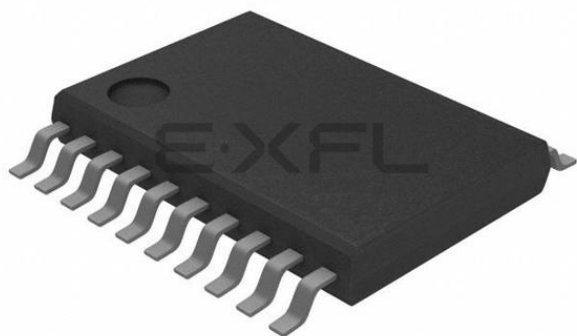




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What is "[Embedded - Microcontrollers](#)"?

"[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	LINbus, UART/USART
Peripherals	POR, PWM, WDT
Number of I/O	16
Program Memory Size	12KB (12K x 8)
Program Memory Type	FLASH
EEPROM Size	-
RAM Size	496 x 8
Voltage - Supply (Vcc/Vdd)	2.4V ~ 5.5V
Data Converters	A/D 6x8/10b
Oscillator Type	External
Operating Temperature	-40°C ~ 85°C (TA)
Mounting Type	Surface Mount
Package / Case	20-TSSOP (0.173", 4.40mm Width)
Supplier Device Package	20-TSSOP
Purchase URL	https://www.e-xfl.com/product-detail/infineon-technologies/mb95f563hnpft-g-sne2

Consumer and Industrial MCU Family



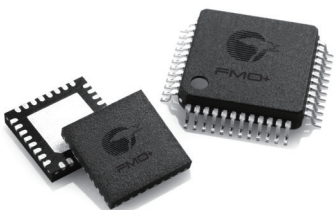
FM4 FAMILY

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.



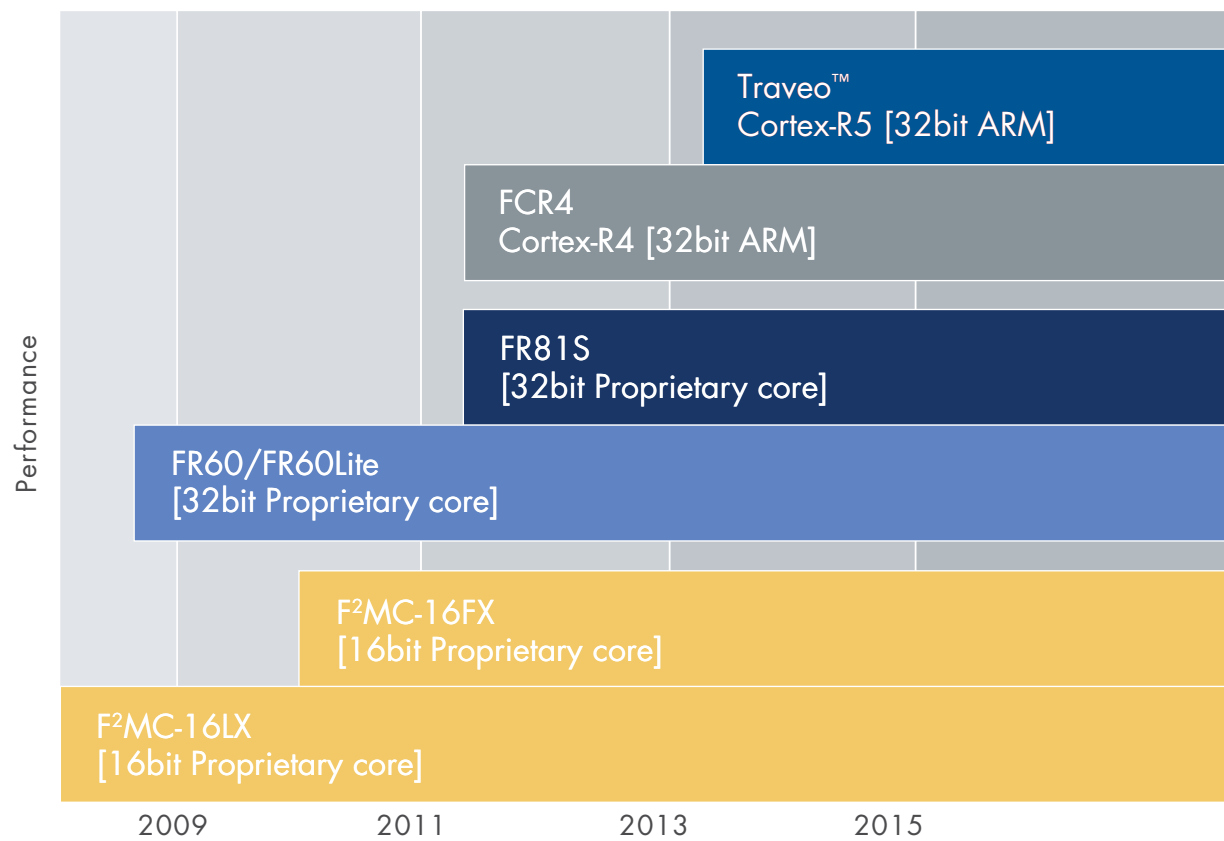
FM0+ FAMILY

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 μ A/MHz, an RTC mode current of 0.7 μ A and wake-up time of approximately 40 μ s.

