								8	-	51		12(2)																																						
	MB9AF142MB		LQFP-80 BGA-96				128K +32K	32K			11	-	66	17(2)	-	-																	-	-	Base Timer x 8ch (Reload/PPG/PWM/ PWC Selectable)	-	1	Multi Function Serial x 8ch (UART/CSIO/I ² C Selectable)	-	-	-	-	-	-	-	-	-	-	-	Dual Timer, HDMI-CEC/Remote Control Reception x 2, Real Time Clock, Unique ID	On-chip Debug (SWJ-DP/ETM)		
	MB9AF142NB		LQFP-100 QFP-100 BGA-112				16				✓	83	24(2)																																								
	MB9AF144LB		LQFP-64 QFN-64				8				-	51	12(2)																																								
	MB9AF144MB		LQFP-80 BGA-96				11				-	66	17(2)																																								
MB9AF144NB	LQFP-100 QFP-100 BGA-112	16	✓	83	24(2)																																																

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								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]	I ² C [ch]	UART/SI [ch]	SIO [ch]	LIN/UART/SIO [ch]	CAN [ch]				
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/I ² C/LIN Selectable)	-	-	-	✓	Dual Timer, Real Time Clock, Unique ID, Fast I/O	On-chip Debug (SW-DP/MTB)							
	S6E1A11C0A		LQFP-48 QFN-52 QFN-48				37						8(1)																					
	S6E1A12B0A		LQFP-32 QFN-32				23						5(1)																					
	S6E1A12C0A		LQFP-48 QFP-52 QFN-48				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, Chipper	On-Chip Debug (SWJ-DP/ Boundary SCAN)							
	S6E1B84GHA		256K + 40K				32K	32 SEG x 8 COM / 36 SEG x 4 COM																										
	S6E1B86FHA		512K + 40K				64K	20 SEG x 8 COM / 24 SEG x 4 COM																										
	S6E1B84FHA		256K + 40K				32K																											
	S6E1B86EHA		512K + 40K				64K																											
	S6E1B84EHA		256K + 40K				32K																											
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	32 SEG x 8 COM / 36 SEG x 4 COM																										
	S6E1B86F0A		512K + 40K				64K	20 SEG x 8 COM / 24 SEG x 4 COM																										
	S6E1B84F0A		256K + 40K				32K																											
	S6E1B86E0A		512K + 40K				64K																											
	S6E1B84E0A		256K + 40K				32K																											
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	-																										
	S6E1B36F0A		512K + 40K				64K	-																										
	S6E1B34F0A		256K + 40K				32K	-																										
	S6E1B36E0A		512K + 40K				64K	-																										
	S6E1B34E0A		256K + 40K				32K	-																										
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	-																										
	S6E1B16F0A		512K + 40K				64K	-																										
	S6E1B14F0A		256K + 40K				32K	-																										
	S6E1B16E0A		512K + 40K				64K	-																										
	S6E1B14E0A		256K + 40K				32K	-																										

