

SILICON LABS Microcontrollers



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MCU / MPU / DSP

Silicon Labs

C8051F70X CAPACITIVE TOUCH SENSE MCUS

The Silicon Labs C8051F70x MCU family meets designers' demands for Capacitive Touch Sense features and best-in-class performance. These high performance devices perform a wide range of mixed-signal functions and includes a high-speed 8051 Core, Capacitive Touch Sense with 16-bit capacitance-to-Digital Converter, superior noise immunity, fast 40µs acquisition time, and digital peripherals that include up to 39 port I/O with high sink current. The C8051F70x MCU family is robust and reliable with noise immune architecture with best-in-class SNR. Silicon Labs offers a simple GUI and API library that make implementation fast and easy.



Features:

- On-chip voltage comparator
- Precision calibrated 24.5 MHz internal oscillator
- Capacitive Sense interface with 32 input channels
- In-system, full-speed, non-intrusive debug interface (on-chip)

For quantities of 1000 and up, call for quote.

MOUSER STOCK NO.	Silicon Labs Part No.	Package	MIPS (Peak)	Flash (KB)	RAM (bytes)	Digital Port I/O Pins	Interfaces			Analog Peripherals							Price Each			
							UART	I2C	SPI	Internal Osc.	Timers	PCA Ch.	ADC	DAC	Temp Sensor	VREF	Comparators	1	25	100
634-C8051F700-GQ	C8051F700-GQ	QFP-64	25	15	512	54	Yes	Yes	Yes	±2%	4 16-bit	3	10-bit	No	Yes	Yes	1	7.02	6.50	6.02
634-C8051F701-GQ	C8051F701-GQ	QFP-64	25	15	512	54	Yes	Yes	Yes	±2%	4 16-bit	3	No	No	No	No	1	6.43	5.96	5.52
634-C8051F702-GQ	C8051F702-GQ	QFP-64	25	16	512	54	Yes	Yes	Yes	±2%	4 16-bit	3	10-bit	No	Yes	Yes	1	7.02	6.50	6.02
634-C8051F703-GQ	C8051F703-GQ	QFP-64	25	16	512	54	Yes	Yes	Yes	±2%	4 16-bit	3	No	No	No	No	1	6.43	5.96	5.52
634-C8051F704-GM	C8051F704-GM	QFN-48	25	15	512	39	Yes	Yes	Yes	±2%	4 16-bit	3	10-bit	No	Yes	Yes	1	6.49	6.01	5.57
634-C8051F704-GQ	C8051F704-GQ	QFN-48	25	15	512	39	Yes	Yes	Yes	±2%	4 16-bit	3	10-bit	No	Yes	Yes	1	6.90	6.22	5.27