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



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]				
S6E2GH	S6E2GH8H0A	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, SDC	On-Chip Debug (SWJ-DP/ ETM)						
	S6E2GH8J0A		LQFP-176																															
	S6E2GH6H0A		LQFP-144				512K	128K					121		32 (3)																			
	S6E2GH6J0A		LQFP-176																															
S6E2G3	S6E2G38H0A	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	On-Chip Debug (SWJ-DP/ ETM)						
	S6E2G38J0A		LQFP-176																															
	S6E2G36H0A		LQFP-144				512K	128K					121		32 (3)																			
	S6E2G36J0A		LQFP-176																															
S6E2G2 w/security	S6E2G28HHA	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, Chipser	On-Chip Debug (SWJ-DP/ ETM)						
	S6E2G28JHA		LQFP-176																															
	S6E2G26HHA		LQFP-144				512K	128K					121		32 (3)																			
	S6E2G26JHA		LQFP-176																															
S6E2G2	S6E2G28H0A	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	On-Chip Debug (SWJ-DP/ ETM)						
	S6E2G28J0A		LQFP-176																															
	S6E2G26H0A		LQFP-144				512K	128K					121		32 (3)																			
	S6E2G26J0A		LQFP-176																															
S6E2DH	S6E2DH5G0A	160	LQFP-120 TEQFP-120 BGA-161	2.7-3.6	✓	Main Flash	384K	36K	-	8	16	✓	98	-	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	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)						
	S6E2DH5GJA		LQFP-120 (SiP)										90																					
	S6E2DH5J0A		LQFP-176										154																					
S6E2DF	S6E2DF5G0A	160	LQFP-120 TEQFP-120 BGA-161	2.7-3.6	✓	Main Flash	384K	36K	-	8	16	✓	98	-	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	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)						
	S6E2DF5GJA		LQFP-120 (SiP)										90																					
	S6E2DF5J0A		LQFP-176										154																					
S6E2D5	S6E2D55G0A	160	LQFP-120 TEQFP-120 BGA-161	2.7-3.6	✓	Main Flash	384K	36K	-	8	16	✓	98	-	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	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)						
	S6E2D55GJA		LQFP-120 (SiP)										90																					
	S6E2D55J0A		LQFP-176										154																					
S6E2D3	S6E2D35G0A	160	LQFP-120 TEQFP-120 BGA-161	2.7-3.6	✓	Main Flash	384K	36K	-	8	16	✓	98	-	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	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)						
	S6E2D35GJA		LQFP-120 (SiP)										90																					
	S6E2D35J0A		LQFP-176										154																					