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							Serial			Communication			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]	I ² C [ch]	UART/SIO [ch]	SIO [ch]	LIN/UART/SIO [ch]		
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 x 64ch, Tiny I2S, Wakeup I2C, HDMI-CEC 2ch, CRC, Smart Card I/F	On-Chip Debug (SWJ-DP)				
	64K						12K																								
	S6E1C32C0A		LQFP-48				128K	16K										9										38		Base Timer x 5ch (Reload/PPG/PWM/PWC Selectable)	
	S6E1C31C0A						WLCSP-26	128K										16K										5	20	4	Base Timer x 3ch (Reload/PPG/PWM/PWC Selectable)
	S6E1C32B0A		LQFP-32				128K	16K										7										24	6	Base Timer x 8ch (Reload/PPG/PWM/PWC Selectable)	
	S6E1C31B0A						QFN-64	128K										16K										12	54		Base Timer x 8ch (Reload/PPG/PWM/PWC Selectable)
	S6E1C32D0A		QFN-48				128K	16K										9										38	8	Base Timer x 5ch (Reload/PPG/PWM/PWC Selectable)	
	S6E1C31D0A						128K	16K										7										24		Base Timer x 3ch (Reload/PPG/PWM/PWC Selectable)	
	S6E1C32C0A		QFN-32				128K	16K										9										38		Base Timer x 5ch (Reload/PPG/PWM/PWC Selectable)	
	S6E1C31C0A						128K	16K										7										24		Base Timer x 3ch (Reload/PPG/PWM/PWC Selectable)	
S6E1C32B0A	QFN-32	128K	16K	7	24		Base Timer x 3ch (Reload/PPG/PWM/PWC 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)				
	64K						12K																								
	S6E1C12C0A		LQFP-48				128K	16K										9										38		Base Timer x 5ch (Reload/PPG/PWM/PWC Selectable)	
	S6E1C11C0A						128K	16K										7										24	6	Base Timer x 3ch (Reload/PPG/PWM/PWC Selectable)	
	S6E1C12B0A		LQFP-32				128K	16K										7										24		Base Timer x 8ch (Reload/PPG/PWM/PWC Selectable)	
	S6E1C11B0A						64K	12K										12										54	8	Base Timer x 8ch (Reload/PPG/PWM/PWC Selectable)	
	S6E1C12D0A		QFN-64				128K	16K										9										38		Base Timer x 5ch (Reload/PPG/PWM/PWC Selectable)	
	S6E1C11D0A						128K	16K										7										24		Base Timer x 3ch (Reload/PPG/PWM/PWC Selectable)	
	S6E1C12C0A		QFN-48				128K	16K										9										38		Base Timer x 5ch (Reload/PPG/PWM/PWC Selectable)	
	S6E1C11C0A						128K	16K										7										24		Base Timer x 3ch (Reload/PPG/PWM/PWC Selectable)	
	S6E1C12B0A		QFN-32				128K	16K										7										24		Base Timer x 3ch (Reload/PPG/PWM/PWC Selectable)	
	S6E1C11B0A						64K	12K																							

[illegible]

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								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]	I ² C [ch]	UART/SI [ch]	SO [ch]	LIN/UART/SO [ch]					CAN [ch]	USB-Host [ch]	USB-Function [ch]
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																												
	MB95F653E						12K	512					21																							
	MB95F653L							20																												
	MB95F654E						20K						21																							
	MB95F654L							20																												
	MB95F656E							21																												
	MB95F656L						36K						20																							
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]	Timer								Serial		Communication		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/ISI [ch]	SIO [ch]				LIN/UART/SIO [ch]	CAN [ch]	USB-Host [ch]
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						832K + 48K	TC-RAM: 48KB System - RAM: 16KB Backup - RAM: 8KB																										
	S6J312AHA						1088K +112K	TC-RAM: 64KB System - RAM: 16KB Backup - RAM: 8KB																										
S6J3200	S6J32AAKS	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				
	S6J32AAKU		TEQFP -216 (0.4mm pitch)										128	50(1)													32 x 4							
	S6J32AALS												120	46(1)													30 x 4							
	S6J32AALU												TEQFP -216 (0.4mm pitch)	128													50(1)				32 x 4			
	S6J32BAKS		TEQFP -208											120													46(1)				30 x 4			
	S6J32BAKU													TEQFP -216 (0.4mm pitch)													120				46(1)	30 x 4		
	S6J32BALS												TEQFP -216 (0.4mm pitch)														120				46(1)	30 x 4		
	S6J32BALU		TEQFP -208																								120				46(1)	30 x 4		
	S6J32CAKS													TEQFP -216 (0.4mm pitch)													120				46(1)	30 x 4		
	S6J32CAKU												TEQFP -216 (0.4mm pitch)														120				46(1)	30 x 4		
	S6J32CALS		TEQFP -216 (0.4mm pitch)																								120				46(1)	30 x 4		
	S6J32CALU													TEQFP -216 (0.4mm pitch)													120				46(1)	30 x 4		
	S6J32DAKS												TEQFP -216 (0.4mm pitch)														120				46(1)	30 x 4		
	S6J32DAKU		TEQFP -216 (0.4mm pitch)																								120				46(1)	30 x 4		
	S6J32DALS													TEQFP -216 (0.4mm pitch)													120				46(1)	30 x 4		
S6J32DALU	TEQFP -216 (0.4mm pitch)	120		46(1)	30 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]	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/SPI [ch]	SIO [ch]	LIN/UART/SIO [ch]	CAN [ch]	USB-Host [ch]				
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 Watchdog, 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 Watchdog, 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	
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 Watchdog, 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
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 Watchdog, Clock supervisor, Sound Generator, I2S: 2 ch, Quad SPI Flash Interface: 2 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
	MB9EF226EPMC																																	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 Watchdog, Clock supervisor, Sound Generator, I2S: 2 ch, Quad SPI Flash Interface: 2 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

