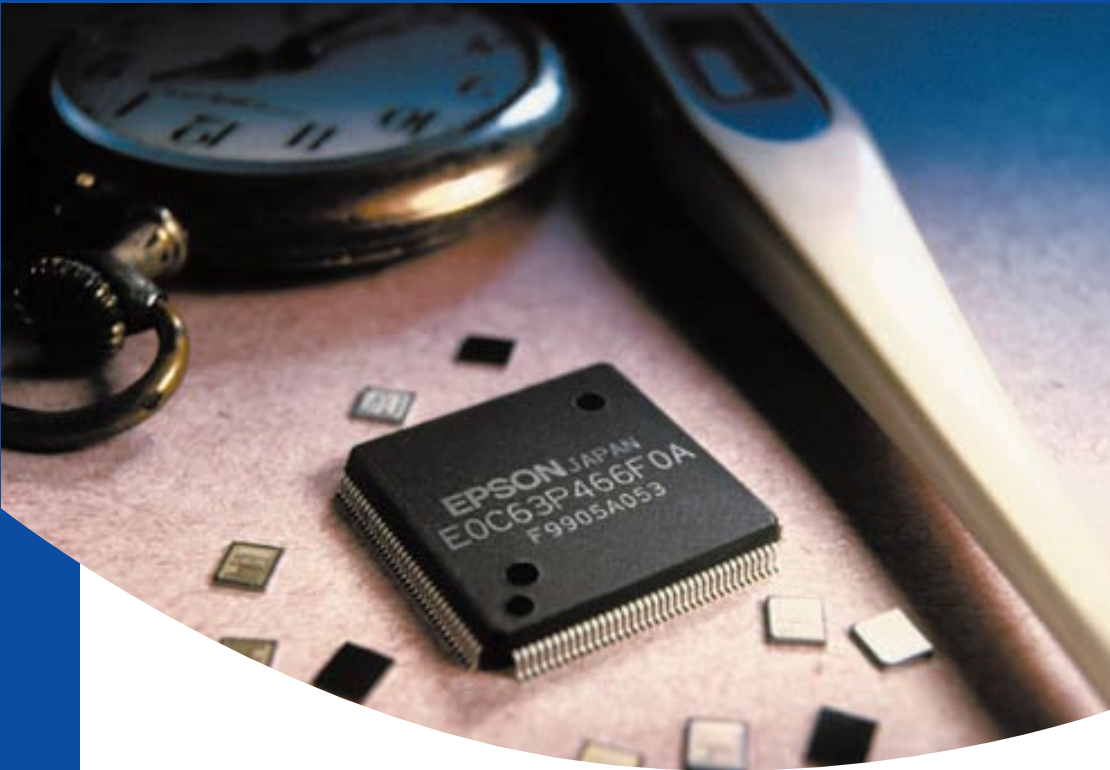


EPSON 4-Bit Microcontroller



Application Specific Microcontrollers

- High Performance
- Low Power Consumption
- LCD-Driver On-Board
- A/D, R/F Converter
- "Die" Package available
- Integrated Melody IC
- Built-in Gate Array
- DTMF/DP/FSK available





EOC60/62/63 Series

Application-Specific Microcontrollers

The EOC60, EOC62- and the EOC63-Series have 4-Bit Single-Chip Microcontroller for use in an ever increasing range of industrial and consumer products. Together with their unique Low-Power/Low-Voltage technology, the EOC60/62/63-Series offer the ideal way to enhance product performance and features, while keeping the development period short and costs low. A wide range of on-chip peripheral circuits are available, e.g. LCD Driver (Segment or Dot-Matrix), A/D or R/F converters, Serial I/O, Timers, different types of I/O-ports, Comparators, Stepping Motor Drivers and Melody Generators.