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]					
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 x 256ch, SDC, I2S 1ch(without 144pin), HDMI-CEC 2ch, High Speed Quad SPI x1(without 144pin), Programmable CRC, Eth1ch, Chipher, Voice	On-Chip Debug (SWJ-DP/ETM/ HTM)														
	S6E2CC8JGA		1M				128K	Dual Timer, Real Timer Clock, Unique ID, DSTC x 256ch, SDC, I2S 1ch(without 144pin), High Speed Quad SPI x1(without 144pin), Programmable CRC, Eth1ch, Voice																																	
	S6E2CCAJFA		BGA-192				2M																			256K															
	S6E2CC8JFA		1M				128K																																		
S6E2CC w/ Security	S6E2CAHHA	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)														
	S6E2CAJHA		LQFP-176 BGA-192										152																												
	S6E2CCALHA		LQFP-216										190																												
	S6E2CC9HHA		LQFP-144										120																												
	S6E2CC9JHA		LQFP-176 BGA-192				1.5M	192K					152																												
	S6E2CC9LHA		LQFP-216				190																																		
	S6E2CC8HHA		LQFP-144				120																																		
	S6E2CC8JHA		LQFP-176 BGA-192				1M	128K					152																												
S6E2CC8LHA	LQFP-216	190																																							
S6E2CC	S6E2CAHA0A	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)
	S6E2CAJA0A		LQFP-176 BGA-192										152																												
	S6E2CCAL0A		LQFP-216										190																												
	S6E2CC9H0A		LQFP-144										120																												
	S6E2CC9J0A		LQFP-176 BGA-192				1.5M	196K					152																												
	S6E2CC9L0A		LQFP-216				190																																		
	S6E2CC8H0A		LQFP-144				120																																		
	S6E2CC8J0A		LQFP-176 BGA-192				1M	128K					152																												
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																												
	S6E2C5AL0A		LQFP-216										190																												
	S6E2C59H0A		LQFP-144										120																												
	S6E2C59J0A		LQFP-176 BGA-192				1.5M	192K					152																												
	S6E2C59L0A		LQFP-216				190																																		
	S6E2C58H0A		LQFP-144				120																																		
	S6E2C58J0A		LQFP-176 BGA-192				1M	128K					152																												
	S6E2C58L0A		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]	1bit 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																		
S6E2C4	S6E2C4AH0A	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)	-	-	✓	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																								1M	128K	152	32 (3)	190	24 (3)	120	32 (3)	190	24 (3)																		
	S6E2C4AL0A		LQFP-216																																		120	24 (3)	190	24 (3)	152	32 (3)	190	24 (3)										
	S6E2C49H0A		LQFP-144																																										120	24 (3)	190	24 (3)	152	32 (3)	190	24 (3)		
	S6E2C49J0A		LQFP-176 BGA-192				120	24 (3)					190	24 (3)																																							152	32 (3)
	S6E2C49L0A		LQFP-216																								120	24 (3)	190	24 (3)	152	32 (3)	190	24 (3)																				
	S6E2C48H0A		LQFP-144																																120	24 (3)	190	24 (3)	152	32 (3)	190	24 (3)												
	S6E2C48J0A		LQFP-176 BGA-192																																								120	24 (3)	190	24 (3)	152	32 (3)	190	24 (3)				
S6E2C48L0A	LQFP-216	120	24 (3)	190	24 (3)	152	32 (3)	190	24 (3)																																													
S6E2C3AH0A	LQFP-144									120	24 (3)	190	24 (3)	152	32 (3)	190	24 (3)																																					
S6E2C3AJ0A	LQFP-176 BGA-192																	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)	-	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)																
S6E2C3AL0A	LQFP-216																																						1.5M	192K	128K	152	32 (3)	190	24 (3)	120	32 (3)	190	24 (3)					
S6E2C39H0A	LQFP-144	1.5M	192K	128K	152	32 (3)	190	24 (3)	120																																									32 (3)	190	24 (3)		
S6E2C39J0A	LQFP-176 BGA-192									1.5M	192K	128K	152	32 (3)	190	24 (3)	120																																				32 (3)	190
S6E2C39L0A	LQFP-216																	1.5M	192K	128K	152	32 (3)	190	24 (3)	120	32 (3)	190	24 (3)																										
S6E2C38H0A	LQFP-144																												1.5M	192K	128K	152	32 (3)	190	24 (3)	120	32 (3)	190	24 (3)															
S6E2C38J0A	LQFP-176 BGA-192	1.5M	192K	128K	152	32 (3)	190	24 (3)	120																															32 (3)	190	24 (3)												
S6E2C38L0A	LQFP-216									1.5M	192K	128K	152	32 (3)	190	24 (3)	120																										32 (3)	190	24 (3)									
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)
S6E2C2AJHA	LQFP-176 BGA-192																												1.5M	196K	128K	152	32 (3)	190	24 (3)	120	32 (3)	190	24 (3)															
S6E2C2ALHA	LQFP-216	1.5M	196K	128K	152	32 (3)	190	24 (3)	120																															32 (3)	190	24 (3)												
S6E2C29HHA	LQFP-144									1.5M	196K	128K	152	32 (3)	190	24 (3)	120																										32 (3)	190	24 (3)									
S6E2C29JHA	LQFP-176 BGA-192																					1.5M	196K					128K																		152								
S6E2C29LHA	LQFP-216																												1.5M	196K	128K	152	32 (3)	190	24 (3)	120	32 (3)	190	24 (3)															
S6E2C28HHA	LQFP-144	1.5M	196K	128K	152	32 (3)	190	24 (3)	120																															32 (3)	190	24 (3)												
S6E2C28JHA	LQFP-176 BGA-192									1.5M	196K	128K	152	32 (3)	190	24 (3)	120																										32 (3)	190	24 (3)									
S6E2C28LHA	LQFP-216																	1.5M	196K	128K	152	32 (3)	190	24 (3)	120	32 (3)	190	24 (3)																										
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)
S6E2C2AJ0A	LQFP-176 BGA-192	1.5M	192K	128K	152	32 (3)	190	24 (3)	120																															32 (3)	190	24 (3)												
S6E2C2AL0A	LQFP-216									1.5M	192K	128K	152	32 (3)	190	24 (3)	120																										32 (3)	190	24 (3)									
S6E2C29H0A	LQFP-144																	1.5M	192K	128K	152	32 (3)	190	24 (3)	120	32 (3)	190	24 (3)																										
S6E2C29J0A	LQFP-176 BGA-192																																1.5M	192K					128K							152								
S6E2C29L0A	LQFP-216	1.5M	192K	128K	152	32 (3)	190	24 (3)	120																															32 (3)	190	24 (3)												
S6E2C28H0A	LQFP-144									1.5M	192K	128K	152	32 (3)	190	24 (3)	120																										32 (3)	190	24 (3)									
S6E2C28J0A	LQFP-176 BGA-192																	1.5M	192K	128K	152	32 (3)	190	24 (3)	120	32 (3)	190	24 (3)																										
S6E2C28L0A	LQFP-216																												1.5M	192K	128K	152	32 (3)	190	24 (3)	120	32 (3)	190	24 (3)															
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)	-	-
S6E2C1AJ0A	LQFP-176 BGA-192									1.5M	196K	128K	152	32 (3)	190	24 (3)	120																										32 (3)	190	24 (3)									
S6E2C1AL0A	LQFP-216																	1.5M	196K	128K	152	32 (3)	190	24 (3)	120	32 (3)	190	24 (3)																										
S6E2C19H0A	LQFP-144																												1.5M	196K	128K	152	32 (3)	190	24 (3)	120	32 (3)	190	24 (3)															
S6E2C19J0A	LQFP-176 BGA-192					1.5M	196K																																			128K				152								
S6E2C19L0A	LQFP-216									1.5M	196K	128K	152	32 (3)	190	24 (3)	120																										32 (3)	190	24 (3)									
S6E2C18H0A	LQFP-144																	1.5M	196K	128K	152	32 (3)	190	24 (3)	120	32 (3)	190	24 (3)																										
S6E2C18J0A	LQFP-176 BGA-192																												1.5M	196K	128K	152	32 (3)	190	24 (3)	120	32 (3)	190	24 (3)															
S6E2C18L0A	LQFP-216	1.5M	196K	128K	152	32 (3)	190	24 (3)	120																															32 (3)	190	24 (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								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		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	64K	-	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)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	MB9BF466L		LQFP-64 QFN-64																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	