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		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]	I ² C [ch]	UART/S [ch]	SIO [ch]			LIN/UART/SIO [ch]	CAN [ch]	USB-Host [ch]	USB-Function [ch]	LCD Controller [seg x com]	Three-phase Inverter										
CAN/AUTOMOTIVE																																															
MB91520	MB91F522B	LQFP-64	80	2.7 to 5.5	Main Flash +Work Flash	-	16	16	-	44	13(1) 13(1)	8bit x 1	16bit x 6 32bit x 4	16bit x 4 32bit x 5	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																									320K+64K	56K																				
	MB91F524B																									448K+64K	72K																				
	MB91F525B																									576K+64K	104K																				
	MB91F526B																									832K+64K	136K																				
	MB91F522D																									1088K+64K	160K																				
	MB91F523D																									320K+64K	56K																				
	MB91F524D																									448K+64K	72K																				
	MB91F525D																									576K+64K	104K																				
	MB91F526D																									832K+64K	136K																				
	MB91F522F	1088K+64K																								160K																					
	MB91F523F	320K+64K																								56K																					
	MB91F524F	448K+64K																								72K																					
	MB91F525F	576K+64K																								104K																					
	MB91F526F	832K+64K																								136K																					
	MB91F522J	1088K+64K																								160K																					
	MB91F523J	320K+64K																								56K																					
	MB91F524J	448K+64K																								72K																					
	MB91F525J	576K+64K																								104K																					
	MB91F526J	832K+64K																								136K																					
	MB91F522K	1088K+64K																								160K																					
	MB91F523K	320K+64K																								56K																					
	MB91F524K	448K+64K																								72K																					
	MB91F525K	576K+64K																								104K																					
	MB91F526K	832K+64K																								136K																					
	MB91F527R	1600K+64K																								192+16K	2.7 to 5.5	Main Flash +Work Flash	-	16	✓	-	120	16(1) 32(1)	16bit x 6 32bit x 6	16bit x 3 32bit x 3	16bit x 4 32bit x 6	2	-	Multi Function Serial x 12ch (LIN/UART/SIO/I2C Selectable)	6	-	-	-	✓	Details of part number suffix	On-chip Debug
	MB91F528R	2112K+64K																								320K+16K																					
	MB91F522L	320K+64K																								56K																					
MB91F523L	448K+64K	72K																																													
MB91F524L	576K+64K	104K																																													
MB91F525L	832K+64K	136K																																													
MB91F526L	1088K+64K	160K																																													
MB91F527U	1600K+64K	192+16K																																													
MB91F528U	2112K+64K	320K+16K																																													
MB91F527M	1600K+64K	192+16K																																													
MB91F528M	2112K+64K	320K+16K	128	BGA-416	24	219	32(1) 32(1)	16bit x 6 32bit x 8	16bit x 3 32bit x 8	16bit x 4 32bit x 8	4	-	Multi Function Serial x 20ch (LIN/UART/SIO/I2C Selectable)	6	-	-	-	-	-	-	-	-	On-Chip Debug																								
MB91F527Y	1600K+64K	192+16K																																													
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 x5ch + PWM Timer x6ch(2chx3 pairs) + PWC Timer x2ch + Base Timer x4ch (Reload/PPG/PWM/PWC Selectable)	-	-	Multi Function Serialx3ch (UART/SIO/LIN Selectable)	-	1	-	-	-	-	Comparator: 3ch, Slope Compensation: 1ch	On-Chip Debug																

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* In development; **Planning