EPSON 4-Bit Microcontroller

E0C60 Series

Model No.	Supply Voltage (V)	Current Consumption		Clock frequency (Hz)	Memory (bit)		I/O Port (bit)		Instructions	Interrupts		LCD Drivers Common Segment	Features	Package
		Operating	Standby (Halt)		ROM	RAM	Input	Output		Input/Output	Ext.			
E0C-6001	1.8 to 3.6													
E0C-6011	1.2 to 2.0							2			1		Clock Timer LCD-Driver	480FP Die
E0C-6002	1.8 to 3.6	2.5µA	1µA	32,768K	80K40			4			2		1ch RF Converter Clock Timer, LCD-Driver	600FP Die
E0C-6012	1.2 to 2.0													
E0C-6003	1.8 to 3.6													
E0C-6013	1.2 to 2.0													
E0C-6004	2.7 to 3.6 4.5 to 5.5	450µA	330µA	2M	144K4		4		100	1	2, 3 or 4	15	Clock Timer LCD-Driver	Die
E0C-6005	1.8 to 3.5	1.5µA	0.8µA	32,768K	1.536K12									
E0C-6015	1.2 to 2.0													
E0C-6006	2.2 to 3.5	9µA 130µA	2µA	32,768K 455K	2,048K12	80K4		4		1		26	High Current Output, Clock Timer High Speed, Sleep Mode, LCD-Driver 2chRF Converter, Clock Timer LCD-Driver	480FP Die 600FP Die
E0C-6007	1.8 to 3.5	6.5µA 1mA	2.5µA	32,768K 2M		128K4 512K4	8	6		2		20	Clock Timer, Watchdog, LCD-Driver infrared remote-control output LCD-Driver	600FP, 640FP Die 1000FP Die
E0C-6008	1.8 to 3.5	2.2µA	1µA	32,768K			4			1		40	Dot-Matrix LCD-Driver, SoundGenerator, Watchdog Even Counter, Clock Timer, Stopwatch, Timer Serial Interface, Watchdog, Clock Timer	Die