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 ² [ch]	SIO [ch]	LIN/UART/SIO [ch]					CAN [ch]	USB-Host [ch]
HIGH-PERFORMANCE GROUP																																			
MB9BD10T	MB9BFD16T	144	LQFP-176 BGA-192	2.7 to 5.5	✓	FLASH	512K	64K	-	8	32	✓	-	-	-	-	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/I ² C/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				768K	96K																											
	MB9BFD17T		LQFP-176 BGA-192				768K	96K																											
	MB9BFD17S		LQFP-144				768K	96K																											
	MB9BFD18T		LQFP-176 BGA-192				1M	128K																											
	MB9BFD18S		LQFP-144				1M	128K																											
MB9B610T	MB9BF616T	144	LQFP-176 BGA-192	2.7 to 5.5	✓	FLASH	512K	64K	-	8	32	✓	-	-	-	-	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/I ² C/LIN Selectable)	-	2ch (USB-Host/ USB-Function Selectable)	-	✓	Dual Timer, Ethernet-MAC x 2ch	On-chip Debug (SWJ-DP/ETM)						
	MB9BF616S		LQFP-144				768K	96K																											
	MB9BF617T		LQFP-176 BGA-192				768K	96K																											
	MB9BF617S		LQFP-144				768K	96K																											
	MB9BF618T		LQFP-176 BGA-192				1M	128K																											
	MB9BF618S		LQFP-144				1M	128K																											
MB9B510T	MB9BF516T	144	LQFP-176 BGA-192	2.7 to 5.5	✓	FLASH	512K	64K	-	8	32	✓	-	-	-	-	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/I ² C/LIN Selectable)	2	2ch (USB-Host/ USB-Function Selectable)	-	✓	CAN: 32Msg-buffer, Dual Timer	On-chip Debug (SWJ-DP/ETM)						
	MB9BF516S		LQFP-144				768K	96K																											
	MB9BF517T		LQFP-176 BGA-192				768K	96K																											
	MB9BF517S		LQFP-144				768K	96K																											
	MB9BF518T		LQFP-176 BGA-192				1M	128K																											
	MB9BF518S		LQFP-144				1M	128K																											
MB9B410T	MB9BF416T	144	LQFP-176 BGA-192	2.7 to 5.5	✓	FLASH	512K	64K	-	8	32	✓	-	-	-	-	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/I ² C/LIN Selectable)	2	-	-	-	✓	CAN: 32Msg-buffer, Dual Timer	On-chip Debug (SWJ-DP/ETM)					
	MB9BF416S		LQFP-144				768K	96K																											
	MB9BF417T		LQFP-176 BGA-192				768K	96K																											
	MB9BF417S		LQFP-144				768K	96K																											
	MB9BF418T		LQFP-176 BGA-192				1M	128K																											
	MB9BF418S		LQFP-144				1M	128K																											
MB9B310T	MB9BF316T	144	LQFP-176 BGA-192	2.7 to 5.5	✓	FLASH	512K	64K	-	8	32	✓	-	-	-	-	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/I ² C/LIN Selectable)	-	2ch (USB-Host/ USB-Function Selectable)	-	✓	Dual Timer	On-chip Debug (SWJ-DP/ETM)						
	MB9BF316S		LQFP-144				768K	96K																											
	MB9BF317T		LQFP-176 BGA-192				768K	96K																											
	MB9BF317S		LQFP-144				768K	96K																											
	MB9BF318T		LQFP-176 BGA-192				1M	128K																											
	MB9BF318S		LQFP-144				1M	128K																											
MB9B210T	MB9BF216T	144	LQFP-176 BGA-192	2.7 to 5.5	✓	FLASH	512K	64K	-	8	32	✓	-	-	-	-	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/I ² C/LIN Selectable)	-	2ch (USB-Host/ USB-Function Selectable)	-	✓	Dual Timer, Ethernet-MAC x 1ch	On-chip Debug (SWJ-DP/ETM)						
	MB9BF216S		LQFP-144				768K	96K																											
	MB9BF217T		LQFP-176 BGA-192				768K	96K																											
	MB9BF217S		LQFP-144				768K	96K																											
	MB9BF218T		LQFP-176 BGA-192				1M	128K																											
	MB9BF218S		LQFP-144				1M	128K																											
MB9B110T	MB9BF116T	144	LQFP-176 BGA-192	2.7 to 5.5	✓	FLASH	512K	64K	-	8	32	✓	-	-	-	-	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/I ² C/LIN Selectable)	-	-	-	-	✓	Dual Timer	On-chip Debug (SWJ-DP/ETM)					
	MB9BF116S		LQFP-144				768K	96K																											
	MB9BF117T		LQFP-176 BGA-192				768K	96K																											
	MB9BF117S		LQFP-144				768K	96K																											
	MB9BF118T		LQFP-176 BGA-192				1M	128K																											
	MB9BF118S		LQFP-144				1M	128K																											