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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			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]	I ² C [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		
AUTOMOTIVE																																						
MB96340	MB96345RS	56	LQFP-100	3.0 to 5.5	-	MASK	160K	8K	-	6	16	✓	24(1)	-	-	8	2	8	4+1 (Dedicated for PPG)	-	16	-	-	-	2	-	-	7	2	-	-	-	-	Option without CAN	MB96V300C			
	✓				288K		16K	80																														
	-				160K +64K		8K	80																														
	✓	288K			16K	80	-	6		16	✓	80				24(1)	-	-	8	2	8	4+1 (Dedicated for PPG)	-	16	-	-	-	2	-	-	7	1	-	-		-	-	Option without CAN
	-					80																																
	✓					80																																
	-					80																																
	✓					80																																
	-					80																																
	✓	416K			24K	80	24(1)	-		-	8	2				8	4+1 (Dedicated for PPG)	-	16	-	-	-	2	-	-	7	-	-	-	-	-	Option without CAN						
	-					80																																
	✓					80																																
	-					80																																
	✓					80																																
	-					80																																
	✓	544K			24K	80	24(1)	-		-	8	2				8	4+1 (Dedicated for PPG)	-	16	-	-	-	2	-	-	7	-	-	-	-	-	Option without CAN						
	-					80																																
	✓					80																																
-	80																																					
✓	80																																					
-	80																																					
✓	544K +32K	24K	80	24(1)	-	-	8	2	8	4+1 (Dedicated for PPG)	-	16	-	-	-	2	-	-	7	2	-	-	-	-	Option without CAN													
-			80																																			
✓			80																																			
-			80																																			
✓			80																																			
-			80																																			
MB96350	MB96F353AS	56	LQFP-64	3.0 to 5.5	-	FLASH	96K	8K	-	4	13	✓	15(1)	-	-	4	4	6+3 (Dedicated for LIN)	4+1 (Dedicated for PPG)	-	-	20	-	-	1	-	-	4	1	-	-	-	-	Option without CAN	MB96V300C			
	✓				160K		49																															
	-				51																																	
	✓				49																																	
	-				51																																	
	✓				49																																	
	-				51																																	
	✓				49																																	
	-				51																																	
	✓				49																																	
	-				51																																	
	✓				49																																	
	-				51																																	
	✓				49																																	
MB96370	MB96F378HS	40	LQFP-144	3.0 to 5.5	-	FLASH	544K +32K	28K	-	7	8	✓	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			
	✓				832K		32K	118																														
	✓				118																																	
	✓				118																																	
	✓				118																																	
	✓				118																																	
MB96380	MB96384RS	56	LQFP-120	3.0 to 5.5	-	MASK	128K	6K					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			
	✓				160K		8K	94																														
	-				94																																	
	✓				94																																	
	✓	160K			6K	94	-	7		8	✓	16(1)	-	-	4	2	8	4+1 (Dedicated for PPG)	5	-	8	-	-	1														
	✓					94																																
	✓					94																																
	✓					94																																
	✓	288K			16K	96	-	7		8	✓	16(1)	-	-	4	2	8	4+1 (Dedicated for PPG)	5	-	8	-	-	1														
	✓					94																																
	✓					94																																
	✓					94																																
	✓	416K			16K	96	-	7		8	✓	16(1)	-	-	4	2	8	4+1 (Dedicated for PPG)	5	-	8	-	-	1														
	✓					94																																
✓	94																																					
✓	94																																					
✓	544K +32K	28K	96	-	7	8	✓	16(1)	-	-	4	2	8	4+1 (Dedicated for PPG)	5	-	8	-	-	1																		
✓			94																																			
✓			94																																			
✓			94																																			
✓	544K +32K	28K	96	-	7	8	✓	16(1)	-	-	4	2	8	4+1 (Dedicated for PPG)	5	-	8	-	-	1																		
✓			94																																			
✓			94																																			
✓			94																																			
✓	544K +32K	28K	96	-	7	8	✓	16(1)	-	-	4	2	8	4+1 (Dedicated for PPG)	5	-	8	-	-	1																		
✓			94																																			
✓			94																																			
✓			94																																			
✓	544K +32K	28K	96	-	7	8	✓	16(1)	-	-	4	2	8	4+1 (Dedicated for PPG)	5	-	8	-	-	1																		
✓			94																																			
✓			94																																			
✓			94																																			
✓	544K +288K	32K	94	-	7	8	✓	16(1)	-	-	4	2	8	4+1 (Dedicated for PPG)	5	-	8	-	-	1																		
✓			94																																			
✓			94																																			
✓			94																																			
MB96390	MB96393RS	40	LQFP-100	3.0 to 5.5	-	MASK	96K	5K	-	-	8	-	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			
	✓				160K		8K	76																														
	✓				74																																	
	✓				76																																	
	✓				160K		76	-		8	-	-				4	2	4	4+1 (Dedicated for PPG)	4	-	4	-	-	1													
	✓						74																															
	✓						76																															
	✓						74																															

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