

# NXP® 8-bit S08 MCUs

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The 8-bit S08 MCU portfolio includes more than 30 product families, providing a wide range of feature and price options for product differentiation, to cover all kinds of automotive, industrial and consumer applications. This selection guide is a starting point for choosing a specific device. For the latest product information, visit [www.nxp.com/s08](http://www.nxp.com/s08).

## 8-bit S08 MCUs

Series	CPU	Memory	Key Features	Applications
<b>S08PA</b> 5V General Purpose	8-bit S08 Core 20 MHz	4 to 60 KB Flash 512 B to 4 KB RAM EEPROM 8 to 64 pins	12-bit ADC, ACMP UART, SPI, I <sup>2</sup> C Motor control FlexTimer, RTC 2.7 to 5.5V	Appliances (large and small) Electric motors Uninterruptible power supplies General purpose industrial control
<b>S08PT</b> 5V Touch	8-bit S08 Core 20 MHz	8 to 60 KB Flash 2 to 4 KB RAM EEPROM 16 to 64 pins	12-bit ADC, ACMP UART, SPI, I <sup>2</sup> C Motor control FlexTimer, RTC Touch sensing interface 2.7 to 5.5V	Appliance (large and small) Battery powered touch applications
<b>S08PL</b> 5V Cost Effective	8-bit S08 Core 20 MHz	4 to 60 KB Flash 512 B to 4 KB RAM EEPROM 8 to 64 pins	10-bit ADC, ACMP UART FlexTimer, RTC 2.7 to 5.5V	Appliances (large and small) Uninterruptible power supplies General purpose consumer electronics
<b>S08SU</b> Ultra High Voltage Motor Control	8-bit S08 Core 40 MHz	8 to 16 KB Flash 768 B RAM QFN24	Gate Driver Unit (GDU) 12-bit ADC, ACMP PWT, MCPWM 4.5 to 18V	BLDC motors Power tools 3-phase DC fan Drones Robots
<b>S08QL</b> 3V Low Power	8-bit S08 Core 20 MHz	4 to 8 KB Flash 256 to 512 B RAM 16 to 20 pins	12-bit ADC, ACMP SCI, TPM 1.8 to 3.6V	Battery Powered Applications Low power applications Smoke detector
<b>S08LL</b> 3V Segment LCD	8-bit S08 Core 20 MHz	8 to 16 KB Flash 2 KB RAM 48 to 64 pins	12-bit ADC, ACMP UART, SPI, I <sup>2</sup> C Segment LCD driver Timer/PWM, TOD 1.8 to 3.6V	Small appliances Battery-operated handheld devices Portable health care devices Scrolling text displays Alarms/clocks



### S08PA Series | 5V General Purpose

20 MHz S08 Core, 4 to 60 KB Flash, 12-bit ADC, motor control PWM, 8-64 pins package.

Part no.	S08 Core	Core/Bus Frequency (MHz)	Flash (KB)	RAM (KB)	EEPROM (B)	Motor control PWM channels	Basic Timer/PWM channels	12-b ADC	10-b ADC	ACMP	UART (SCI)	SPI	I <sup>2</sup> C	Touch Sensing	Modulo Timers	RTC	Gate Driver Unit	Segment LCD	-40° to +85°	-40° to +105°	-40° to +125°	Operation Voltage	Packages
PA60	8-bit	20/20	60	4	256	6-ch	4-ch	1x 12-ch	-	1	3	2	1	-	2	Y	-	-	-	Y	-	2.7-5.5V	QFP64, LQFP64, LQFP48, LQFP44, LQFP32
PA32	8-bit	20/20	32	4	256	6-ch	4-ch	1x 12-ch	-	1	3	2	1	-	2	Y	-	-	-	Y	-	2.7-5.5V	QFP64, LQFP64, LQFP48, LQFP44, LQFP32
PA16	8-bit	20/20	16	2	256	6-ch	2-ch	1x 12-ch	-	1	3	1	1	-	1	Y	-	-	-	Y	Y	2.7-5.5V	LQFP44, LQFP32, SO20, TSSOP20, TSSOP16
PA8	8-bit	20/20	8	2	256	6-ch	2-ch	1x 12-ch	-	1	3	1	1	-	1	Y	-	-	-	Y	Y	2.7-5.5V	LQFP44, LQFP32, SO20, TSSOP20, TSSOP16
PA4	8-bit	20/20	4	0.5	128	-	6-ch	1x 8-ch	-	1	1	-	-	-	-	Y	-	-	-	Y	Y	2.7-5.5V	SO20, TSSOP20, TSSOP16, SO8, DFN8

### S08PT Series | 5V Touch

20 MHz S08 Core, 8 to 60 KB Flash, 12-bit ADC, motor control PWM, touch sensing interface, 16-64 pins package.

Part no.	S08 Core	Core/Bus Frequency (MHz)	Flash (KB)	RAM (KB)	EEPROM (B)	Motor control PWM channels	Basic Timer/PWM channels	12-b ADC	10-b ADC	ACMP	UART (SCI)	SPI	I <sup>2</sup> C	Touch Sensing	Modulo Timers	RTC	Gate Driver Unit	Segment LCD	-40° to +85°	-40° to +105°	-40° to +125°	Operation Voltage	Packages
PT60	8-bit	20/20	60	4	256	6-ch	4-ch	1x 12-ch	-	1	3	2	1	16	2	Y	-	-	-	Y	-	2.7-5.5V	QFP64, LQFP64, LQFP48, LQFP44, LQFP32
PT32	8-bit	20/20	32	4	256	6-ch	4-ch	1x 12-ch	-	1	3	2	1	16	2	Y	-	-	-	Y	-	2.7-5.5V	QFP64, LQFP64, LQFP48, LQFP44, LQFP32
PT16	8-bit	20/20	16	2	256	6-ch	2-ch	1x 12-ch	-	1	3	1	1	16	1	Y	-	-	-	Y	Y	2.7-5.5V	LQFP44, LQFP32, SO20, TSSOP20, TSSOP16
PT8	8-bit	20/20	8	2	256	6-ch	2-ch	1x 12-ch	-	1	3	1	1	16	1	Y	-	-	-	Y	Y	2.7-5.5V	LQFP44, LQFP32, SO20, TSSOP20, TSSOP16