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 [bit]	Ext. Interrupt [bit]	External Bus	Maximum I/O port [bit]	10bit AD Converter [bit/unit]	12bit AD Converter [bit/unit]	DA Converter [bit x bit]	Timer							Serial				Communication			Note	Evaluation Device
																	Output Compare [bit]	Free-Run Timer [bit]	Input Capture [bit]	Reload Timer [bit]	PWM Timer [bit]	PWC Timer [bit]	PPG Timer [bit]	Up/Down Counter [bit]	Other timers [bit]	I ² C [bit]	UART/SI [bit]	SIO [bit]	LN/UART/SIO [bit]	CAN [bit]		
HIGH-PERFORMANCE GROUP																																
MB9B510R	MB9BF512N	144	QFP-100 LQFP-100 BGA-112	2.7 to 5.5	✓	Main Flash +Work Flash	128K +32K	16K	-	8	16	✓	-	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/I ² C/LIN Selectable)	2	1ch (USB-Host/ USB-Function Selectable)	-	✓	CAN: 32Msg-buffer, Dual Timer	On-chip Debug (SWJ-DP/ETM)						
	MB9BF512R		LQFP-120				103																									
	MB9BF514N		QFP-100 LQFP-100 BGA-112				256K +32K	32K																			83					
	MB9BF514R		LQFP-120				103																									
	MB9BF515N		QFP-100 LQFP-100 BGA-112				384K +32K	48K																			83					
	MB9BF515R		LQFP-120				103																									
	MB9BF516N		QFP-100 LQFP-100 BGA-112				512K +32K	64K																			83					
	MB9BF516R		LQFP-120				103																									
MB9B410R	MB9BF412N	144	QFP-100 LQFP-100 BGA-112	2.7 to 5.5	✓	Main Flash +Work Flash	128K +32K	16K	-	8	16	✓	-	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/I ² C/LIN Selectable)	2	-	-	-	✓	CAN: 32Msg-buffer, Dual Timer	On-chip Debug (SWJ-DP/ETM)					
	MB9BF412R		LQFP-120				103																									
	MB9BF414N		QFP-100 LQFP-100 BGA-112				256K +32K	32K																				83				
	MB9BF414R		LQFP-120				103																									
	MB9BF415N		QFP-100 LQFP-100 BGA-112				384K +32K	48K																				83				
	MB9BF415R		LQFP-120				103																									
	MB9BF416N		QFP-100 LQFP-100 BGA-112				512K +32K	64K																				83				
	MB9BF416R		LQFP-120				103																									
MB9B310R	MB9BF312N	144	QFP-100 LQFP-100 BGA-112	2.7 to 5.5	✓	Main Flash +Work Flash	128K +32K	16K	-	8	16	✓	-	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/I ² C/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	✓	-	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/I ² C/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]	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]				
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																															
	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																															
	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]				
BASIC GROUP																																		
MB9A310A	MB9AF311LA	40	LQFP-64 QFN-64	2.7 to 5.5	✓	FLASH	-	8	-	51	9(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)	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)																		
	MB9AF312LA		LQFP-64 QFN-64										8	-	51	9(2)																		
	MB9AF312MA		LQFP-80										11	66	12(3)																			
	MB9AF312NA		LQFP-100 QFP-100 BGA-112										16	✓	83	16(3)																		
	MB9AF314LA		LQFP-64 QFN-64										7	-	51	9(2)																		
	MB9AF314MA		LQFP-80										11	66	12(3)																			
	MB9AF314NA		LQFP-100 QFP-100 BGA-112										16	83	16(3)																			
	MB9AF315MA		LQFP-80										11	66	12(3)																			
	MB9AF315NA		LQFP-100 QFP-100 BGA-112**										16	✓	83	16(3)																		
	MB9AF316MA		LQFP-80										11	66	12(3)																			
MB9AF316NA	LQFP-100 QFP-100 BGA-112**	16	83	16(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]	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)								On-chip Debug (SWJ-DP)													
	MB9AF112MA		LQFP-80				11				66	12(3)		Multi-Function Timer x 2units (Free-Run 3ch/ Output Compare 6ch/ Input Capture 4ch/PPG 3ch/ Waveform Generator 3ch/ AD Activation Compare 3ch Selectable)								On-chip Debug (SWJ-DP)																
	MB9AF112NA		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/ETM)													
	MB9AF114LA	40	LQFP-64 QFN-64				256K	32K	-	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								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)													
	MB9AF115MA		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)																
	MB9AF115NA		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)																
	MB9AF116MA		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)																	
	MB9AF116NA		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)																	
MB9A310K	MB9AF311K	40	LQFP-48 QFN-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	Maximum Internal Clock Frequency [MHz]	Package [pin]	Operating Voltage: VCC [V]	Sub Clock	Memory Type	ROM [byte]	RAM [byte]	Cache [Kbyte]	DMAC [bit]	Ext. Interrupt [bit]	External Bus	Maximum I/O port [bit]	10bit AD Converter [bit(unif)]	12bit AD Converter [bit(unif)]	DA Converter [bit x bit]	Timer							Serial			Communication			LCD Controller [seg x com]	Three-phase Inverter	Note	Evaluation Device
																	Output Compare [bit]	Free-Run Timer [bit]	Input Capture [bit]	Reload Timer [bit]	PWM Timer [bit]	PWC Timer [bit]	PPG Timer [bit]	Up/Down Counter [bit]	Other timers [bit]	i ² C [bit]	UART/S ⁱ [bit]	SIO [bit]	LIN/UART/SIO [bit]				
ULTRA LOW LEAK GROUP																																	
MB9AAA0N	MB9AFAA1L	20	LQFP-64 QFN-64	1.8 to 5.5	✓	FLASH	64K	12K	-	-	-	-	-	-	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/i ² C Selectable)	-	-	-	24 x 4 or 20 x 8 37 x 4 or 33 x 8 44 x 4 or 40 x 8 24 x 4 or 20 x 8 37 x 4 or 33 x 8 44 x 4 or 40 x 8	✓	HDMI-CEC/Remote Control Reception x 2, Real Time Clock	On-chip Debug (SWJ-DP)					
	MB9AFAA1M		LQFP-80																										12(1)				
	MB9AFAA1N		LQFP-100 QFP-100																										16(1)				
	MB9AFAA2L		LQFP-64 QFN-64				9(1)																										
	MB9AFAA2M		LQFP-80				12(1)																										
	MB9AFAA2N		LQFP-100 QFP-100				16(1)																										
MB9A1A0N	MB9AF1A1L	20	LQFP-64 QFN-64	1.8 to 5.5	✓	FLASH	64K	12K	-	-	-	-	-	-	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/i ² C Selectable)	-	-	-	-	✓	HDMI-CEC/Remote Control Reception x 2, Real Time Clock	On-chip Debug (SWJ-DP)					
	MB9AF1A1M		LQFP-80																										12(1)				
	MB9AF1A1N		LQFP-100 QFP-100																										16(1)				
	MB9AF1A2L		LQFP-64 QFN-64				9(1)																										
	MB9AF1A2M		LQFP-80				12(1)																										
	MB9AF1A2N		LQFP-100 QFP-100				16(1)																										
MB9A130LA	MB9AF131LB	20	LQFP-64 QFN-64	1.8 to 5.5	✓	FLASH	64K	8K	-	-	-	-	-	8	37	-	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/i ² C Selectable)	-	-	-	-	✓	Real Time Clock	On-chip Debug (SWJ-DP)					
	MB9AF131KB		LQFP-48 QFN-48																										6(1)				
	MB9AF132LB		LQFP-64 QFN-64				8(1)																										
	MB9AF132KB		LQFP-48 QFN-48				6(1)																										