¹ under development

Model No.	Supply Voltage (V)	Current Consumption Operating (Halt)	Clock frequency (Hz)	Memory (bit) ROM RAM	I/O Port (bit) Input Output Input/Output	Instructions	Interrupts Ext. Int.	LCD Drivers Common Segment	Features	Package	
E0C6010B	0.9 to 1.7	3µA 50µA	32.768k 500k	4,096x12	8 4 4	108	3	48	Stopwatch Timer, Event Counter LCD-Driver, SupplyVoltageDetection AD-Comparator, SoundGenerator	100FFP Die	
E0C60A0B	2.2 to 3.5	7µA 115µA	32.768k 500k	4,096x12	8 4 4	108	3	48	RF Converter, Clock Timer, Watchdog REMCarrrierOutput, SupplyVoltageDetection	800FF Die	
E0C60R0B	2.2 to 3.5	1.9µA 115µA	32.768k 500k	1,536x12	4 4 4	100	1	2, 3 or 4	Clock Timer, Stopwatch Timer Clock Timer, Stopwatch Timer	600FF Die	
E0C609	2.6 to 3.6	3µA	32.768k	1,536x12	4 4	101	2	38	Clock Timer, LCD-Driver Sleep-Mode (0.3µA)	800FF Die	
E0C60109	1.2 to 1.8	8.5µA 35µA	65k 260k	4,096x12	5 9 4	108	2	3, 2, 3 or 4	Clock Timer, Watchdog, LCD-Driver Stopwatch Timer, Event Counter	800FF Die	
E0C6011	1.2 to 1.8	2.2µA TBD	32.768k TBD	4,096x12	5 9 4	108	2	3, 2, 3 or 4	Clock Timer, watchdog, LCD driver infrared remote-control output no on-board programming supported	800FF Die	
E0C6013	1.1 to 1.8	2.2µA TBD	32.768k 455k	4,096x12	8 9 4	100	2	3, 2 or 4	Flash memory for prototyping, mass production	800FF Die	
E0C6014 ¹	2.2 to 3.6	9µA TBD	TBD								
E0C60F14 ¹	2.2 to 3.6	TBD	TBD								
E0C627C	2.2 to 3.5	7µA 250µA	32.768k 455k	2,084	8 4 4	108	2	5	3 or 4	34	
E0C627	2.2 to 3.6	1.9µA	0.7µA	804	4 4 4	100	1	3	2, 3 or 4	26	
E0C6S127	0.9 to 1.8	1.7µA	0.6µA	1,536x12	4 4 4	100	3	2, 3 or 4	Clock Timer, Stopwatch Timer Sleeping/MotorDriver LCD-Driver	600FF Die	
E0C6S827	0.9 to 3.6	1.9µA	0.7µA	2,2 to 3.6	70µA	60µA	200k		SupplyVoltageDetection	600FF Die	
E0C6S57	1.8 to 3.6	2.5µA	32.768k	1,024x12	804		2	26	Clock Timer, Stopwatch Timer SupplyVoltageDetection	600FF Die	
E0C6S137	0.9 to 2.0	E0C6S137	0.9 to 3.6		4 4 4		1		LCD-Driver	600FF Die	
E0C6S837	0.9 to 3.6	5µA	32.768k	1,536x12	964		3	26	SIO, SupplyVoltageDetection, Clock Timer Stopwatch Timer, LCD-Driver	480FF 800FF Die	
E0C62B	0.8 to 3.6	4µA	32.768k	2,048x12	1444		2	38	Clock Timer, Stopwatch Timer AD-Comparator Watchdog, SupplyVoltageDetection EventCounter	800FF Die	
E0C62A3B	1.8 to 3.6	300µA	1M			100		2, 3 or 4	Clock Timer, Stopwatch Timer TwinClock	800FF Die	
E0C6S52	1.8 to 3.6	2µA	32.768k	2,048x12	1444		2	38	Clock Timer, Stopwatch Timer AD-Comparator Watchdog, SupplyVoltageDetection EventCounter	800FF Die	
E0C6S132	0.9 to 1.8	2µA	32.768k	2,048x12	1444		2	38	Clock Timer, Stopwatch Timer AD-Comparator Watchdog, SupplyVoltageDetection EventCounter	800FF Die	
E0C6S832	0.9 to 3.6	4µA	32.768k	2,048x12	1444		2	38	Clock Timer, Stopwatch Timer AD-Comparator Watchdog, SupplyVoltageDetection EventCounter	800FF Die	
E0C6S432	1.8 to 3.6	150µA	1M								
E0C624C	6.5µA	2.5µA	32.768k	5,120x12	1,152x4			51	Dot Matrix LCD Driver, SIO, SupplyVoltageDetection Sound Generator, Clock Timer, Stopwatch Timer	140FFP Die	
E0C6S46	2.2 to 3.5	6.5µA	32.768k	6,144x12	640x4	8 20 16	2 4	8, 16	SIO, WatchdogTimer E0C6S46 can access external memory	1280FF Die	
E0C6S48	6.5µA	2.5µA	32.768k	8,192x12	768x4			51	E0C6S48 can access external memory	140FFP Die	
E0C6251	1.8 to 3.5	2.5µA	32.768k	1,024x12	804	4 4 4	1	2, 3 or 4	Tot-RRF Converter, SupplyVoltageDetection Clock Timer, LCD-Driver	600FF Die	
E0C62L51	0.9 to 2.0	2.5µA	32.768k	6,144x12	640x4	8 8 8	2	5	2ch RRF Converter, Sound Generator, Clock Timer Stopwatch Timer, LCD-Driver, SIO, Prog. Timer 1280FF Die	1000FF Die	
E0C6256	0.9 to 3.6	2.2µA	32.768k	2,048x12	1284	4 4 8	1	2	3ch RRF Converter, Sound Generator, Clock Timer Watchdog, SupplyVoltageDetection, LCD-Driver	600FF Die	
E0C6292	2.3 to 3.5	5µA 270µA	32.768k 1M	2,048x12	1284	4 4 8	1	2	3ch RRF Converter, Sound Generator, Clock Timer Watchdog, SupplyVoltageDetection, LCD-Driver	600FF Die	
E0C6262	2.2 to 3.0	7µA	32.768k	2,048x12	1284	8 8 16	2	3	SIO, Clock Timer EventCounter	400FF Die	
E0C62L62	0.8 to 2.2	5µA	32.768k	2,048x12	1284	8 8 16	2	3	SupplyVoltageDetection Watchdog	480FF Die	
E0C62A62	2.2 to 3.0	7µA	32.768k	2,048x12	1284	8 8 16	2	3	SupplyVoltageDetection Watchdog	480FF Die	
E0C6274	2.2 to 3.5	6µA	32.768k	4,096x12	512x4	5 4 12	109	2	5	2, 3 or 4	32
E0C62M2	2.2 to 3.5	1.1µA	32.768k	1,536x12	1,284	8 6 4	100	2	2, 3 or 4	16	
E0C6281	1.8 to 3.5	2.5µA	32.768k	1,024x12	964			26	Clock Timer, Stopwatch Timer, Prog. Timer, SIO AD Converter, SupplyVoltageDetection, LCD-Driver	1000FF Die	
E0C62L81	0.9 to 3.5	2.5µA	32.768k	1,024x12	964			26	AD Converter, Clock Timer, SIO, LCD-Driver	800FF Die	
E0C62L82	2.2 to 3.5	4µA	32.768k	2,048x12	2244	5 8 4	100	2	Melody/Circul, AD Comparator, Clock Timer Stopwatch Timer, SupplyVoltageDetection	600FF Die	
E0C62A82	2.2 to 3.5	150µA	1M	2,048x12	2244			8	Melody/Circul, Clock Timer, Stopwatch Timer AD Comparator, SupplyVoltageDetection LCD-Driver	800FF Die	