### S08PL Series | 5V Cost Effective

20 MHz S08 Core, 4 to 60 KB Flash, 10-bit ADC, basic Timer/PWM, 8-64 pins package.

Part no.	S08 Core	Core/Bus Frequency (MHz)	Flash (KB)	RAM (KB)	EEPROM (B)	Motor control PWM channels	Basic Timer/PWM channels	12-b ADC	10-b ADC	ACMP	UART (SCI)	SPI	I <sup>2</sup> C	Touch Sensing	Modulo Timers	RTC	Gate Driver Unit	Segment LCD	-40° to +85°	-40° to +105°	-40° to +125°	Operation Voltage	Packages
PL60	8-bit	20/20	60	4	256	-	10-ch	-	1x 12-ch	1	3	-	-	-	1	Y	-	-	Y	-	-	2.7-5.5V	QFP64, LQFP44, LQFP32
PL32	8-bit	20/20	32	4	256	-	10-ch	-	1x 12-ch	1	3	-	-	-	1	Y	-	-	Y	-	-	2.7-5.5V	QFP64, LQFP44, LQFP32
PL16	8-bit	20/20	16	2	256	-	8-ch	-	1x 12-ch	1	3	-	-	-	1	Y	-	-	Y	-	-	2.7-5.5V	LQFP32, TSSOP20, TSSOP16
PL8	8-bit	20/20	8	2	256	-	8-ch	-	1x 12-ch	1	3	-	-	-	1	Y	-	-	Y	-	-	2.7-5.5V	LQFP32, TSSOP20, TSSOP16
PL4	8-bit	20/20	4	0.5	128	-	6-ch	-	1x 8-ch	1	1	-	-	-	-	Y	-	-	Y	-	-	2.7-5.5V	TSSOP20, TSSOP16, S08

### S08SU Series | Ultra High Voltage Motor Control

20 MHz S08 Core, 4 to 60 KB Flash, 10-bit ADC, basic Timer/PWM, 8-64 pins package.

Part no.	S08 Core	Core/Bus Frequency (MHz)	Flash (KB)	RAM (KB)	EEPROM (B)	Motor control PWM channels	Basic Timer/PWM channels	12-b ADC	10-b ADC	ACMP	UART (SCI)	SPI	I <sup>2</sup> C	Touch Sensing	Inter Crossbar	Modulo Timers	RTC	Gate Driver Unit	Segment LCD	-40° to +85°	-40° to +105°	-40° to +125°	Operation Voltage	Packages
SU16	8-bit	40/20	16	768	-	6-ch	2-ch	2x 8-ch	-	1	3	2	1	-	Y	1	-	3-ph	-	-	Y	-	4.5-18V	QFN24
SU8	8-bit	40/20	8	768	-	6-ch	2-ch	2x 8-ch	-	1	3	2	1	-	Y	1	-	3-ph	-	-	Y	-	4.5-18V	QFN24

### S08QL Series | 3V Low Power

20 MHz S08 Core, 4 to 8 KB Flash, 12-bit ADC, ultra low power, 16 to 20 TSSOP.

Part no.	S08 Core	Core/Bus Frequency (MHz)	Flash (KB)	RAM (KB)	EEPROM (B)	Motor control PWM channels	Basic Timer/PWM channels	12-b ADC	10-b ADC	ACMP	UART (SCI)	SPI	I <sup>2</sup> C	Touch Sensing	Modulo Timers	RTC	Gate Driver Unit	Segment LCD	-40° to +85°	-40° to +105°	-40° to +125°	Operation Voltage	Packages
QL8	8-bit	20/10	8	512	-	-	1-ch	1x 8-ch	-	1	1	-	-	-	1	Y	-	-	Y	-	-	1.8-3.6V	TSSOP20, TSSOP16
QL4	8-bit	20/10	4	256	-	-	1-ch	1x 8-ch	-	1	1	-	-	-	1	Y	-	-	Y	-	-	1.8-3.6V	TSSOP20, TSSOP16

## S08LL Series | 3V Segment LCD

20MHz S08 Core, 8 to 16KB Flash, 12-bit ADC, ultra low power, segment LCD driver, 48 to 64 pins.

Part no.	S08 Core	Core/Bus Frequency (MHz)	Flash (KB)	RAM (KB)	EEPROM (B)	Basic Timer/PWM channels	12-b ADC	10-b ADC	ACMP	UART (SCI)	SPI	I <sup>2</sup> C	Touch Sensing	Modulo Timers	RTC	Gate Driver Unit	Segment LCD	-40° to +85°	-40° to +105°	-40° to +125°	Operation Voltage	Packages
LL16	8-bit	20/10	16	2	-	4-ch	1x 8-ch	-	1	1	1	1	-	-	Y	-	8x24 or 4x28	Y	-	-	1.8-3.6V	LQFP64, LQFP48, QFN48
LL8	8-bit	20/10	8	2	-	2-ch	1x 8-ch	-	1	1	1	1	-	-	Y	-	8x16 or 4x20	Y	-	-	1.8-3.6V	LQFP48, QFN48