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	-																										

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(unif)]	12bit AD Converter [ch(unt)]	DA Converter [bit x ch]	Timer						Serial			Communication			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	-	-	4(1)	-	-	-	Reload Timer x 1ch + 8/16bit Compound Timer x 2ch (Interval Timer/PWM/PWC/ Input Capture Selectable)	2	-	-	1	2	-	-	-	-	-	52 x 4 or 48 x 8	-	Clock Supervisor	On-chip Debug			
	MB95F613K						20K	1024	-	-	8	-	Low-voltage Detection Reset, Clock Supervisor																						
	MB95F614H						36K	1024	-	-	8	-	Clock Supervisor																						
	MB95F614K						40	-	-	8	-	Low-voltage Detection Reset, Clock Supervisor																							
	MB95F616H						41	-	-	8	-	Clock Supervisor																							
MB95710M	MB95F714J	16	LQFP-80	1.8 to 5.5	✓	Dual Op. Flash	20K	512	-	-	8	-	-	-	8(1)	-	-	Reload Timer x 1ch + 8/16bit Compound Timer x 2ch (Interval Timer/PWM/PWC/ Input Capture Selectable)	2	-	-	1	3	-	-	-	-	-	40 x 4 or 36 x 8	-	Clock Supervisor	On-chip Debug			
	MB95F714M						36K	1K	-	-	8	-	Low-voltage Detection Reset, Clock Supervisor																						
	MB95F716J						60K	2K	-	-	8	-	Clock Supervisor																						
	MB95F716M						75	-	-	8	-	Low-voltage Detection Reset, Clock Supervisor																							
	MB95F718J						74	-	-	8	-	Clock Supervisor																							
	MB95F718M						75	-	-	8	-	Low-voltage Detection Reset, Clock Supervisor																							
	MB95F718M						74	-	-	8	-	Clock Supervisor																							
MB95770M	MB95F774J	16	LQFP-64	1.8 to 5.5	✓	Dual Op. Flash	20K	512	-	-	8	-	-	-	8(1)	-	-	Reload Timer x 1ch + 8/16bit Compound Timer x 2ch (Interval Timer/PWM/PWC/ Input Capture Selectable)	2	-	-	1	3	-	-	-	-	-	32 x 4 or 28 x 8	-	Clock Supervisor	On-chip Debug			
	MB95F774M						36K	1K	-	-	8	-	Low-voltage Detection Reset, Clock Supervisor																						
	MB95F776J						60K	2K	-	-	8	-	Clock Supervisor																						
	MB95F776M						59	-	-	8	-	Low-voltage Detection Reset, Clock Supervisor																							
	MB95F778J						58	-	-	8	-	Clock Supervisor																							
	MB95F778M						59	-	-	8	-	Low-voltage Detection Reset, Clock Supervisor																							
INVERTER																																			
MB95630H	MB95F632H	16	LQFP-32 SH-DIP-32 QFN-32	2.4 to 5.5	✓	Dual Op. Flash	8K	256	-	-	10	-	-	8(1)	-	-	-	Reload Timer x 1ch + 8/16bit Compound Timer x 2ch (Interval Timer/PWM/PWC/ Input Capture Selectable)	3	-	1	1	1	-	1	-	-	-	-	✓	Low-voltage Detection Reset, Multi-pulse Generator (Reload/PPG/Waveform Sequencer), Clock Supervisor	On-chip Debug			
	MB95F632K						12K	512	-	-	10	-	Low-voltage Detection Reset, Multi-pulse Generator (Reload/PPG/Waveform Sequencer), Clock Supervisor																						
	MB95F633H						20K	1024	-	-	10	-	Clock Supervisor																						
	MB95F633K						28	-	-	10	-	Low-voltage Detection Reset, Multi-pulse Generator (Reload/PPG/Waveform Sequencer), Clock Supervisor																							
	MB95F634H						29	-	-	10	-	Clock Supervisor																							
	MB95F634K						28	-	-	10	-	Low-voltage Detection Reset, Multi-pulse Generator (Reload/PPG/Waveform Sequencer), Clock Supervisor																							
	MB95F636H						29	-	-	10	-	Clock Supervisor																							
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)	-	-	-	+ Reload Timer x 1ch + 8/16bit Compound Timer x 2ch (Interval Timer/PWM/PWC/ Input Capture Selectable)	3	-	1	1	1	-	1	-	-	-	-	✓	Low-voltage Detection Reset, Multi-pulse Generator (Reload/PPG/Waveform Sequencer), Clock Supervisor	On-chip Debug			
	MB95F696K						36K	1K	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	MB95F698K						60K	2K	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
STANDARD																																			
MB95560H	MB95F562H	16	SOP-20 TSSOP-20 QFN-32	2.4 to 5.5	✓	Dual Op. Flash	8K	240	-	-	6	-	-	6(1)	-	-	-	8/16bit Compound Timer x 2ch (Interval Timer/PWM/PWC/ Input Capture Selectable)	-	-	-	-	-	-	1	-	-	-	-	-	-	Clock Supervisor	On-chip Debug		
	MB95F562K						12K	496	-	-	6	-	Low-voltage Detection Reset, Clock Supervisor																						
	MB95F563H						20																												

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]	SIO [ch]	LIN/UART/SIO [ch]	CAN [ch]					USB-Host [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						21																												
	MB95F653L						20																												
	MB95F654E						21																												
	MB95F654L						20																												
	MB95F656E						21																												
	MB95F656L						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	-	-	-	-	-	-	Low-voltage Detection Reset, Clock Supervisor	On-chip Debug		
	MB95F816K						36K	1K																											
	MB95F818K						60K	2K																											

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]					USB-Function [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																																			

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* In development; **Planning

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(unt)]	12bit AD Converter [ch(unt)]	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]				
CAN/AUTOMOTIVE																																		
MB91590	MB91F591B	80	LQFP-208	3.0 to 3.6 4.5 to 5.5 (2 power supplies)	Main Flash +Work Flash	Dedicated for GDC External Memory	576K +64K	48K	-	16	16	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: 32/64Mseg-buffer, LIN, FPU, MPU, Sound generator, SMC x 6ch, From among the RAM, 8KB can be used as BackUpRAM, Built-in 2D GDC	On-chip Debug						
	MB91F591BS																																	
	MB91F591BH																																	
	MB91F591BHS																																	
	MB91F592B																																	
	MB91F592BS																																	
	MB91F592BH																																	
	MB91F592BHS																																	
	MB91F594B	128	BGA-320				1600K +64K	264K							2112K +64K	264K	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)												
	MB91F594BS																																	
	MB91F594BH																																	
	MB91F594BHS																																	
	MB91F59AC																																	
	MB91F59ACS																																	
	MB91F59ACH																																	
	MB91F59ACHS																																	
MB91F59BC																																		
MB91F59BCS																																		
MB91F59BCH																																		
MB91F59BCHS																																		