634-C8051F705-GM	C8051F705-GM	QFN-48	25	15	512	39	Yes	Yes	Yes	±2%	4 16-bit	3	No	No	No	No	1	5.92	5.48	5.08
634-C8051F705-GQ	C8051F705-GQ	QFP-48	25	15	512	39	Yes	Yes	Yes	±2%	4 16-bit	3	No	No	No	No	1	5.62	5.20	4.82
634-C8051F706-GM	C8051F706-GM	QFN-48	25	16	512	39	Yes	Yes	Yes	±2%	4 16-bit	3	10-bit	No	Yes	Yes	1	6.49	6.01	5.57
634-C8051F706-GQ	C8051F706-GQ	QFP-48	25	16	512	39	Yes	Yes	Yes	±2%	4 16-bit	3	10-bit	No	Yes	Yes	1	6.14	5.69	5.27
634-C8051F707-GM	C8051F707-GM	QFN-48	25	16	512	39	Yes	Yes	Yes	±2%	4 16-bit	3	No	No	No	No	1	5.92	5.48	5.08
634-C8051F707-GQ	C8051F707-GQ	QFP-48	25	16	512	39	Yes	Yes	Yes	±2%	4 16-bit	3	No	No	No	No	1	5.62	5.20	4.82
634-C8051F708-GQ	C8051F708-GQ	QFP-64	25	8	512	54	Yes	Yes	Yes	±2%	4 16-bit	3	10-bit	No	Yes	Yes	1	5.85	5.42	5.02
634-C8051F709-GQ	C8051F709-GQ	QFP-64	25	8	512	54	Yes	Yes	Yes	±2%	4 16-bit	3	No	No	No	No	1	5.27	4.88	4.52
634-C8051F710-GQ	C8051F710-GQ	QFP-64	25	8	512	54	Yes	Yes	Yes	±2%	4 16-bit	3	10-bit	No	Yes	Yes	1	5.57	5.16	4.78
634-C8051F711-GQ	C8051F711-GQ	QFP-64	25	8	512	54	Yes	Yes	Yes	±2%	4 16-bit	3	No	No	No	No	1	4.98	4.61	4.27
634-C8051F712-GM	C8051F712-GM	QFN-48	25	8	512	39	Yes	Yes	Yes	±2%	4 16-bit	3	10-bit	No	Yes	Yes	1	5.38	4.98	4.62
634-C8051F712-GQ	C8051F712-GQ	QFP-48	25	8	512	39	Yes	Yes	Yes	±2%	4 16-bit	3	10-bit	No	Yes	Yes	1	5.09	4.71	4.37
634-C8051F713-GM	C8051F713-GM	QFN-48	25	8	512	39	Yes	Yes	Yes	±2%	4 16-bit	3	No	No	No	No	1	4.81	4.46	4.13
634-C8051F713-GQ	C8051F713-GQ	QFP-48	25	8	512	39	Yes	Yes	Yes	±2%	4 16-bit	3	No	No	No	No	1	4.59	4.25	3.94
634-C8051F714-GM	C8051F714-GM	QFN-48	25	8	512	39	Yes	Yes	Yes	±2%	4 16-bit	3	10-bit	No	Yes	Yes	1	4.52	4.19	3.88
634-C8051F714-GQ	C8051F714-GQ	QFN-48	25	8	512	39	Yes	Yes	Yes	±2%	4 16-bit	3	10-bit	No	Yes	Yes	1	4.32	4.00	3.71
634-C8051F715-GM	C8051F715-GM	QFP-48	25	8	512	39	Yes	Yes	Yes	±2%	4 16-bit	3	No	No	No	No	1	4.25	3.94	3.65
634-C8051F715-GQ	C8051F715-GQ	QFP-48	25	8	512	39	Yes	Yes	Yes	±2%	4 16-bit	3	No	No	No	No	1	4.05	3.75	3.48