E0C62 Series

Remote circuit

Sleeping Motor Driver

Clock Stopwatch

Dot Matrix LCD-Driver

RF Converter

No LCD-Driver

Dual-Slope AD Converter

Melody IC

E0C63 Series

A/D Converter

Model No.	Supply Voltage (V)	Current Consumption Operating (Standby) (Halt)	Clock frequency (Hz)	Memory (bit) ROM (Code)	I/O Port (bit) Input Output	Instructions	Interrupts Ext. Int.	LCD Drivers Common Segment	Features	Package
E0C63158	0.9 to 3.6	4µA 900µA	32.768k 4M	8,192x13	9 12 20		3 4	-	A/D Converter, SIO, EventCounter, SupplyVoltageDetection	480FP, 640FP Die
E0C63256	2.7 to 5.5	1.2µA 1.5µA 620µA	2M 4.194M	6,144x13	4 4 8	411	1 3	20	A/D Converter, SleepMode, EventCounter, LCD-Driver, SupplyVoltageDetection	640FP Die
E0C63358	0.9 to 3.6	6µA 900µA	32.768k 4M	8,192x13	9 12 20		3 4	2, 3, 4	A/D Converter, SIO, EventCounter, LCD-Driver, SupplyVoltageDetection	1000FP Die
E0C63P266	2.7 to 5.5	120µA 800µA	32.768k 4M	16,384x13	2,048x4				100 lines programmable MCU for E0C63138K/E0C63358 parallel/serial programming	

Dot-Matrix LCD-Driver

Model No.	Supply Voltage (V)	Current Consumption Operating (Standby) (Halt)	Clock frequency (Hz)	Memory (bit) ROM (Code)	I/O Port (bit) Input Output	Instructions	Interrupts Ext. Int.	LCD Drivers Common Segment	Features	Package
E0C63404	1.8 to 6.4	10µA 270µA	32.768k 1M	4,096x13	8 12 12		2	8, 9	Multiple Times, Event Counter, SIO, Sound Generator, Dot-Matrix, DisplayRAM, SVD-Circuit	1280FP Die
E0C63406	1.3 to 3.6	TBD	32.768k 4M	6,144x13	-			8, 9	Multiple Times, Event Counter, SIO, Sound Generator, Dot-Matrix, DisplayRAM, SVD-Circuit	1280FP Die
E0C63408	1.3 to 3.6	TBD	32.768k 4M	8,129x13	-			8, 16, 17	Multiple Times, Event Counter, SIO, Sound Generator, Dot-Matrix, DisplayRAM, SVD-Circuit	1280FP Die
E0C63454	1.8 to 6.4	10µA 1mA	32.768k 4M	4,096x13	4 4 8		1	8, 16, 17	Multiple Times, Event Counter, SIO, Sound Generator, Dot-Matrix, DisplayRAM, SVD-Circuit	1000FP Die
E0C63455	1.8 to 6.4	4µA 1mA	32.768k 4M	4,096x13	4 4 8	411	4	8	Multiple Times, Event Counter, SIO, Sound Generator, Dot-Matrix, DisplayRAM, SVD-Circuit	Die
E0C63458	1.8 to 6.4	10µA 1mA	32.768k 4M	8,129x13	8 12 12		2	8, 16, 17	Multiple Times, Event Counter, SIO, Sound Generator, Dot-Matrix, DisplayRAM, SVD-Circuit	1440FP Die 1280FP Die
E0C63466	2.7 to 5.5	10µA 1.2mA	32.768k 4M	16,384x13	8 12 12		2		Multiple Times, Event Counter, SIO, Sound Generator, Dot-Matrix, DisplayRAM, SVD-Circuit	1440FP Die
E0C64P66	2.7 to 5.5	90µA 3mA	32.768k 4M	16,384x13	8 4 16		2	8 or 9	Sleep mode, external SVD input, LCD Driver, SIO, OSC, 18K05C3 built in resistor available	1280FP Die
E0C63467	1.2 to 3.6	10µA 1mA	32.768k 4M	16,384x13	8 4 16		2	5	DTMF/DP, Sound Generator, Event Counter, SupplyVoltageDetection, Dot-Matrix, DisplayRAM	1280FP Die
E0C63557	2.2 to 5.5	10µA 1.6mA(FSK)	32.768k 3.58M	8,192x13	8 12 16		5	40	DTMF/DP, FSK, Sound Generator, Event Counter, SupplyVoltageDetection, Dot-Matrix, DisplayRAM	Die
E0C63567	2.7 to 5.5	10µA 1mA	32.768k 3.58M	5,120x4	8 12 16	411	2	8, 16, 17	DTMF/DP Generator, Sound Generator, Event Counter, Watchdog, SIO, Dot-Matrix, DisplayRAM	1440FP Die
E0C63F567	2.7 to 5.5	10µA 1mA	32.768k 3.58M	16,384x13	8 12 16		10	60	Flash memory (100 lines) for prototyping and Mass Production, SupplyVoltageDetection	Die
E0C5290	2.7 to 5.5	1.8mW(3V) 3mA(5V)	3.579545M	-	-		-	-	Ballcore CAS detection, ITU V.23&Bell 202 FSK receiver, BT -idle tone-Akt signal-detection	SOP1-24 Die
E0C5251	2.7 to 5.5	1.8mW(3V) 3mA(5V)	3.579545M	-	-		-	-	BT -idle tone-Akt signal-detection, upgrade of E0C5250, incl. CAS signal, single-end input Off-hook detection, FSK energy mode	SOP2-28 Die, DIP28