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]	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/SIO [ch]	CAN [ch]					USB-Host [ch]	USB-Function [ch]
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	
	✓																													34						1
	-																													36						-
	✓																													34						-
	MB96F313AW					✓																								36						-
	MB96F313RS					✓																								34						-
	MB96F313RW					✓																								36						-
	MB96F315AS					✓																								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		
	✓											64																	-							
	MB96F326AW											✓																	66						2	
	MB96F326RS											✓																	64						-	
	MB96F326RW											✓																	66						-	
	MB96F336US											-																	124						36(1)	-
MB96F336UW	✓	122	-																																	
MB96F338RS	-	124	3	1ch (USB-Host/ USB-Function Selectable)																																
MB96F338RW	✓	122																																		
MB96F338US	-	120																																		
MB96F338UW	✓	118	36(1)																																	

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]	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]						
AUTOMOTIVE																																										
MB96340	MB96345RS	56	LQFP-100	3.0 to 5.5	-	MASK	160K	8K						24(1)	-	-	8	2	8	4+1 (Dedicated for PPG)	-	16	-	-	-	2	-	-	7	2					Option without CAN	MB96V300C						
	✓				288K		16K	80																													80					
	-							82																													80					
	✓							80																																		
	MB96F345DS	40			-	FLASH	160K +64K	8K																						82							80					
	✓							82																						80												
	-							82																						80												
	✓							80																																		
	MB96F346AS	56			-	288K	16K	-																						6							16	✓	82	80		
	✓																																						82	80		
	MB96F346AW				-																																			82	80	
	✓																																						82	80		
	MB96F346RS				-																																			80		
	✓																																						80			
	MB96F346RW				416K			-																																	80	
	✓																																							82	80	
	MB96F347AS					-																								82							80					
	✓							80																																		
	MB96F347AW					-																								82							80					
	✓							82																						80												
MB96F347RS	-					80																																				
✓				80																																						
MB96F347RW	544K		-			82	80																																			
✓					82	80																																				
MB96F348AS		-			82	80																																				
✓				82	80																																					
MB96F348AW		-			80																																					
✓				82	80																																					
MB96F348RS		-			80																																					
✓				80																																						
MB96F348RW	24K	-			82	80																																				
✓				82	80																																					
MB96F348HS		-			82	80																																				
✓				80																																						
MB96F348HW	544K +32K				82	80																																				
MB96350	MB96F353AS	56	LQFP-64	3.0 to 5.5	-	FLASH	96K	8K						15(1)	-	-	4	4	6+3 (Dedicated for LIN)	4+1 (Dedicated for PPG)	-	-	20	-	-	1	-	-	4	1	-	-	-	-	Option without CAN	MB96V300C						
	✓							51																													49					
	✓							51																													49					
	-							51																													49					
	✓							51																													49					
	MB96F353AW				-																																51	49				
	✓							51																													49					
	MB96F353RS				-																																51	49				
	✓							51																													49					
	MB96F353RW				-																																51	49				
	✓							51																													49					
	MB96F355AS				-																																51	49				
	✓							51																													49					
	MB96F355AW				-																																51	49				
✓			51	49																																						
MB96F355RS	-			51	49																																					
✓			51	49																																						
MB96F356AS	288K	12K	-			51	49																																			
✓					51	49																																				
MB96F356AW			-			51	49																																			
✓					51	49																																				
MB96F356RS			-			51	49																																			
✓					51	49																																				
MB96F356RW				51	49																																					
MB96370	MB96F378HS	40	LQFP-144	3.0 to 5.5	-	FLASH	544K +32K	28K						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						
	✓							118																													118					
	MB96F378HW				-																																118	118				
	✓							118																													118					
	MB96F379RS				-																																118	11				
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					SMC x 5ch Sound generator x 2ch	MB96V300C						
	✓							96																													94					
	MB96384RW				-																																96	94				
	✓							96																													94					
	MB96385RS	-					96	94																																		
	✓					96	94																																			
	MB96385RW	-					96	94																																		
	✓					96	94																																			
	MB96F385RS	40			-	FLASH	160K	6K																						96							94					
	✓							96																						94												
	MB96F386RS				-																									96							94					
	✓							96																						94												
	MB96F386RW	-					96	94																																		
	✓					96	94																																			
	MB96F387RS	56			-	FLASH	16K	16K																						96							94					
	✓							96																						94												
MB96F387RW	-				96		94																																			
✓				96	94																																					
MB96F388HS	40	-	FLASH	544K +32K	28K	96	94																																			
✓					96	94																																				
MB96F388HW		-				96	94																																			
✓					96	94																																				
MB96F389RS	-			96	94																																					
✓			96	94																																						
MB96F389RW				96	94																																					
MB96390	MB96393RS	40	LQFP-100	3.0 to 5.5	-	MASK	96K	5K						11(1)	-	-	4	2	4	4+1 (Dedicated for PPG)	4	-	4	-	-	1	-	-	3	1					SMC x 4ch Sound generator x 1ch	MB96V300C						
	✓							76																													74					
	MB96393RW				-																																76	74				
	✓							76																													74					
	MB96395RS	-					76	74																																		
	✓					76	74																																			
	MB96F395RS	-					76	74																																		
✓			76	74																																						
MB96F395RW				76	74																																					