C8051F70X CAPACITIVE TOUCH SENSE DEVELOPMENT TOOLS

MOUSER STOCK NO.	Silicon Labs Part No.	Description	Price Each
634-C8051F700-TB	C8051F700TB	C8051F700 MCU Family Target Board	49.00
634-KEYBOARDK	KEYBOARDK	C8051F700 Capacitive Touch Sense Evaluation Kit	52.50
634-C8051F700DK	C8051F700DK	C8051F700 MCU Family Development Kit	99.00

C8051F8XX CAPACITIVE TOUCH SENSE MCUS

The QuickSense™ C8051F8xx family of capacitive sensing MCUs provides an easy and reliable solution for capacitive buttons, sliders, wheels and capacitive proximity sensing. The C8051F800 family builds upon the C8051F700 MCU family by adding a lower-pin count, small form factor option to the industry's fastest capacitive touch sense solutions. The C8051F800 adds 16-, 20- and 24-pin package options to the existing 48- and 64-pin C8051F700, providing more options to fit products with the optimal pin count, size and cost. Additional resources such as a 10-bit ADC and digital PWM provide additional human interface support for accelerometers, vibratory haptic feedback, LED illumination control, temperature sensing and resistive touch screen sensing.



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							UART	I2C	SPI	Internal Osc.	Timers	PCA Ch.	ADC	DAC	Temp Sensor	VREF	Comparators	1	25	100
634-C8051F800-GM	C8051F800-GM	QFN-20	25	16	512	17	Yes	Yes	Yes	±2%	3 16-bit	3	10-bit	No	Yes	Yes	1	4.03	3.79	3.39
634-C8051F800-GU	C8051F800-GU	QSOP-24	25	16	512	17	Yes	Yes	Yes	±2%	3 16-bit	3	10-bit	No	Yes	Yes	1	4.03	3.79	3.39
634-C8051F803-GS	C8051F803-GS	SOIC-16	25	16	512	13	Yes	Yes	Yes	±2%	3 16-bit	3	10-bit	No	Yes	Yes	1	3.86	3.63	3.16
634-C8051F824-GS	C8051F824-GS	SOIC-16	25	8	512	13	Yes	Yes	Yes	±2%	3 16-bit	3	10-bit	No	Yes	Yes	1	3.15	2.96	2.86

C8051F8XX CAPACITIVE TOUCH SENSE DEVELOPMENT TOOLS

MOUSER STOCK NO.	Silicon Labs Part No.	Description	Price Each
634-C8051F800DK	C8051F800DK	Development Kit for C8051F8xx Series MCUs	99.00
634-FRONTANEL2EK	FRONTANEL2EK	Demonstrates capacitive button sensing, capacitive proximity sensing, infrared proximity sensing and LED control with the C8051F800 MCU and Si1120 C8051F700 MCU Family Development Kit	39.99

C8051F9XX ULTRA LOW POWER TOUCH SENSE MCUS

The QuickSense™ C8051F9xx family of capacitive sensing MCUs provides the lowest power and highest sensitivity touch sensing solution for capacitive buttons, sliders, wheels and capacitive proximity sensing. Architected from the popular C8051F9xx platform the device features a 150 µA/MHz active mode and multiple sleep modes as low as 10 nA. With up to 14 capacitive sensing inputs and a patent-pending charge timing hardware capacitance to digital converter, the C8051F9xx achieves unparalleled touch sensitivity, speed and ultra-low power in packages as small as a 3 mm x 3 mm QFN20.



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							UART	I2C	SPI	Internal Osc.	Timers	PCA Ch.	ADC	DAC	Temp Sensor	VREF	Comparators	1	25	100
634-C8051F990-GM	C8051F990-GM	QFN-20	25	8	512	16	Yes	Yes	Yes	±2%	4 16-bit	3	10/12-bit	No	Yes	Yes	1	4.02	3.72	1.99
634-C8051F991-GM	C8051F991-GM	QFN-20	25	8	512	16	Yes	Yes	Yes	±2%	4 16-bit	3	10/12-bit	No	Yes	Yes	1	3.11	2.99	2.88
634-C8051F996-GM	C8051F996-GM	QFN-24	25	8	512	17	Yes	Yes	Yes	±2%	4 16-bit	3	10/12-bit	No	Yes	Yes	1	3.90	3.61	3.35
634-C8051F996-GU	C8051F996-GU	QFN-24	25	8	512	17	Yes	Yes	Yes	±2%	4 16-bit	3	10/12-bit	No	Yes	Yes	1	3.90	3.61	3.35
634-C8051F997-GU	C8051F997-GU	QFN-24	25	8	512	17	Yes	Yes	Yes	±2%	4 16-bit	3	10/12-bit	No	Yes	Yes	1	3.31	3.18	3.05
634-C8051F997-GU	C8051F997-GU	QFN-24	25	8	512	17	Yes	Yes	Yes	±2%	4 16-bit	3	10/12-bit	No	Yes	Yes	1	3.31	3.18	3.05

C8051F9XX ULTRA LOW POWER TOUCH SENSE DEVELOPMENT TOOLS

MOUSER STOCK NO.	Silicon Labs Part No.	Description	Price Each
634-F990SLIDERK	F990SliderEK	Demonstrates the system level possibilities that can be achieved when combining Silicon Labs QuickSense™ technology with the C8051F9xx ultra low power capacitive sensing MCU.	30.15
634-C8051F996DK	C8051F996DK	Development Kit for the C8051F990, F991, F996 and F997 family of ultra low power capacitive sensing MCUs and the C8051F980, F981, F982, F983, F985, F986, F987, F988 and F989 family of ultra low power MCUs.	99.00