R/F Converter

Model No.	Supply Voltage (V)	Current Consumption Operating (Standby) (Halt)	Clock frequency (Hz)	Memory (bit) ROM (Code)	I/O Port (bit) Input Output	Instructions	Interrupts Ext. Int.	LCD Drivers Common Segment	Features	Package
E0C63458	1.8 to 3.6	2.8µA 1mA	32.768k 4M	8,384x13	8 8 8		2	10	Stopwatch (17/100s/1/10s, 1/1s), LCD Driver, SIO	1440FP Die
E0C63466	2.4 to 3.6	2.8µA 1mA	32.768k 4M	5,120x4	8 8 8	411	2	4, 5, 8	RF Converter (2ch-20bit counter), 8 bit calculation unit	1280FP Die
E0C63F664	2.4 to 3.6	TBD	32.768k 4M	16,384x13	8 8 8		2	64	Flash memory version for prototyping and Mass production	1440FP Die

Built-In Gate Array

Model No.	Supply Voltage (V)	Current Consumption Operating (Standby) (Halt)	Clock frequency (Hz)	Memory (bit) ROM (Code)	I/O Port (bit) Input Output	Instructions	Interrupts Ext. Int.	LCD Drivers Common Segment	Features	Package
E0C63A08	1.8 to 3.6	10µA 300mA	32.768k 1M	2,048x4	20 20		6	8, 16, 17	Gate Array (10,000 gates), Memory IC, SIO, Event Counter, SupplyVoltageDetection	2080FP Die
E0C63B08	5.3µA 87.5mA	1.2µA 400k	32.768k 400k	8,192x13	8 8 12	411	2	5	Gate Array (11,000 gates), SIO, Event Counter, SupplyVoltageDetection	1000FP Die
E0C63B07	0.9 to 3.6	3.5µA 85mA	32.768k 400k	10,24x4	8 8 12		6	2, 3, 4	Gate Array (10,000 gates), Memory IC, SIO, Dot-Matrix, LCD Driver, SupplyVoltageDetection	1600FP Die
E0C63B58	3.2.768k 400k	TBD	32.768k 400k	10,24x4	8 8 12		6	32	Gate Array (11,000 gates), SIO, prog. Timer, Dot-Matrix, LCD Driver, SupplyVoltageDetection	1000FP Die

¹ under development

EPSON 4-Bit Microcontroller

Development Tools

E0C60/62 Series

The development tool kit for the E0C60/62 series microcontrollers consists of 3 hardware parts: Evaluation Board (for stand alone, real-time evaluation of the object code), In-Circuit Emulator (for High-Level Debugging) and LCD Emulator (optional only). Together with the development tool software, the kit allows easy and comfortable development of the desired application. The development tool kit operates with a standard PC.



E0C63 Series

With the ICE63 (In-Circuit Emulator), a powerful hardware tool is provided. In combination with the PRC63xxx (Peripheral Circuit Board) and the development tool software package, a fully Windows-based development environment is available that will easily meet your requirements for an efficient design-process. Apart from the normal (hardwarebased) real-time debugging (PC + ICE63), a simulator mode can be selected that allows debugging without the need of ICE63 (using the tool software only). Flash-based, multiple-use OTPs are available for certain products. E0C63 Series LCD Simulator is under development.



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