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]	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]
AUTOMOTIVE																																				
MB96610	MB96F612A	32	LQFP-48	2.7 to 5.5	✓	Dual Op. Flash	32.5K +32K	4K	-	2	11	-	37 (Single clock) 35 (Dual clock)	16(1)	-	-	5	4	4 +3 (Dedicated for LIN)	2 +1 (Dedicated for PPG)	-	-	8bit x 16 16bit x 8	QPRC x 2	-	-	-	3	-	-	-	-	-	Option without CAN	On-chip Debug	
	MB96F612R						64.5K +32K																						1							
	MB96F613A						128.5K +32K																						1							
	MB96F615A						128.5K +32K																						1							
	MB96F615R						32.5K +32K																						1							
MB96620	MB96F622A	32	LQFP-64	2.7 to 5.5	✓	Dual Op. Flash	32.5K +32K	4K	-	2	13	-	52 (Single clock) 50 (Dual clock)	21(1)	-	-	6	4	6 +2 (Dedicated for LIN)	2 +1 (Dedicated for PPG)	-	-	8bit x 16 16bit x 8	QPRC x 2	1	-	-	3	-	-	-	-	-	Option without CAN	On-chip Debug	
	MB96F622R						64.5K +32K																						1							
	MB96F623A						128.5K +32K																						1							
	MB96F623R						128.5K +32K																						1							
	MB96F625A						32.5K +32K																						1							
MB96630	MB96F633A	32	LQFP-80	2.7 to 5.5	✓	Dual Op. Flash	64.5K +32K	10K	-	4	15	-	64 (Single clock) 66 (Dual clock)	21(1)	-	-	7	3	6 +1 (Dedicated for LIN)	3	-	-	8bit x 20 16bit x 15	QPRC x 2	2	-	-	5	-	-	-	-	-	Option without CAN	On-chip Debug	
	MB96F633R						128.5K +32K																						1							
	MB96F635A						256.5K +32K																						1							
	MB96F635R						384.5K +32K																						1							
	MB96F636R						384.5K +32K																						1							
MB96640	MB96F643A	32	LQFP-100	2.7 to 5.5	✓	Dual Op. Flash	64.5K +32K	10K	-	4	16	-	81 (Single clock) 79 (Dual clock)	24(1)	-	-	7	3	6 +1 (Dedicated for LIN)	5	-	-	8bit x 24 16bit x 16	QPRC x 2	2	-	-	6	-	-	-	-	-	Option without CAN	On-chip Debug	
	MB96F643R						128.5K +32K																						1							
	MB96F645A						256.5K +32K																						1							
	MB96F645R						384.5K +32K																						1							
	MB96F646R						384.5K +32K																						1							
MB96650	MB96F653A	32	LQFP-120	2.7 to 5.5	✓	Dual Op. Flash	64.5K +32K	10K	-	4	16	-	101 (Single clock) 99 (Dual clock)	29(1)	-	-	7	3	6 +1 (Dedicated for LIN)	5	-	-	8bit x 32 16bit x 16	QPRC x 2	2	-	-	6	-	-	-	-	-	Option without CAN	On-chip Debug	
	MB96F653R						128.5K +32K																						1							
	MB96F655A						256.5K +32K																						1							
	MB96F655R						384.5K +32K																						1							
	MB96F656R						384.5K +32K																						1							
MB96670	MB96F673A	32	LQFP-64	2.7 to 5.5	✓	Dual Op. Flash	64.5K +32K	4K	-	2	7	-	50 (Single clock) 48 (Dual clock)	12(1)	-	-	-	2	4	3	-	-	8bit x 8 16bit x 4	-	-	1	-	-	2	-	-	-	24 x 4	-	SMC x 2ch Sound generator Option without CAN	On-chip Debug
	MB96F673R						128.5K +32K																							1						
	MB96F675A						128.5K +32K																							1						
	MB96F675R						128.5K +32K																							1						
MB96680	MB96F683A	32	LQFP-80	2.7 to 5.5	✓	Dual Op. Flash	64.5K +32K	4K	-	2	7	-	65 (Single clock) 63 (Dual clock)	14(1)	-	-	-	2	4	3	-	-	8bit x 8 16bit x 4	-	-	1	-	-	2	-	-	-	32 x 4	-	SMC x 2ch Sound generator Option without CAN	On-chip Debug
	MB96F683R						128.5K +32K																							1						
	MB96F685A						128.5K +32K																							1						
	MB96F685R						128.5K +32K																							1						
MB96690	MB96F693A	32	LQFP-100	2.7 to 5.5	✓	Dual Op. Flash	64.5K +32K	8K	-	4	16	-	79 (Single clock) 77 (Dual clock)	27(1)	-	-	4	2	6	5	-	-	8bit x 14 16bit x 10	-	-	1	-	-	5	-	-	-	36 x 4	-	SMC x 4ch Sound generator x 2ch Option without CAN	On-chip Debug
	MB96F693R						128.5K +32K																							1						
	MB96F695A						256.5K +32K																							1						
	MB96F695R						256.5K +32K																							1						
MB966A0	MB96F6A5A	32	LQFP-120	2.7 to 5.5	✓	Dual Op. Flash	128.5K +32K	8K	-	4	16	-	97 (Single clock) 95 (Dual clock)	32(1)	-	-	4	2	8	5	-	-	8bit x 24 16bit x 12	-	-	1	-	-	5	-	-	-	44 x 4	-	SMC x 5ch Sound generator x 2ch Option without CAN	On-chip Debug
	MB96F6A5R						256.5K +32K																							1						
	MB96F6A6R						256.5K +32K																							1						
MB966B0	MB96F6B5A	32	LQFP-100	2.7 to 5.5	✓	Dual Op. Flash	128.5K +32K	8K	-	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	-	-	-	36 x 4	-	Sound generator x 2ch Option without CAN	On-chip Debug
	MB96F6B5R						256.5K +32K																							1						
	MB96F6B6R						256.5K +32K																							1						
MB966C0	MB96F6C5A	32	LQFP-120	2.7 to 5.5	✓	Dual Op. Flash	128.5K +32K	8K	-	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	-	-	-	44 x 4	-	Sound generator x 2ch Option without CAN	On-chip Debug
	MB96F6C5R						256.5K +32K																							1						
	MB96F6C6R							16K																												